

# Resettlement Planning Document

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## Cambodia: Northwest Irrigation Sector Project for Ta Saom, Kork Thnong, Don Aov, Canal No.1 and Chork Reservoir Subprojects

Prepared by Resettlement Unit of the Ministry of Water Resources and Meteorology

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KINGDOM OF CAMBODIA  
NATION RELIGION KING

**North-West Irrigation Sector Project**

**(Loan No. 2035-CAM [SF])**

**Resettlement Plan 3  
for  
Ta Saom, Kork Thnong, Don Aov, Canal No.1  
and Chork Reservoir Sub-Projects**

FINAL

**Resettlement Unit  
MOWRAM**

November 2009

## TABLE OF CONTENTS

TABLE OF CONTENTS.....	i
APPENDICES.....	iv
ACRONYMS AND ABBREVIATIONS.....	iv
Executive Summary .....	v
1 INTRODUCTION.....	7
1.1 Background.....	7
1.1.2 Ta Saom.....	7
1.1.3 Kork Thnong.....	7
1.1.4 Don Aov.....	8
1.1.5 Canal No.1 .....	8
1.1.6 Chork Reservoir.....	8
1.2 Resettlement Plan.....	9
1.3 LEAGAL FRAMEWORK AND POLICY .....	9
1.3.1 Cambodian Laws and Regulation .....	9
1.3.2 Government Resettlement Procedures.....	9
1.3.3 ADB Policies on Involuntary Resettlement.....	10
1.3.4 Principles of Resettlement .....	10
1.4 The Cut-off Date of the Subprojects .....	12
1.5 Eligibility.....	12
2 PROJECT IMPACT .....	12
2.1 Methodology .....	12
2.1.1 Data Gathering Instrument(s) and Procedures.....	12
2.1.2 Participation of the Public in the Survey.....	13
2.1.3 Processing of Data .....	13
3.2 RESULTS OF TA SAOM SUBPROJECT.....	13
3.2.1 Result of Detailed Measurement Survey.....	13
3.2.2 Basics of Unit Cost Used in Calculating Compensation for this Subproject.....	15
3.2.3 Detailed Compensation and Entitlements.....	16

3.2.4 Socio-Economic Profile .....	17
3.2.5 Public Participation and Consultation .....	18
3.2.6 Implementation Schedule .....	20
3.2.7 Costs and Budget.....	21
3.3 RESULTS OF KORK THNONG SUBPROJECT .....	22
3.3.1 Results of the Detailed Measurement Survey .....	22
3.3.2 Basics of Unit Cost Used in Calculating Compensation .....	24
3.3.3 Detailed Compensation and Other Entitlements .....	24
3.3.4 Socio-Economic Profile .....	25
3.3.5 Public Participation and Consultation .....	27
3.3.6 Implementation Schedule .....	28
3.3.7 Costs and Budget.....	29
3.4 RESULTS OF DON AOV SUBPROJECT .....	30
3.4.1 Results of the Detailed Measurement Survey .....	30
3.4.2 Basics of Unit Cost Used in Calculating Compensation .....	33
3.4.3 Detailed Compensation and Other Entitlements .....	33
3.4.4 Socio-Economic Profile .....	34
3.4.5 Public Participation and Consultation .....	35
3.4.6 Implementation Schedule .....	38
3.4.7 Costs and Budget.....	38
3.5 RESULTS OF CANAL NO.1 SUBPROJECT .....	39
3.5.1 Results of the Detailed Measurement Survey .....	39
3.5.2 Basics of Unit Cost Used in Calculating Compensation .....	43
3.5.3 Detailed Compensation and Other Entitlements .....	44
3.5.4 Socio-Economic Profile .....	45
3.5.5 Public Participation and Consultation .....	47
3.5.6 Implementation Schedule .....	49
3.5.7 Costs and Budget.....	49
3.6 RESULTS OF CHORK RESERVOIR SUBPROJECT .....	51
3.6.1 Results of the Detailed Measurement Survey .....	51

3.6.2	Basics of Unit Cost Used in Calculating Compensation .....	55
3.6.3	Detailed Compensation and Other Entitlements .....	55
3.6.4	Socio-Economic Profile .....	56
3.5.5	Public Participation and Consultation .....	58
3.6.6	Implementation Schedule .....	59
3.6.7	Costs and Budget .....	60
3.7	Total resettlement cost for 5 subprojects .....	62
4	GRIEVANCE REDRESS .....	62
4.1	Grievance Rights.....	62
4.2	Function .....	62
4.3	Steps Involved .....	63
4.4	Make up of the Grievance Committee .....	63
5	ORGANIZATIONAL FRAMEWORK .....	64
5.1	Institutions for Resettlement .....	64
5.1.1	Steering Committee.....	64
5.1.2	MOWRAM .....	64
5.1.3	Service Provider managing the Agriculture Training Program .....	64
5.1.4	Resettlement Subcommittee.....	65
5.1.5	Provincial Agencies .....	65
5.2	Monitoring and Evaluation.....	66
5.2.1	Indicators for In-house Monitoring .....	66
5.2.2	External Monitoring Agent (EMA) .....	66

## APPENDICES

Appendix 1	DMS Questionnaire
Appendix 2	DMS Data Report
Appendix 3	Socio-economic Questionnaire
Appendix 4	Focus Group Discussion Questionnaire
Appendix 5	Public Information Booklet
Appendix 6	Replacement Cost Study Report

## ACRONYMS AND ABBREVIATIONS

ADB	Asian Development Bank
AFD	Agence Française de Développement
AHs	Affected Household(s)
APs	Affected Person(s)
DMS	Detailed Measurement Survey
EA	Executing Agency
EMA	External Monitoring Agent
FGDs	Focused Group Discussions
GRC	Grievance Redress Committee
ha	Hectare
IRC	Inter-ministerial Resettlement Committee
MEF	Ministry of Economy and Finance
MLMUPC	Ministry of Land Management, Urban Planning and Construction
MOWRAM	Ministry of Water Resources and Meteorology
MRD	Ministry of Rural Development
NGO	Non-Government Organization
NWISP	North-West Irrigation Sector Project
PDAFF	Provincial Department of Agriculture, Forests and Fisheries
PDF	Provincial Department of Finance
PDLMUPC	Provincial Department of Land Management, Urban Planning and Construction
PDWRAM	Provincial Director of Water Resources and Meteorology
PIB	Public Information Booklet
PIU	Project Implementation Unit
PMO	Project Management Office (of MOWRAM)
PRSC	Provincial Resettlement Sub-Committee
PRSC-WG	Provincial Resettlement Sub-Committee Working Group
RCS	Replacement Cost Study
RGC	Royal Government of Cambodia
RP	Resettlement Plan
RS	Resettlement Subcommittee
RU	Resettlement Unit
TOR	Terms of Reference

## Executive Summary

1. **Ta Saom** irrigation subproject of North-West Irrigation Sector Project (NWISP) will irrigate 196 ha for supplementary wet season. The expected outcomes of the project are to boost agriculture production for the beneficiaries in Ta Saom commune and will rehabilitate a village road Kork Thmei. The project will rehabilitate a village road as a road embankment and construct a spillway, two Secondary Canals, three Secondary Drains, and other structures.
2. The subproject components will affect property of households in the subproject area, and the impact and the necessary compensation are addressed in this Resettlement Plan (RP3). It documents the magnitude of the impact, public consultations, suitable solutions, and provides the mitigation measures to be implemented.
3. The construction of Ta Saom subproject will totally affect 87 households. a total of 27,385.01 m<sup>2</sup> of rice land belonging to 84 AHs, 100 m<sup>2</sup> of pond land belonging to 1 AHs, and 372.37m<sup>2</sup> of residential land belonging to 4 AHs have to be acquired for the subproject construction. However, the loss of agricultural land of the 84 AHs, losing agricultural land, 2 AHs are severe impact due to the percentage of the loss is more than 10% of their total productive holding land and 21 AHs are categorised in vulnerable households.
4. The cost of Ta Saom subproject Resettlement Plan excluding administration costs is estimated at a total **\$12,471.98** with 15% contingency or **\$1,626.78**. Details are included in Table 3-2-8.
5. **Kork Thnong** irrigation subproject of NWISP will irrigate 154ha of rice land for supplementary wet season. The expected outcomes of the project are to boost agriculture production for the beneficiaries in Cha Chhouk commune and will construct of a Barrage, a Road Embankments, a Secondary Canal and structures such as Box Culvert, Pipe Culvert, Cross Drains, head Regulator and Tail structures.
6. The subproject will affect properties of households in the subproject area. The affected properties and the necessary compensation are addressed in this Resettlement Plan (RP3). It documents the scope of the negative impact, public consultations, suitable solutions, and provides the mitigation measures to be implemented.
7. The construction of Kork Thnong subproject will totally affect 50 households. a total of 38,053.20m<sup>2</sup> of rice land belonging to 47 AHs, 1,718.00m<sup>2</sup> of Chamkar land occupied by 1 AHs, and 409.08m<sup>2</sup> of residential land of 4 AHs have to be acquired for the subproject construction. Moreover, 47 AHs (47 AHs of rice land and 1 AH of Chamkar land), 2 AHs are severely affected owing to their loss of productive land is more than 10% of their total holding land.
8. The total cost of Kork Thnong subproject Resettlement Plan excluding administration costs is estimated at a total **\$17,190.57** with 15% contingency or **\$2,242.25**. Details are included in Table 3-3-7.
9. **Don Aov** irrigation subproject of NWISP will irrigate 1,100ha of rice land for supplementary wet season. The expected outcomes of the project are to boost agriculture production for the beneficiaries in 3 communes, Lovea, Seur and Chamnoam and will construct a Main Canal, 3 Secondary Canals, two Main Drains and three Secondary Drains and structures such as box culvert, pipe culvert, outlet, turnout, Oxcart Bridge, intake gate, siphone, check/drop and tail structures.
10. The works will affect property of households in the subproject area, and the impacts and the necessary compensation are addressed in this Resettlement Plan (RP). It

documents the magnitude of the impacts, the conduct of public consultations, the suitable solutions, and provides the mitigation measures to be implemented.

11. The construction of Don Aov subproject will totally affect 282 households. A total of 334,771.67m<sup>2</sup> of rice land occupied by 278 AHs, 2,435.65m<sup>2</sup> of Chamkar land belonging to 2 AHs and 1,516.50m<sup>2</sup> of residential land used by 6 AHs have to be acquired for the subproject construction. However, of 280 AHs (278 AHs of rice land and 2 AHs of Chamkar land), there are only 44 AHs loses productive land more than 10% of their holding land.

12. The cost of Don Aov subproject Resettlement Plan excluding administration costs is estimated at a total **\$161,314.87** with 15% contingency equivalent to **\$21,041.06**. Details are included in Table 3-4-8.

13. **Canal No.1** irrigation subproject of NWISP will irrigate 982 ha of rice land for supplementary wet season. The expected outcomes of the project are to boost agriculture production for the beneficiaries in three communes, Knach Romeas, ROUNG Chrey and Bansay Treng and will rehabilitate and construct a Main Canal, a Secondary Canals, a Main Drain, three Secondary Drains and structures such as Intake Gate, Check/Drop, Turnout, Boxe culvert, Pipe Culvert, Outlet and tail escape structures.

14. The construction of Canal No.1 subproject will totally affect 373 households. A total of 220,883.43m<sup>2</sup> of rice land, 464.00m<sup>2</sup> of Chamkar and 890.35m<sup>2</sup> of residential land will be acquired for the subproject and 324 rice land holders, 2 Chamkar land holders, 6 residential land holders and a pond land holder will partially lose their rice land, Chamkar, and residential land, respectively. Moreover, of 326 AHs (324 affected rice land holders and 2 affected Chamkar land holders), 22 AHs loses productive land more than 10% of their total holding productive land. For 12 landless AHs will be provided 2 relocation options, (1) they will be provided land plot of 7m x 15m for each landless AH at the nearby existing place, and (2) they will get cash for self relocation.

15. The cost of Canal No.1 subproject Resettlement Plan excluding administration costs is estimated at a total **\$162,422.67** including 15% contingency equivalent to **\$21,185.57**. Details are included in Table 3-5-9.

16. **Chork Reservoir** irrigation subproject of NWISP will irrigate 1,500 ha of rice land for supplementary wet season. The expected outcomes of the project are to boost agriculture production for the beneficiaries in two communes, Prey Touch and Kakaoh and will rehabilitate and construct a spillway, a Dam, a Main Canal, 7 Secondary Canals, a Main Drain, 8 Secondary Drains and numbers of structures such as Box Culvert, Open Flume, Head Regulator, Cross Drain, Oxcart Bridge, Check/Drop and Tail structures.

17. The construction of Chork Reservoir subproject will totally affect 214 households. A total of 107,715.16m<sup>2</sup> of rice land, 612.95m<sup>2</sup> of Chamkar and 596.62m<sup>2</sup> of residential land will be acquired for the subproject belonging to 173 rice land holders, 5 Chamkar land holders and 8 residential land holders respectively. All AHs will be partially affected on their rice, Chamkar and residential land. Of 177 AHs (173 affected rice land holders and 4 affected Chamkar land holders), there are no AH lose productive land more than 10% of their total holding productive land. For 6 landless AHs will be provided 2 relocation options, (1) they will be provided land plot of 7m x 15m for each landless AH at the nearby existing place, and (2) they will get cash for self relocation.

18. The cost of Chork Reservoir subproject Resettlement Plan excluding administration costs is estimated at a total **\$87,660.44** with 15% contingency or **\$11,433.97**. Details are included in Table 3-6-9.



19. This RP3 covers 5 subprojects such as Ta Saom, Kork Thnong, Don Aov, Canal No.1 and Chork Reservoir. As stated earlier, the natures of those five subprojects are different in the context of (1) scope and designs of the subproject construction, (2) subproject locations, and (3) local people preference and behavior. Therefore, the entitlements and resettlement costs for the subprojects are separated, and the total resettlement costs for all 5 subprojects excluding administration costs are estimated at **US\$517,802.31** (details are shown in **Table 3.7.1**).

20. There was a series of meetings and an Information Booklet was distributed to AHs in order to make them aware of (1) the project objectives in terms of social development through policy on Involuntary Resettlement of the Asian Development Bank (ADB), (2) the RP3 preparation procedures, and (3) AH's participation in the subproject implementation. Detail Measurement Survey (DMS) was carried out in March 2009, in order to record the project impact on each AH. A socio-economic survey was also conducted during the time covering 20% of affected households (AHs) anchored in Focus Group Discussions (FGDs) with three target groups to assess the socio-economic situation and the needs of and impact on AHs.

21. Replacement Cost Study (RCS) was also carried out to establish compensation rates for the subprojects reflecting the market price of the affected properties. The compensation rate calculation of the affected assets caused by all 5 subprojects is based on the replacement cost study conducted by a local consultant who prepared this RP3. In addition to the compensation of their affected assets, the subprojects are required, under the agreed policy, to provide allowances to vulnerable households, transportation allowance and living assistance for relocating households and shop-houses. For severely affected households will participate in the agriculture extension and income restoration program under component 3 of the project.

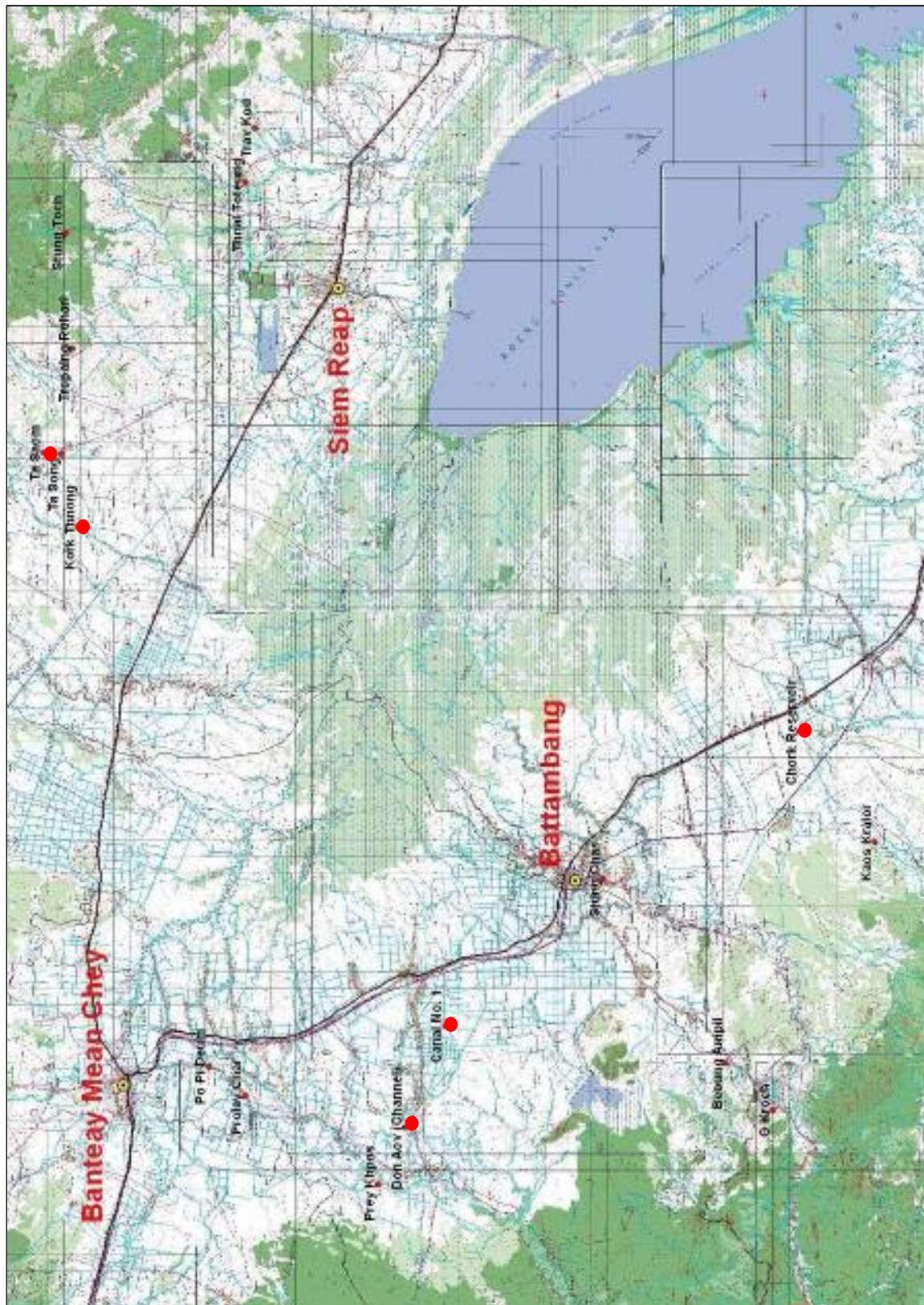


Figure 0-1: Location Map of Ta Saom, Kork Thnong, Don Aov, Canal No.1 and Chork Reservoir Subprojects

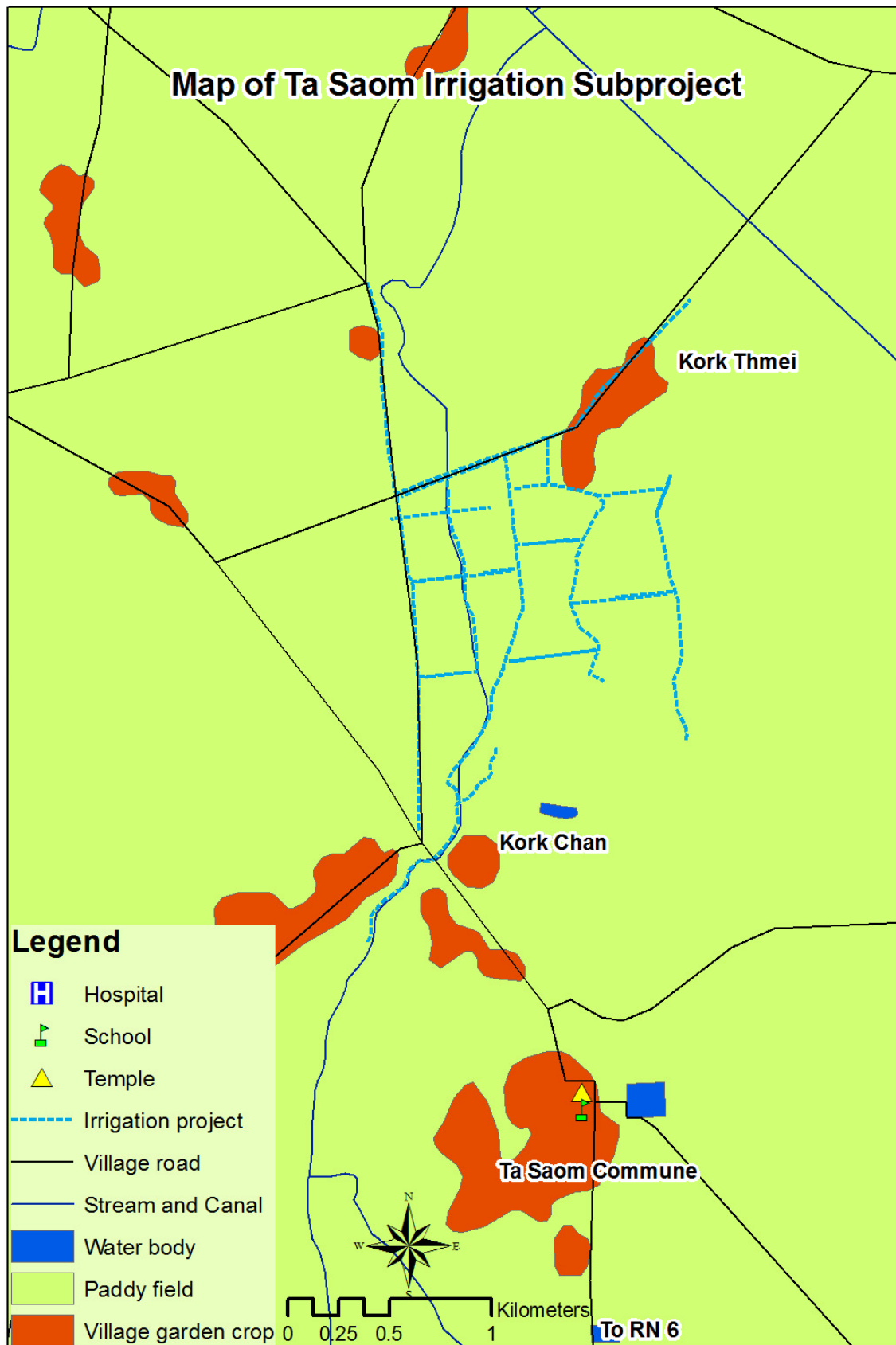


Figure 0-2: Map of Ta Saom Irrigation Subproject

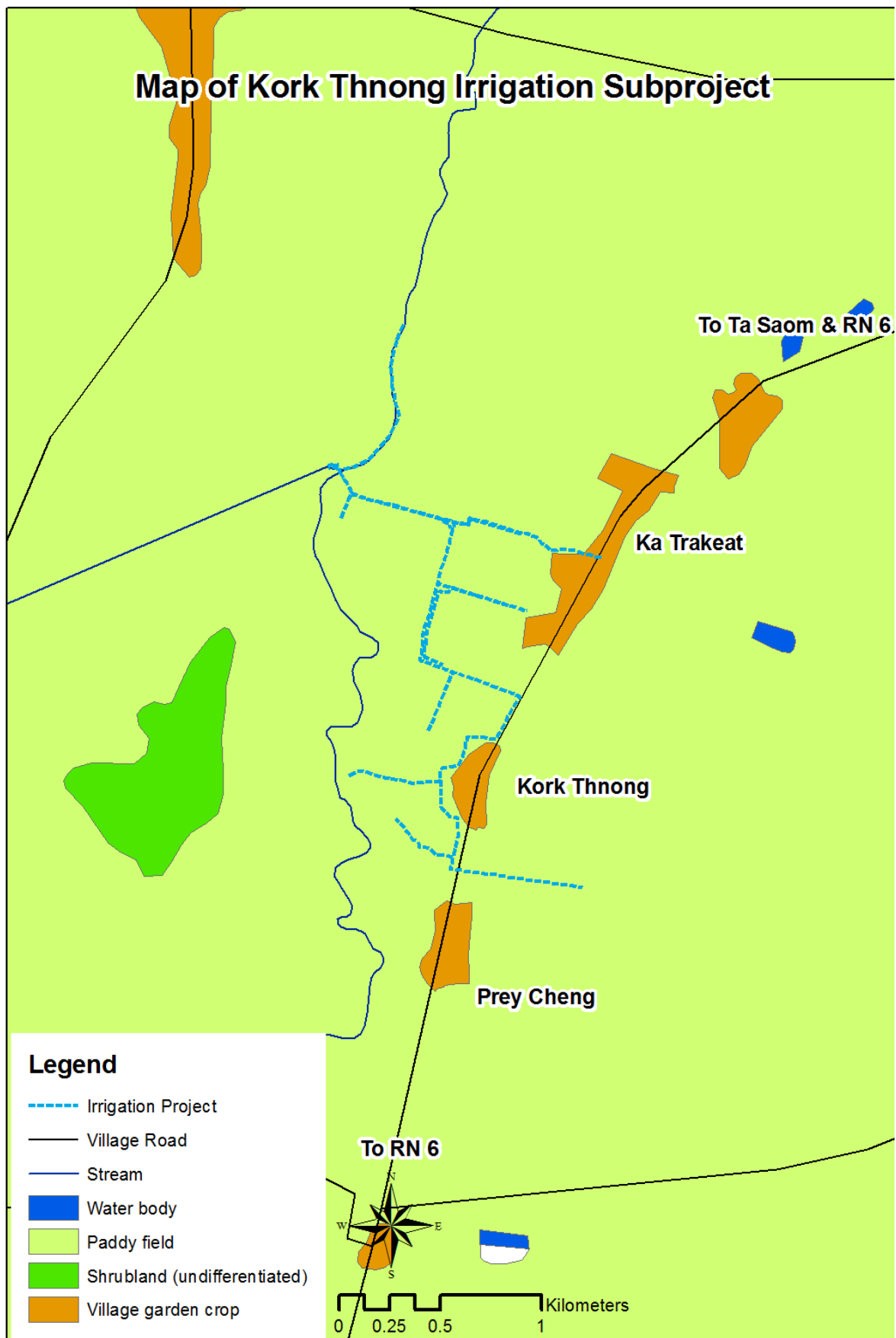


Figure 0-3: Map of Kork Thnong Irrigation Subproject



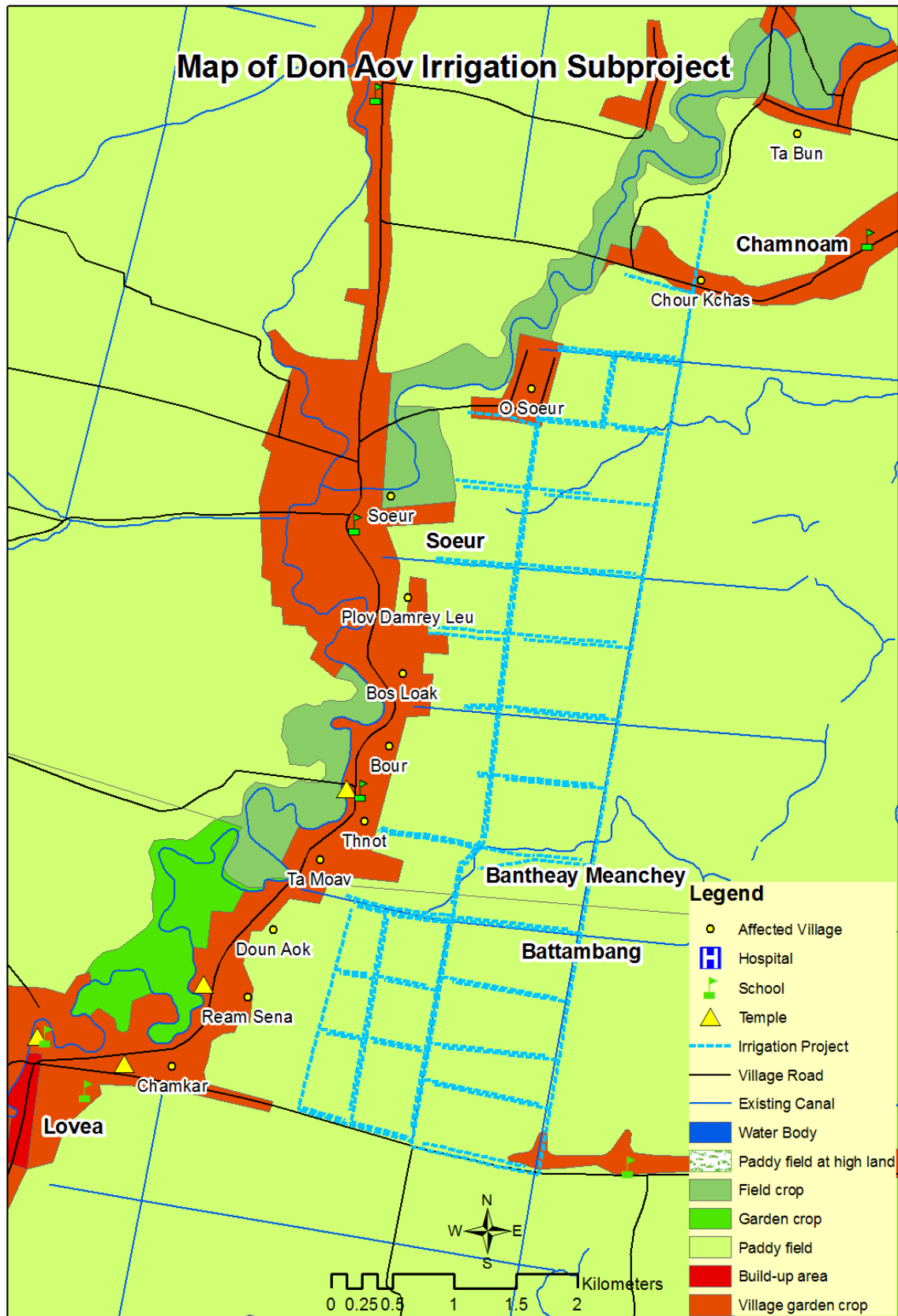


Figure 0-4: Map of Don Aov Irrigation Subproject

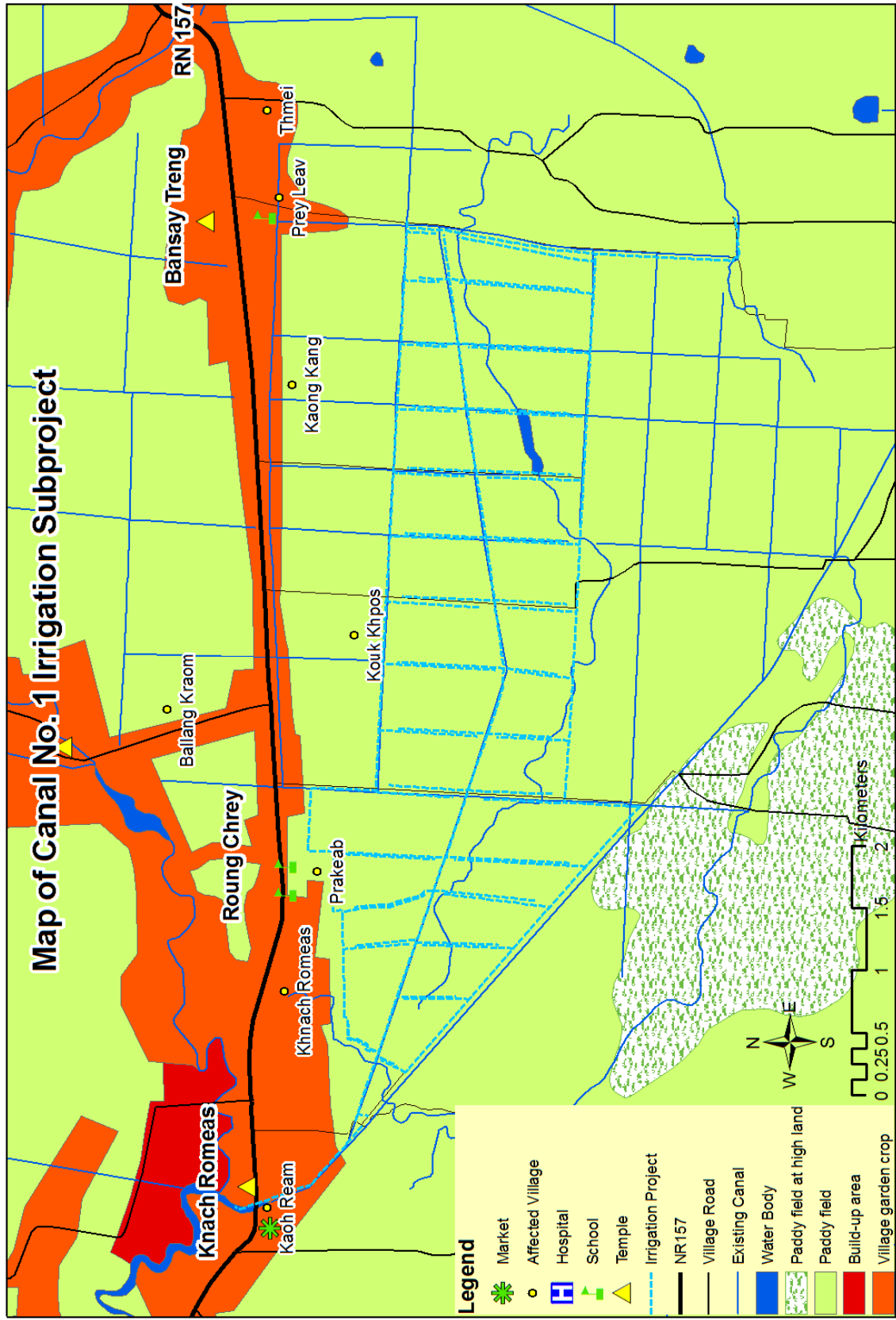


Figure 0-5: Map of Canal No.1 Irrigation Subproject

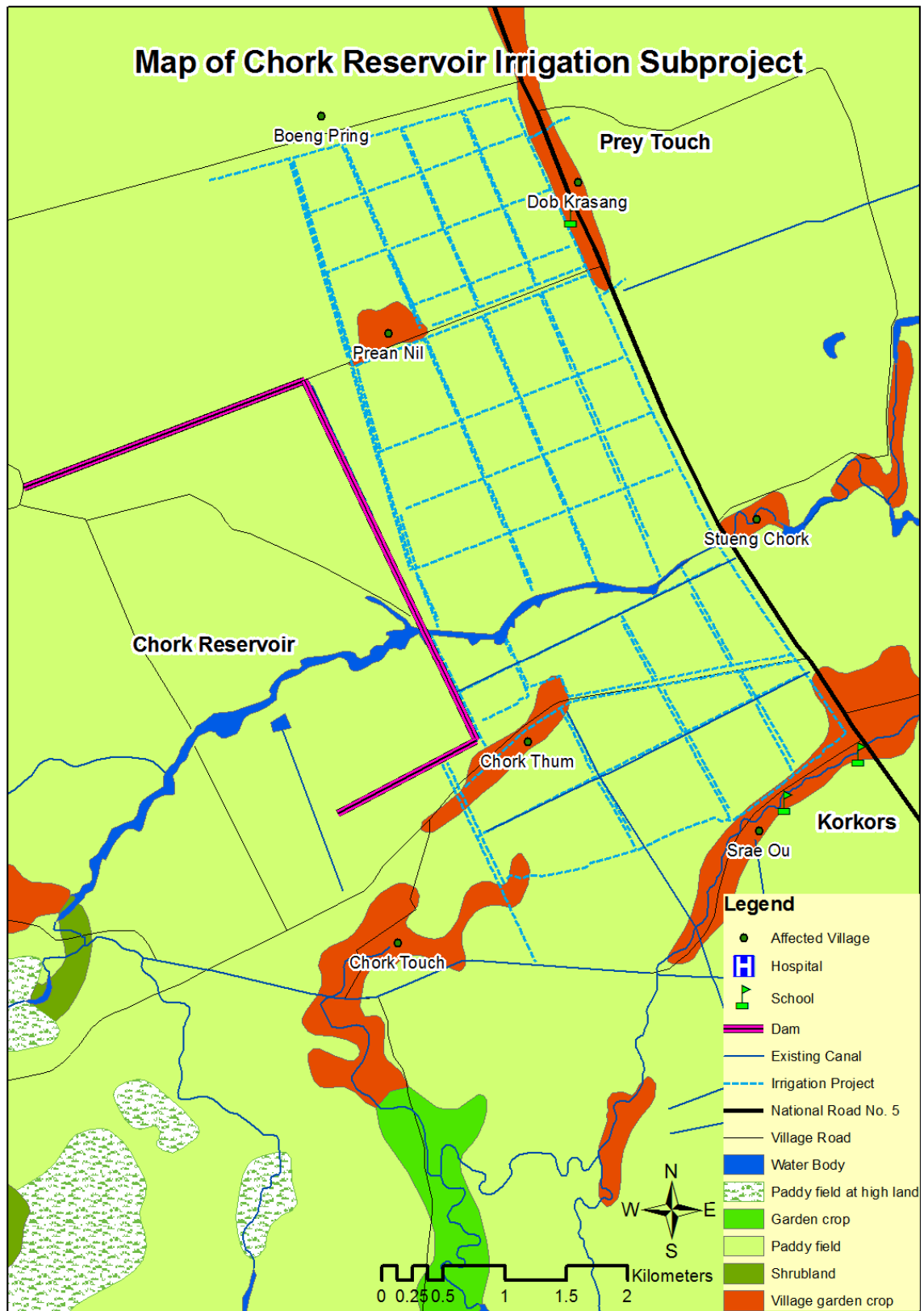


Figure 0-6: Map of Chork Reservoir Irrigation Subproject

## **1 INTRODUCTION**

### **1.1 Background**

22. Northwest Irrigation Sector Project (NWISP) is under the Loan No. 2035-CAM [SF] of Asian Development Bank (ADB) and grant from Agence Française de Développement (AFD) for consultation services as well as counterpart fund from the Royal Government of Cambodia. The NWISP is implemented by Ministry of Water Resource and Meteorology (MOWRAM) and totally has 11 subprojects, namely Puley, Ta Saom, Kork Thnong, Don Aov, Canal No.1, Chork Reservoir, Ta Saom, Kork Thnong, Canal No.1, Don Aov and Chork Reservoir. Of the 11 subprojects, Punley subproject was already prepared First Resettlement Plan (RP1) in 2008. The rest, 10 subprojects, have to be completed RP by the end of 2009 and those 10 subprojects are prepared in two separate RPs in order to facilitate the resettlement implementation and the timeframe for the project. The Second RP (RP2) covered 5 subprojects, namely Po Pi Deum, Anlong Svay, Krouch Saeuch, Tram Mneash and Kouch Noup and have already been submitted to CARM for final approval. The Third RP (RP3) covers the other five subprojects, such as Ta Saom, Kork Thnong, Canal No.1, Don Aov and Chork Reservoir. The belows are contents of the Third RP (RP3).

#### **1.1.2 Ta Saom**

23. Ta Saom is located in Kouk Chan and Kouk Thmei villages, Ta Saom commune, Angkor Chum district of Seam Reap province and about 43 km from Seam Reap town (**Fig. 0-1 & 0-2**). O Kchas is a small stream in the subproject which is used as irrigation source for the Ta Saom irrigation scheme. So far, in the command area of the subproject boundary, the villagers can cultivate rice with low risk of drought on rice land about 60ha over 290ha.

24. The subproject will construct a spillway, a road embankment, two Secondary Canals, three Secondary Drains, and other structures, to irrigate 196 ha rice land for supplementary wet season. The construction of Secondary Drain 2 is required to acquire residential land and pond in Kouk Thmei village. Two Secondary Canals, two Secondary Drains and other irrigation structures of the subproject are newly constructed and it would require acquiring agricultural land and trees. The construction of Spillway and Road Embankment is built on existing road and will not affect property of the villagers. The construction of Secondary Drain 3 also not required to any property of the villager because the Secondary Drain 3 is layed on the right-of-way of the village road.

#### **1.1.3 Kork Thnong**

25. Kork Thnong subproject is located in Kork Thnong, Ka Trakiet and Prey Cheng villages in Char Chhuk Commune, Angkor Chum District, Seam Reap province and about 53 km Northwest from Seam Reap provincial town (**Fig. 0-1 & 0-3**). The water for irrigation scheme is from diverting water from Stueng Phlang stream (also known as the O Don Meav) which flows through the subproject area and is seasonal stream. There have been many efforts to build small dykes across Stueng Phlang for irrigation purpose, but it is poorly function. Local farmers and village chiefs are trying every year to recover the functionality of these barrages after destroyed during the peak river flows year. The dyke in the subproject area has been totally destroyed by flood over the years and some of the "Takou" dyke which is 600m upstream from the proposed Kork Thnong dyke still remains. However there are three breaches in that dyke which local farmers from Prey Cheng village try to close every year.

26. The construction of the irrigation scheme of the subproject includes construction of a Barrage, a Road Embankments, a Secondary Canal and structures such as Box Culvert, Pipe Culvert, Cross Drains, head Regulator and Tail structure. The scheme is to irrigate 154ha of rice land during wet season and benefit to perhaps 147 households and will affect on assets and socio-economic of AHs as well as vulnerable households in the subproject area.



#### **1.1.4 Don Aov**

27. This subproject is located in Lovea commune, Bovel district, Battambang province and Seur and Cham Noam Communes, Mongkul Borey District, Bantheay Meanchey province and it is situated about 9 km at the West of RN5 (**Fig. 0-1 & 0-4**). Its irrigation scheme was constructed during 1935 and completed by the Khmer Rouge period and was damaged over the years by floods. Mongkul Borey River is the only water source which flows across the subproject area and is used as the main water source for the scheme.

28. The rehabilitation and construction of the irrigation scheme of the subproject includes construction of a Main Canal, 3 Secondary Canals, two Main Drains and three Secondary Drains and structures such as box culvert, pipe culvert, outlet, turnout, Oxcart Bridge, intake gate, siphon, check/drop and tail structure. The scheme is estimated to irrigate 1,100ha of rice land for supplementary irrigation during wet season and benefit to perhaps 2,200 households. The scheme will affect on assets and socio-economic of AHs as well as vulnerable households.

#### **1.1.5 Canal No.1**

29. The Canal No.1 subproject is located in Knach Romeas Commune of Bovel District and Rong Chrey and Bansay Treng communes of Thma Koul district, Battambang province and about few kilometers at South of RN 157 and approximately 42 km at Northwest of Battambang town (**Fig. 0-1 & 0-5**). Canal No.1 subproject is partly built on existing scheme such as Svay A in Thma Koul district and Canal No.1 which is part of Bovel irrigation scheme which was constructed during 1935 and completed by the Khmer Rouge period. The Canal No.1 subproject takes water from the Feeder Canal at Tomnup Thom Regulator in Khnach Romeas village, Khnach Romeas commune. At present, most of the existing scheme and its structures do not function properly due to lack of operation and maintenance, and the irrigation canals were shallow.

30. The rehabilitation and construction of the irrigation scheme of the subproject is a Main Canal, a Secondary Canals, a Main Drain, three Secondary Drains and structures such as Intake Gate, Check/Drop, Turnout, Box culvert, Pipe Culvert, Outlet and tail escape structures. The scheme is estimated to irrigate 982ha of rice land for supplementary irrigation during wet season and benefit to 2,170 households. The water sources for the scheme come from Bomnork River. The construction of the scheme will affect on assets and socio-economic of AHs as well as vulnerable households in subproject area.

#### **1.1.6 Chork Reservoir**

31. The Chork Reservoir subproject is located in Prey Touch and Ka Kaoh Communes, Mong Rusey district, Battambang province and is about 14 km from Mong Rusey district center, approximately 36 km from Battambang Provincial town and few kilometers from RN5 (**Fig. 0-1 & 0-6**). The Chork reservoir was constructed on the Chork stream in 1977 during Khmer Rouge regime. The dike forms a reservoir by “□” shaped earth-filled embankment with an average of 2.5 m high and 10 m wide at the base, extending for over 6,960 m in length to store the water from Chork River. The dam was damaged by flood in 1987, the water level of the reservoir is lower and then the villagers around the reservoir began to use the reservoir land for rice cultivation until present although they are at risk of flood caused by reservoir water. Besides, the lands in command area face with shortage of water for feeding their rice cultivation and risk of flood in some areas.

32. The rehabilitation and construction of Chork irrigation scheme will not affect on the existing cultivation in the reservoir area. The engineers of MOWRAM Technical Assistance calculated and design the new spillway of 1.5m crest height with 30cm higher than existing spillway height, 22m spillway length and drains which are able to contain water in the reservoir to optimize the use of water in command area and reservoir area with suitable level

of rice cultivation or without impact on rice cultivation in the reservoir area. The implementation of the subproject includes rehabilitation and construction of a spillway, a Dam, a Main Canal, 7 Secondary Canals, a Main Drain, 8 Secondary Drains and numbers of structures such as Box Culvert, Open Flume, Head Regulator, Cross Drain, Oxcart Bridge, Check/Drop and Tail structure. The scheme is estimated to irrigate 1,500ha of rice land for supplementary irrigation scheme during wet season benefit to perhaps 2,473 households. The scheme will affect on assets and socio-economic of AHs as well as vulnerable households in subproject area.

## **1.2 Resettlement Plan**

33. This RP3 assesses the various adverse social impact of constructing the water distribution canals and structures that will irrigate the command areas of (1) 196 ha rice land for supplementary wet season for Ta Saom, (2) 154 ha of rice land for supplementary wet season for Kork Thnong, (3) 1,100 ha of rice land for supplementary wet season for Don Aov, (4) 982 ha of rice land for supplementary wet season for Canal No.1 and (5) 1,500 ha of rice land for supplementary wet season for Chork Reservoir. On the basis of the foregoing, appropriate mitigating measures will be laid out; including the resources needed, to help ensure that AHs are not worse off and that project objective are achieved. Depending on the type and severity of the project impact, mitigating measures will be spelled out in the RP3 including engineering and non-cash measures, and payment of compensation at replacement cost and other assistances to the AHs consistent with ADB's Policy on Involuntary Resettlement.. The RP3 will include the budget for compensation and allowances; and the agriculture training programs for AHs in the reservoir, severely AHs in the command area under the Project Component 3 of NWISP.

## **1.3 LEAGAL FRAMEWORK AND POLICY**

### **1.3.1 Cambodian Laws and Regulation**

34. The **1993 Constitution of Cambodia** states that the “right to confiscate properties from any person shall be exercised only in the public interest as provided by law and shall require fair and just compensation in advance” (Article 44). Article 20 stipulates that “nobody shall be forced to transfer his or her ownership, if forcing is not necessary in the public interest and (if) no proper and just indemnity has been paid to the owner”.

35. The **Land Law of 2001** (NS/RKM/0801/14, August 2001) governs land and property rights in Cambodia. Based on the provisions of the 1993 Constitution, it determines the regime of ownership of immovable properties that are defined as including land, trees and immovable structures.

36. The rights and responsibilities of the RGC with respect to eminent domain are specified in the Land Law. The RGC can acquire private land (i) for public purposes under condition of (ii) fair and just compensation, (iii) paid in advance. The Land Law, Article 5, states:

*“No person may be deprived of his ownership, unless it is in the public interest. An ownership deprivation shall be carried out in accordance with the forms and procedures provided by law and regulations and after the payment of fair and just compensation in advance.”*

### **1.3.2 Government Resettlement Procedures**

37. The Land Law and other RGC regulations protect individual rights to ownership of land and to fair and just compensation when it is acquired for public purposes. Nonetheless, there are no laws or regulations regarding a) eminent domain or expropriation or b) valuation of assets to support the right to fair and just compensation. Moreover, there is no national policy for involuntary resettlement although a draft policy was submitted in 2002 to the Inter-

Ministerial Resettlement Committee (IRC) and, at present, further work is ongoing under an ADB-funded technical assistance project to prepare a sub-decree on resettlement policy and will be revised based on the expropriation law.

38. The Inter-Ministerial Resettlement Committee (IRC) was established in 1999. It is an adhoc body convened for specific projects under the chairmanship of the Ministry of Economy and Finance (MEF). The Resettlement Department (RD) within MEF acts as the secretariat for the IRC. The IRC is convened for specific projects, and is composed of members of the Ministry of Economy and Finance, the Ministry of Water Resource and Meteorology, the Ministry of Agriculture, Forestry and Fisheries (MAFF), and Ministry of Environment. Its role is to deal with all resettlement issues arising from development partner-funded projects requiring land acquisition and resettlement; this includes, among others, (i) determination of entitlements, (ii) approval of compensation rates, (iii) approval of the RP and (iv) provision of funds for compensation payments to APs for affected assets.

### **1.3.3 ADB Policies on Involuntary Resettlement**

39. The project resettlement policy provides an opportunity for people who are dispossessed or displaced by the project to derive benefits from the same, consistent with the loan agreement and ADB's social safeguards policies. The basic guiding principle of ADB's Policy on Involuntary Resettlement is that adverse social impacts in a project are avoided or minimized, resettlement mitigating measures are conceived and executed as development programs, and that AHs are given the opportunity to share in project benefits. The objective is to assist AHs restore or improve their production levels, income earning capacity, and living standards.

40. Moreover, customary and formal rights of AHs are recognized. The absence of formal legal title to land by some affected groups should not be a bar to compensation and that particular attention are paid to the needs of the poorest affected households, including those without legal title to assets, female-headed, the landless, headed by the elderly, and other vulnerable groups, such as ethnic minorities. Appropriate assistance will be provided to help them improve their status.

### **1.3.4 Principles of Resettlement**

41. The principles of resettlement and compensation that apply in the NWISP, Ta Saom, Kork Thnong, Don Aov, Canal No.1 and Chork Reservoir sub-project are as following:

- a. Acquisition of land and other assets, and resettlement of people will be minimized as much as possible.
- b. All AHs residing in, working, doing business, cultivating land, or having rights over resources within the project area as of the cut-off date are entitled to compensation for their lost assets, incomes, jobs and businesses at replacement cost. Those displaced by the project will be provided additional relocation assistance and offered support during the transition period. Displaced persons will also be provided with appropriate development assistance in order to improve or at least restore their incomes and living standards to pre-project levels. Lack of legal rights will not bar the AP from entitlement to such compensation for his/her lost assets (improvements including structures, houses, crops, trees, etc.), businesses and incomes, and rehabilitation measures.
- c. AHs will be entitled to full compensation for the entire affected assets at replacement cost, and in the case of loss of productive assets, incomes, jobs and employment, to additional development assistance that allows them to enhance or at least maintain their standard of living.

- d. AHs affected by partial impact on their assets i.e. partial loss of land or structures and the remaining assets remain viable for continued use, where the livelihood is not land-based, the compensation for the affected assets will be paid in cash.
- e. The compensation and rehabilitation measures to be provided are: (i) compensation at replacement cost for houses and other structures without depreciation or deductions for salvaged material; (ii) compensation at replacement cost for the loss of other fixed assets; (iii) compensation at the replacement cost of the affected land or the provision of replacement land of equal agricultural productivity, residential quality and business potential, as the case may be, at a location acceptable to the AHs; (iv) cash compensation at replacement cost for affected businesses, means of livelihood and incomes; (v) rent allowance and assistance in finding alternate rental accommodation to tenant AHs; (vi) transport allowance and dislocation assistance during transition; and (vii) income restoration program, which includes on-farm and off-farm income earning activities, provision of appropriate skills training, and access to credit facilities; (viii) special assistance and allowances for AHs belonging to vulnerable groups.
- f. Replacement agricultural land, premise/business plot will be as close as possible to the land that was lost and/or acceptable to the AHs. All replacement land for agriculture, residential and businesses will be provided with secure tenure status and without any additional cost, taxes, and surcharge to the AHs at the time of transfer.
- g. Plans for acquisition of land and other assets and provision of rehabilitation measures will be carried out in consultation with the AHs who will receive prior information of the compensation and rehabilitation options available to them.
- h. Where cultural minorities or indigenous peoples are affected, the social and economic benefits they receive would be in harmony with their cultural preferences and would be decided in consultation with affected communities.
- i. Particular attention shall be paid to the needs of the poorest affected people and vulnerable groups. This may include households headed by females, the elderly, or disabled, and other vulnerable groups, particularly indigenous peoples. Appropriate assistance must be provided to help them improve their socio-economic status.
- j. Any acquisition of, or restriction on access to resources owned or managed by AHs as a common property will be mitigated by arrangements ensuring access of those AHs to equivalent resources on a continuing basis.
- k. AHs whose land or assets are temporarily taken by the works under the project will be fully compensated for their net loss of income and damaged assets, the latter at replacement cost. Assets which are only temporarily affected or inoperable, will be compensated at 10% of the replacement cost of affected assets provided that such assets or properties are required by the project for a maximum of 3 months. In case the assets are required by the project for periods longer than three months, the amount of compensation should be negotiated with the owner of said property.
- l. The previous level of community services and access to resources will be maintained or improved after resettlement.
- m. Financial and physical resources for resettlement and rehabilitation will be made available as and when required.
- n. The RP will provide for a planned resettlement program and will include adequate institutional arrangements to ensure effective and timely design, planning,

consultation and implementation of compensation, resettlement and rehabilitation measures. Project authorities will ensure effective coordination with relevant agencies for implementation of resettlement.

- o. Adequate arrangements will be made for the effective supervision and monitoring of resettlement, both internally by the Government and externally by an independent organization to be hired for the purpose, to ensure compliance to the resettlement policy and help ensure that AHs are able to rehabilitate themselves as planned.

## **1.4 The Cut-off Date of the Subprojects**

42. The cut-off-dates for Ta Saom and Kork Thnong subprojects were on 15 July 2009, Don Aov and Canal No.1 subprojects were on 7 August 2009 and Chork Reservoir subproject was on 10 August 2009. The setting of the cut-off-date is the first date of public consultation meetings with Public Information Booklet (PIB) distribution to all AHs in each subproject.

## **1.5 Eligibility**

43. AHs include anyone who at the cut-off date of the subproject was located within the subproject area or any of its component or subproject or part thereof, and would have their:

- a. Standard of living adversely affected;
- b. Right, title or interest in any house, land (including residential, commercial, agricultural and grazing land), water resources, or any other movable or fixed assets acquired or possessed, in full or in part, temporarily or permanently by public sector acquisition; or
- c. Business, occupation, place of work or residence or habitat adversely affected by public sector intervention.

44. "AHs" refers to households and consists of all members residing under one roof and operating as a single economic unit, who are adversely affected by the subproject. For resettlement purposes, subproject affected persons will be considered as members of the subproject affected households.

# **2 PROJECT IMPACT**

## **2.1 Methodology**

### **2.1.1 Data Gathering Instrument(s) and Procedures**

45. Data collection to estimate land loss, affected structures and trees and other impact on AH and community in each subproject is mainly from Detail Measurement Survey (DMS) which is conducted by Inter-ministerial Resettlement Committee (IRC) working group in close coordination with PRSC working group and local authorities, using topographic alignment demarcation of canals, drainages and structures of each subproject from the service provider employed by MOWRAM. The service provider of the each subproject uses Total Station equipment to demarcate land take of canals, drainages and structures, then the working groups and the topographic group install concrete pole to mark out land acquisition for the subproject. The interview team will follow the topographic team to conduct socio-economic survey in order to find out more on magnitude of impact on each household such as vulnerable house hold, agricultural land ownership of each household, etc. The DMS documents are the contractual record of impact and losses agreed with AHs during the DMS, bearing the signature or thumb print of the household head and the village head. It will be used by the Provincial Department of Economy and Finance to delivery compensation to them.

46. In line with the DMS, socio-economic survey of 20% of AHs and a series of focus

group discussions (FGDs) of each subproject were conducted by MOWRAM-RU under supervision of NWISP resettlement specialist covering a study of social impact on communities, households and individuals. The respondent households of socio-economic survey were randomly selected to interview following the DMS household listing. All databases are used in Microsoft EXCEL. FGDs were conducted in four groups, about 60 persons representing affected villages.

### 2.1.2 Participation of the Public in the Survey

47. Members of the Commune Councils and village headmen took part in the DMS, the socio-economic survey of 20% of AHs, and the FGDs. All interviewed households, the inventory, and measurement of affected land and property were conducted with the assistance of the household heads and the village headmen.

### 2.1.3 Processing of Data

48. MOWRAM-RU processed the DMS data in Microsoft EXCEL software as tool to prepare the list of impact for preparing this RP3. This data is used to analysis for preparing the RP by resettlement local consultant. The socio-economic survey data of each subproject is entered in SPSS format and FGDs data is recorded in Excel format and the two software tools is applied to do analysis for this RP3 preparation. Since the natures of impact of all 5 subprojects are different, the entitlements and the impact database from the DMS are separated for each subproject.

## 3.2 RESULTS OF TA SAOM SUBPROJECT

### 3.2.1 Result of Detailed Measurement Survey

49. The Detail Measurement Survey (DMS) was conducted in July 2009 after public dissemination meeting in Seam Reap municipality and affected villages with AH and non-AH to explain about the project, its beneficiary, DMS process, entitlement, compensation, etc. The result of DMS showed that there are 87 households affected by the subproject with affected assets of (1) agricultural, pond and residential lands and (2) trees. Of the 87 AHs, 21 AHs are falling into vulnerable groups. The detailed impact is shown below and summarizes in **Table 3-2-5**: a Matrix of Entitlements for Ta Saom Subproject.

#### Impact on Agricultural and Residential Land

50. According to the DMS, a total of 27,385.01m<sup>2</sup> of rice land belonging to 87 AHs, 100 m<sup>2</sup> pond land belonging to 1 AH and 372.37m<sup>2</sup> of residential land belonging to 4 AHs have to be acquired for the subproject construction. Of 84 AHs, losing agricultural land, 2 AHs are severe impact due to the percentage of the loss is more than 10% of their total productive holding land.

**Table 3-2-1: Impact on Agricultural and Residential Land in Ta Saom**

Commune Name	Ta Soam		TOTAL
Village Name	Kork Thmey	Kork Chan	
AHs	32	55	87
Affected People	160	287	447
<b>Areas of Affected Land (m<sup>2</sup>)</b>			
Rice Land	11,897.15	15,487.86	27,385.01
Pond Land	100.00	-	100.00
Residential Land	372.37	-	372.37
<b>Total Land Area</b>	<b>12,369.52</b>	<b>15,487.86</b>	<b>27,857.38</b>

51. The affected residential land is only in Kork Thmei village and it affected by Secondary Canal 2 in Western Kork Thmei. Affected pond is also located in one of the four plots of affected residential lands. It is used to contain water for inhouse use and for watering vegetable and fruit trees of owner. However, the water from Secondary Canal 2 can play the role the affected pond as affected pond owner can take the water from the Canal in replace of the losing pond.

### Impact on Trees:

52. In total, the construction of the structures, canals and Embankment/Road affect on 36 trees belonging to 15 AHs in two villages, Kork Thmei and Kork Chan and most of the affect trees are situated along the Secondary Canal 2. Of the 36 trees, there are 6 categories of trees such as mango, sugar palm, coconut, bamboo, tamarind and other non-fruit trees (**Tab. 3-2-2**).

53. Sugar palm is the dominant affected tree, 25 trees, of the subproject and is not an important tree in the affected villages, since sugar production from palm juice is no long produced in the villages due to lack of fire wood as raw material and labor<sup>1</sup>. The essential productive trees of the villagers in the subproject such as mango, coconut, bamboo and tamarind which can contributes to their family livelihood, have minor impact by the subproject.

**Table 3-2-2: Loss of Trees in Ta Saom**

Commune Name	Ta Soam		TOTAL
Village Name	Kork Thmey	Kork Chan	
AHs	8	-	<b>8</b>
Total Affected Trees	36	-	<b>36</b>
Name and Number of Affected Trees			
Mango	1	-	<b>1</b>
Sugar palm	25	-	<b>25</b>
Coconut	2	-	<b>2</b>
Bamboo	3	-	<b>3</b>
Tamarind	1	-	<b>1</b>
Others	4	-	<b>4</b>

### Impact on Vulnerable Groups:

54. According to DMS data, a total of 21 vulnerable AHs have been identified from the total of 27 vulnerable group incidences of the subproject. They are ranked as vulnerable for at least one of the following reasons: they are woman-headed, aged-headed, disabled-headed, and/or with a monthly household income below the national poverty line (\$14/month). Many of the AHs are ranked as vulnerable for more than one of the above reasons, in this case we have listed them in the figures shown in **Table 3-2-3** below. Aged-headed and woman-headed AHs are high percentage of about 85% of the total vulnerable household incidences.

<sup>1</sup> From consultation with those local people, the sugar palm is a labor intensive product.

55. Each vulnerable AHs will receive an allowance of \$150<sup>2</sup> per household. The allowance is to reduce their impoverishment risks and assist them to mitigate their vulnerability and get advantage of the project benefits.

**Table 3-2-3: Impact on Vulnerable Groups in Ta Saom**

Commune Name	Ta Soam		Total Incidence of Vulnerable Group
Village Name	Kork Thmey	Kork Chan	
Affected Vulnerable Groups			
Woman-headed AH	4	7	11
Aged-headed AH	6	6	12
Disabled-headed AH	2	-	2
Income below US\$14/mth	2	-	2
Total Incidence of Vulnerable Group	14	13	27
Total Vulnerable AH	10	11	21

**Summary of Impact on Affected Households:**

56. Table 3-2-4 below provides a summary of impact for the Ta Saom subproject.

**Table 3-2-4: Summary of Project Impact in Ta Saom**

No.	Type of Impact	Unit	AH Incidence	Total Quantity	Remark
<b>I</b>	<b>Land</b>				
1	Rice land	m <sup>2</sup>	87	27,385.01	
2	Residential land	m <sup>2</sup>	4	372.37	
3	Pond land	m <sup>2</sup>	1	100	
4	Loss more 10% of productive land	AH	2	2	
<b>II</b>	<b>Tree</b>				
1	Mango	tree	1	1	
2	Sugar palm	tree	7	25	
3	Coconut	tree	1	2	
4	Bamboo	thicket	2	3	
5	Tamarind	tree	1	1	
6	Others	tree	3	4	
<b>III</b>	<b>Vulnerable Group</b>				
1	Vulnerable Group	AH	21	21	

**3.2.2 Basics of Unit Cost Used in Calculating Compensation for this Subproject**

57. The replacement cost for residential land, productive agricultural land, trees and structures is calculated based on the price in neighboring regions and local markets in Ta Saom subproject area. This price survey responding to the agreed policy on compensation rates between the government and ADB. Based on this policy, an independent local

<sup>2</sup> This equals to 20kg of rice per person per month for 6 months. For average of 5 members in a family, it comes out with \$150/AH.



consultant was engaged by IRC to conduct a replacement cost study in the affected area to establish the compensation rates for affected assets.

58. The survey was conducted in September 2009 with existing owners of land and tree, 30 AHs and 30 non-AHs, in 3 FGD meetings, with 2 village leaders and 3 vegetable vendors. This allowed a comprehensive study of land prices (residential, rice and Chamkar land), and tree prices, labor cost, and house and other structure valuation surrounding Ta Saom area. The discussion below focuses on compensation rates for the relevant affected properties. The detailed compensation rates for affected assets are shown in **Appendix 6** of this RP3.

### 3.2.3 Detailed Compensation and Entitlements

59. The implementation of Ta Saom subproject will result in the acquisition of lands, trees, and structures as described in Section 3.2. AHs will be compensated according to the resettlement policy and principles set out in Chapter 2 of this RP3. This section outlines the compensation and entitlements for each category of AHs. The compensation and other entitlements are summarized in **Table 3-2-5**.

**Table 3-2-5: Entitlement Matrix of Ta Saom**

No.	Type of Impact	Application	Entitled Person	Entitlements
1.	Residential Land 4 AH	4 residential plots	Owner or person with customary usage rights	For the <b>portion</b> of the affected land: +Cash compensation at replacement cost; +AH will be given sufficient time to harvest crops and 15 days to deconstruct structures on their subjected property, if any; <b>+If falling in one of the categories of vulnerability</b> , cash assistance of \$150 for each AH without repeating.
2.	Pond Land 1 AH	1 affected Pond	Owner or person with customary usage rights	No compensation required because secondary canal 2 of the subproject will be a new source of water to be used by AH.
3.	Farmland 87 AHs	Marginal impact 85 AHs	Owners <b>with</b> acceptable (recognized) proof of ownership	For the <b>portion</b> of the land needed: +Cash compensation is at replacement cost; +Cash compensation for affected tree at replacement cost; and +AH will be given sufficient time to harvest crops on their subjected property <b>+If falling in one of the categories of vulnerability</b> , cash assistance of \$150 for each AH without repeating.
			AHs <b>without</b> acceptable proof of ownership, including lessees	Not applicable
		Severe impact 2 AHs	Owners <b>with</b> acceptable (recognized) proof of ownership	+Cash compensation at replacement cost for the entire land losses, or land-to-land with secure tenure; +AH will be given sufficient time to harvest crops on their subjected property <b>+Allowance and income restoration:</b> (i) cash assistance of \$150; (ii) the income restoration to be provided by the Project component 3; <b>+If falling in one of the categories of vulnerability</b> , Cash assistance of \$150 for each AH without repeating.

			AHs <b>without</b> acceptable proof of ownership, including lessees	Not applicable
4.	Trees AHs	8	All types 36 trees	Owner or person with customary usage rights  + Annual Crops: AHs will be given two (2) months notice that the land on which their crops are planted will be damaged or used by the subproject and that they must harvest their crops before land acquisition for the subproject; + Cash compensation for loss of crops based on an annual produce replacement cost; + Perennial Crops and Trees: AHs will be compensated for the loss of fruit and timber trees at replacement cost. The value will be calculated as the annual produce value multiplied by a 1 to 8 years factor, depending type of tree to yield.

### 3.2.4 Socio-Economic Profile

#### Demography:

60. The average household size is 5.4 per household. The DMS data indicates that only about 10% of household heads are below 30 years old. However, 41% of households have more than 5 people in the household because of extended family typically including aging parents and/or one or two adult children's spouses and children.

61. There are 51% women, slightly more than men. Almost 13% of affected households are headed by women. This indicates a low rate of separation or divorce. 35% of the total population is below 20 years old, thus indicating there will be a good labor supply for their families, communities, and surrounding regions.

#### Poverty:

62. The measurement of household income and expenditure, housing type, assets, agricultural land possession size, number and type of livestock, and their declaration of food shortages indicate the incidence of poverty is about 54% in the sample population (based on \$1.25/person/day), and of this 4.5% are considered extremely poor, i.e., have income lower than \$14/person/month, inadequate shelter, insufficient land, food deficit for 5 months per year or more, and have insufficient income to purchase medicines and clothes. 80% of Women-headed households have income less than \$1.25/person/day and since they experience inadequate labor for agriculture or for other income generation.

63. The data also indicate 40% of the affected households encounter health issues in their family, which is one of the major factors influencing the family financial crisis. The survey also indicates that 15% of households face food shortage.

#### Landholding:

64. The majority of affected lands in the subproject are located in Kork Chan and Kork Thmey villages (reservoir and command area). On average, AHs hold 2.11 ha of land per household, but there is a wide variance among the households. The most frequently cited reason for poverty was insufficient land for farming and a large family to support. About 10% of AHs possess land smaller than 1 ha and 29% own land more than 2 ha. 61% have farm land about 1-2hectares.

#### Education:

65. There are different education levels of people in the affected communities. Although almost 100% of the heads of AHs participated in primarily school, about 20% are illiterate.

Socio-economic survey indicates that 89.54% of children in the 6 to 12 year age range have studied in primary school, and 45.56% of children in the 13 to 18 year age range have entered junior high school. Only 20.78% studied in high school.

66. Average distance from home to primary school in Ta Saom sub-project is approximately 3km, which take about 50 minute for children to walk. However, some children in some villages have to walk 5km to primary school, which generally takes them more than an hour to walk.

#### **Health:**

67. Health is one of the main concerns of AHs. According to the survey, 54% of AHs households encounter health issues in their family, of which about 46% mentioned that their health issues are medium and serious for their families as well as unaffordable. AHs in this subproject usually have to travel more than 28 km to Pourk district hospital.

#### **Situation of Women:**

68. The socio-economic survey indicates that 51% of APs are women and 81% of adult women are working as rice farmer and the other 19% are working in non agriculture sector. The women are also responsible for taking care of children, house work and other work around their houses such as planting vegetable, raising livestock, etc. The survey also found that young women are also go to work on non-agricultural sector outside the province, particularly, garment factory worker. For men, only about 27% of adult men are working in non-agricultural sector. That is because of culture, physical and security advantage of man.

#### **Support for the Project:**

69. According to the socio-economic survey, 100% of AHs thinks that the project will benefit them. 69% expect that the project will provide additional water for wet season cropping, while 23% expect additional water for dry season crops. 54% of AHs believe that the project will increase the fish population - and become a major source of protein for the community, and 23% consider the project will provide other benefits. There is also a perception that the Project will lead to other supporting activities from NGOs such agricultural and livestock production skill training with their application providing significant production improvements.

#### **Attitudes of AHs:**

70. Base on the 20% sample in the socio-economic survey, about 100% of AHs prefers cash rather than land-for-land compensation. If the government provides land-for-land, the land should be located near their old land or 0.2 to 1 km from the irrigation network and within 0.5 km from the main road. The compensation land should be suitable for residential settlement for APs who lost residential land.

### **3.2.5 Public Participation and Consultation**

#### **Informing AHs:**

71. A Subproject Steering Committee meeting was held on 13 July 2009 at the conference hall of Seam Reap province chaired by Chairman of Provincial Resettlement Subcommittee (RRS) and governor of Seam Reap with participation from representatives of Resettlement Department of MEF, Resettlement Unit of MOWRAM, IRC Provincial Working Group and affected commune chiefs. The meeting focused on launching the DMS in Ta Saom and Kork Thnong subprojects and discussing on the (i) resettlement policy, (ii) public consultations with AHs, and (iii) background of the land usage in the Ta Saom.

72. Before DMS, on 15 July 2009, the IRC and PRS working group conducted a public consultations meeting with potential AHs. The each meeting explains (i) supporting and implementing agencies and agencies charging for DMS, preparing RP, monitoring RP and grievance redress, (ii) benefits of the subproject, (iii) resettlement issues and procedure, (iv) compensation and entitlement, (v) people participation in project, (vi) necessary document for DMS and (vii) open forum for discussion.

73. After the each meeting, Public Information Booklets were distributed to the participants in order to disseminating information on Involuntary Resettlement Policy of ADB, subproject benefits, participation with the project and other relevant information. AH who didn't attend the meeting, would get the Booklets during DMS survey.

### **Focus Group Discussion with AHs:**

74. A Focus Group Discussions with AHs were conducted from 24-25 August 2009 to investigate the impact of the subproject, socio-economic condition, village profile, training need assessment for livelihood restoration, and concern of AHs. The schedule of the meetings is in Table 3-2-6. The content of the discussions during the FGDs are summarized below, and the details for each meeting are provided.

**Table 3-2-6: Record of Focus Group Discussion in Ta Saom**

<b>Tuesday, 25 August 2009</b>	<b>Monday, 24 August 2009</b>
Time: 9:00 a.m Venue: Village chief's house of Kork Thmei Participation: Mixed Group from Kork Thmei village	Time: 10:00 a.m Venue: Commune center Participation: Mixed Group from Ta Saom village
Time: 14:00 p.m Venue: Village chief's house of Kork Chan Participation: Mixed Group from Kork Chan village	

75. The main occupations of AHs in the subproject are (i) rice farmer, (ii) migrant worker in Thailand, (iii) doing small business in community, (iv) livestock and cattle farming, (v) vegetable farming (vi) fishing, (vii) transportation worker, (viii) running small TV, phone, motorbike and bike cycle repairing-shop, and (ix) skill worker such as carpenter, artisan etc.

76. Increasing family income from rice farming, migrant working, serving as skill-workers and doing small business in the last five years make AHs living condition better. However, boarder dispute between Cambodia and Thailand, and economic downturn is reducing AH income. Moreover, rehabilitation of commune road and bridge, construction of school building, health center, community drainage, well and toilet also make a major impact on AH living condition. Nevertheless, present of NGOs and micro-credit agencies in region give AHs a good opportunity to get support and access to low interest loan for them to do small business and solve family health issue and housing and agriculture investment.

77. The many AHs are living under national poverty line in the subproject area, and some of them are very poor. The essential reasons of the poverty are because (i) a member of their families falls sick and their family saving is entirely used for health issues, (ii) they don't have land for farming and no job, (iii) they are in debt because of family health, agriculture investment, particularly fertilizer investment and household expenditure, (iv) they have small farm land and large family member, but jobless, (iv) household head are vulnerable person, and (v) agriculture crop are damaged by drought, flood or insect or have very little yield due to lack of input.

78. Problems in agriculture mostly are: (i) lack of irrigation system for rice cultivation in wet and dry season, (ii) fertilizer and insecticide are expensive and unaffordable so some AHs are in debt to fertilizer and insecticide shop with high interest rate, (iii) lack of quality rice seed for cultivation, (iv) lack of agricultural technique, (v) agriculture market are depend on middleman

and not stable, (vi) rate and insect destroy rice and (vii) experience flood and drought some time.

79. Small livestock and cattle is also another source of income, protein food, agricultural labor and organic fertilizer source for AHs. Currently, the AHs have experience hardship in raising livestock. The reasons are lack of fodder, particularly cattle since common grassland field was converted to private farm land, high animal food price, no veterinary in the region and low profit because of low selling price. The mood to raise cattle is decreasing as many farmers turn to using hand tractor for farming which are faster, do not need feeding, and can be used to transport agriculture products and to rent to neighborhood farmer.

80. With the project, the groups expect that the project will allow them to double crop (dry and wet season), have water for growing vegetable around their houses, and have more fish for in irrigations scheme.

81. The groups prefer land to cash compensation for who have small affected land and land to land compensation for who have large affected land or landless because they think of difficulty to purchase land and keep compensation money. If they use compensation money to buy land, their prefer location is within few kilometers from village. Most of participants of the meetings plan to use the money to invest in business, agriculture equipment and household demands.

82. Beside compensation, the groups address the need for more support from the project such as training on various suitable agricultural skills and off-farm training such as skill to repair machine, particularly hand tractor, pumping machine and motorbike and beauty make-up skills as well as hair cut. For vulnerable group, the aged-headed household needs health care support, the woman-headed household request to support their agricultural labor and provide credit for agriculture input, the disable headed household and poor household need credit for business investment. All of them request that the government help to find market for their agriculture product so that they can sell in better price.

### 3.2.6 Implementation Schedule

83. Table 3-2-8 below provides a proposed implement schedule for the Ta Saom subproject.

**Table 3-2-7: Implementation Schedule for RP of Ta Saom**

Activity	2009	2010											
	Q4	Q1			Q2			Q3			Q4		
Approval of RP by IRC & ADB	X												
Notice to Proceed with implementation	X												
Final disclosure/concurrence of AHs	X												
Vouchering	X												
Delivery of compensation /entitlements	X												
Agriculture training activities*		X	X	X	X	X	X	X	X	X	X	X	
Internal & external monitoring	X	X	X	X	X	X	X	X	X	X			
External Monitoring	X	X			X			X			X		
Submit compliance both internal and external monitoring report	X	X	X	X	X	X	X	X	X	X			
Evaluate RP implementation											X	X	X
Additional resettlement measures											X	X	X
Submission of RP Completion report										X			
Approval of RP Completion report											X		

\* : the activities are to train AHs in the agriculture extension in component 3 of the NWISP.

### 3.2.7 Costs and Budget

#### Procedures for Flow of Funds

84. The IRC will request the Ministry of Economic and Finance (MEF) for funding the implementation of the RP3. The funds will be forwarded to the Provincial Departments of Economy and Finance. Payment vouchers will be prepared at the Provincial Department of Economy and Finance with coordination from IRC-WG and PRSC-WG. Payment of compensation and other entitlements as described in Chapter 3 of the RP3 will be given in cash and will be distributed to AHs at village offices. The AHs will be notified through the village chiefs of the schedule of payment of compensation and other entitlements.

#### Compensation and Contingency Costs

85. The cost estimates for the implementation of the RP3 also include a provision for contingencies equivalent to 15% of the base cost of resettlement. MOWRAM and IRC will ensure that adequate funds are made available as and when necessary for the efficient and timely implementation of the resettlement activities.

#### Estimate of Resettlement Costs

86. The overall estimated costs excluding administration costs are shown in Table 3-2-8 below.

**Table 3-2-8: Estimated Costs for Implementation of the RP of Ta Saom**

	Compensation Items	Unit	Rate \$	Qty	Cost US\$
<b>I</b>	<b>Compensation for Land</b>				
1	Rice Land	m <sup>2</sup>	0.23	27,385.01	6,298.55
2	Residential	m <sup>2</sup>	0.8	372.37	297.90
	<b>Sub-Total (1)</b>				<b>6,596.45</b>
<b>II</b>	<b>Compensation for Tree</b>				
1	Mango	Tree	30.25	1	30.25
2	Sugar Palm	Tree	25	25	625.00
3	Coconut	Tree	33.25	2	66.50
4	Bamboo	Thicket	10	3	30.00
5	Tamarind	Tree	27	1	27.00
6	Others	Tree	5	4	20.00
	<b>Sub-Total (2)</b>			<b>36</b>	<b>798.75</b>
<b>III</b>	<b>Allowance and assistance</b>				
1	Vulnerable Group AH allowance	AH	150	21	3,150.00
2	Ahs of loss > 10% of their productive land	AH	150	2	300.00
	<b>Sub-Total (3)</b>				<b>3,450.00</b>
<b>IV</b>	<b>Total Base Cost</b>				<b>10,845.20</b>
	<b>Contingency (15%)</b>				<b>1,626.78</b>
	<b>Grand Total</b>				<b>12,471.98</b>

### 3.3 RESULTS OF KORK THNONG SUBPROJECT

#### 3.3.1 Results of the Detailed Measurement Survey

87. The Detail Measurement Survey (DMS) was conducted in July 2009 after public dissemination meeting at Seam Reap municipality and a meeting between affected villages and AHs and non-AHs. The meetings were to explain about the project, its beneficiary, DMS process, entitlements, compensation, etc to village leaders and AHs. The result of DMS showed that there are 50 AHs affected by the subproject with affected assets of land, trees, and vulnerable groups. Of the 50 AHs, there are 15 vulnerable AHs and no landless AH due to small portion of their land is acquired by the subproject. The detailed impact is shown below and summarized in **Table 3-3-5**: a Matrix of Entitlements for Kork Thnong Subproject.

#### Impact on Agricultural and Residential Land:

88. According to the DMS, a total of 38,053.20m<sup>2</sup> of rice land belonging to 50 AHs, 1,718.00m<sup>2</sup> of Chamkar land occupied by 1 AH and 409.08m<sup>2</sup> of residential land of 4 AHs have to be acquired for the subproject construction. Moreover, of the 50 AHs (50 AHs of rice land and 1 AH of Chamkar land), 2 AHs are severely affected owing to their loss of productive land is more than 10% of their total holding productive land.

89. The Kortrakeat village has largest impact compared to other villages, where 22 AHs occupied 23,136.67m<sup>2</sup> of their rice land and 374.08m<sup>2</sup> of Chamkar land will be acquired for the subproject, while Kork Thnong village has 22 AHs with 11,877.20m<sup>2</sup> of their rice land, 1,718.00m<sup>2</sup> of Chamkar land and 35.00m<sup>2</sup> of residential land will be affected by the subproject, followed by Prey Cheng village has 3 AHs with affected rice land of 3,039.33m<sup>2</sup> (**Tab. 3-3-1**).

**Table 3-3-1: Impact on Agricultural and Residential Land in Kork Thnong**

Commune Name	Cha Chhouk			TOTAL
Village Name	Kortrakeat	Kork Thnong	Prey Cheng	
AHs	24	23	3	<b>50</b>
Affected People	119	130	12	<b>261</b>
Areas of Affected Land (m <sup>2</sup> )				
Rice Land	23,136.67	11,877.20	3,039.33	<b>38,053.20</b>
Chamkar Land	-	1,718.00	-	<b>1,718.00</b>
Residential Land	374.08	35.00	-	<b>409.08</b>
<b>Total Land Area</b>	<b>23,510.75</b>	<b>13,595.20</b>	<b>3,074.33</b>	<b>40,180.28</b>

90. The DMS data also reports that the construction of Secondary Canal will affect 1 lot of affected Chamkar land which is located in undeveloped land next and behind the residential lot of the AH and is used for planting vegetables and fruit trees and could be used for subdividing to residential lot in the future for their children.

#### Impact on Trees:

91. In total, the construction of the structures, canals and dam will affect 192 trees belonging to 20 AHs in 3 villages (**Tab. 3-3-2**). Most of the affected trees, 132 trees are situated in Kork Thnong village. Of 192 trees, there are 8 categories of tree such as sugar palm, coconut, guava, bamboo, custard apple, tamarind, Krasing and other non-fruit trees.

92. Sugar palm, bamboo and other non-fruit trees are the dominant affected trees of the

subproject. But the essential productive trees of the villagers in the subproject are coconut, bamboo and tamarind because it can contribute to their family income. Sugar palm is not an important tree in the affected villages, since sugar production from palm juice is no longer produced in the villages. One of the main reasons is lack of firewood as raw material for sugar production. Second is production of the sugar from palm needs labor-intensive.

**Table 3-3-2: Loss of Trees in Kork Thnong**

Commune Name	Cha Chhouk			TOTAL
Village Name	Kortlakeat	Kork Thnong	Prey Cheng	
AHs	9	9	2	<b>20</b>
Total Affected Trees	58	132	2	<b>192</b>
Name and Number of Affected Trees				
Sugar palm	34	101	-	<b>135</b>
Coconut	-	4	-	<b>4</b>
Guava	2	1	-	<b>3</b>
Bamboo	2	12	1	<b>15</b>
Custard apple	1	-	-	<b>1</b>
Tamarind	-	3	-	<b>3</b>
Kraseing	1	1	1	<b>3</b>
Others	18	10	-	<b>28</b>

#### Impact on Vulnerable Groups:

93. According to DMS data, a total of 15 vulnerable AHs have been identified from the total of 21 vulnerable group incidences of the subproject. They are ranked as vulnerable for at least one of the following reasons: they are woman-headed, aged-headed, disabled-headed, and/or with a monthly household income below the national poverty line (\$14/month). Many of the AHs are ranked as vulnerable for more than one of the above reasons, in this case we have listed them in the figures shown in **Table 3-3-3** below. Aged-headed and woman-headed AHs are covered about 90% of the total vulnerable household incidences.

94. In total, the subproject will impact on 15 vulnerable AHs, although there is a total of 21 incidences of vulnerability. The vulnerable AHs will receive an allowance of \$150 per household regardless of one or more incidences of vulnerability they are falling to. The allowance is to reduce their impoverishment risks and assist them to mitigate their vulnerability and get advantage of the project benefits.

**Table 3-3-3: Impact on Vulnerable Groups in Kork Thnong**

Commune Name	Cha Chhouk			Total Incidence of Vulnerable Group
Village Name	Kortrakeat	Kork Thnong	Prey Cheng	
Affected Vulnerable Groups				
Woman-headed AH	5	1	2	8
Aged-headed AH	4	5	2	11
Disabled-headed AH	-	1	-	1



Income below US\$14/mth	1	-	-	1
Total Incidence of Vulnerable Group	10	7	4	21
<b>Total Vulnerable AH</b>	<b>6</b>	<b>7</b>	<b>2</b>	<b>15</b>

### Summary of Impact on Affected Households:

95. Table 3-3-4 below provides a summary of impact for the Kork Thnong subproject.

**Table 3-3-4: Summary of Project Impact in Kork Thnong**

No.	Type of Impact	Unit	AH Incidence	Total Quantity	Remark
<b>I</b>	<b>Land</b>				
1	Rice land	m <sup>2</sup>	47	38,053.20	
2	Chamkar land	m <sup>2</sup>	1	1,718.00	
3	Residential	m <sup>2</sup>	4	409.08	
4	Loss more 10% of productive land	AH	2	2	
<b>II</b>	<b>Tree</b>				
1	Sugar palm	tree	12	135	
2	Coconut	tree	1	4	
3	Guava	tree	3	3	
4	Bamboo	thicket	8	15	
5	Custard apple	tree	1	1	
6	Tamarind	tree	2	3	
7	Kraseing	tree	3	3	
8	Others	tree	12	28	
<b>III</b>	<b>Vulnerable Group</b>				
1	Vulnerable Group	AH	15	15	

### 3.3.2 Basics of Unit Cost Used in Calculating Compensation

96. The replacement cost for residential land, productive agricultural land, trees and structures is calculated based on the price in neighboring regions and local markets in Kork Thnong subproject area. This price survey responding to the agreed policy on compensation rates between the government and ADB. Based on this policy, an independent local consultant was engaged by IRC to conduct a replacement cost study in the affected area to establish the compensation rates for affected assets.

97. The survey was conducted in September 2009 with existing owners of land and tree, 30 AHs and 30 non-AHs, in 2 FGDs meetings, with 2 village leaders, 3 carpenters groups, 3 vegetable vendors and 3 construction material shop-owners. This allowed a comprehensive study of land prices (residential, rice and Chamkar land), and tree prices, labor cost, and house and other structure valuation surrounding Kork Thnong region. The discussion below focuses on compensation rates for the relevant affected properties. The detailed compensation rates for affected assets are shown in **Appendix 6** of this RP3.

### 3.3.3 Detailed Compensation and Other Entitlements

98. The implementation of Kork Thnong subproject will result in the acquisition of lands, trees, and structures as described in Section 3-3. AHs will be compensated according to the resettlement policy and principles set out in Chapter 2 of this RP3. **Table 3-3-5** depicts the compensation and entitlements for each category of AHs.

**Table 3-3-5: Entitlement Matrix of Kork Thnong**

No.	Type of Impact	Application	Entitled Person	Entitlements
1.	Residential Land 4 AHs	4 affected residential plots	Owner or person with customary usage rights	For the <b>portion</b> of the affected land: +Cash compensation for land at replacement cost; +Compensation for affected structures or trees at replacement cost; +AH will be given sufficient time to harvest crops and 15 days to deconstruct structures on their subjected property; <b>+If falling in one of the categories of vulnerability,</b> cash assistance of \$150 for each AH without repeating.
2.	Chamkar Land 1 AH	1 affected Chamkar plot	Owner or person with customary usage rights	For the <b>portion</b> of the land needed: +Cash compensation for land at replacement cost; +Compensation for affected trees at replacement cost; +AH will be given sufficient time to harvest crops and 15 days to deconstruct structures on their subjected property; <b>+If falling in one of the categories of vulnerability,</b> cash assistance of \$150 for each AH without repeating.
3.	Farmland 47 AHs	Marginal impact 45 AHs	Owners <b>with</b> acceptable (recognized) proof of ownership	For the <b>portion</b> of the land needed: +Cash compensation is at replacement cost; +Cash compensation for affected tree at replacement cost; and +AH will be given sufficient time to harvest crops on their subjected property <b>+If falling in one of the categories of vulnerability,</b> cash assistance of \$150 for each AH without repeating.
			AHs <b>without</b> acceptable proof of ownership, including lessees	Not applicable
		Severe impact 2 AHs	Owners <b>with</b> acceptable (recognized) proof of ownership	+Cash compensation at replacement cost for the entire land losses, or land-to-land with secure tenure; +AH will be given sufficient time to harvest crops on their subjected property <b>+Allowance and income restoration:</b> (i) cash assistance of \$150; (ii) the income restoration to be provided by the Project component 3; <b>+If falling in one of the categories of vulnerability,</b> Cash assistance of \$150 for each AH without repeating.
			AHs without acceptable proof of ownership, including lessees Nil	Not applicable
4.	Trees 20 AHs	All types 192 trees	Owner or person with customary usage rights	+ Annual Crops: AHs will be given two (2) months notice that the land on which their crops are planted will be damaged or used by the subproject and that they must harvest their crops in time; + Cash compensation for loss of crops based on an annual produce replacement cost; + Perennial Crops and Trees: AHs will be compensated for the loss of fruit and timber trees at replacement cost. The value will be calculated as the annual produce value multiplied by a 1 to 8 years factor, depending type of tree to get yields.

### 3.3.4 Socio-Economic Profile

#### Demography:

99. The average household size is 5.2 per household. The DMS data indicates that 16% of household heads are below 30 years old. However, 24% of households have more than 6 people in the household because of extended family typically including aging parents and/or one or two adult children's spouses and children.

100. There are 53% women, slightly more than men. About 16% of affected households are headed by women, and of these, 100% are above 45 years old. This indicates a medium

rate of separation or divorce. 38% of the total population is below 20 years old, thus indicating there will be a good labor supply for their families, communities, and surrounding regions.

#### **Poverty:**

101. The measurement of household income and expenditure, housing type, assets, agricultural land possession size, number and type of livestock, and their declaration of food shortages indicate the incidence of poverty is about 57% in the sample population (based on \$1.25/person/day), and of this 2% are considered extremely poor, i.e., have income lower than \$14/person/month, inadequate shelter, insufficient land, food deficit for 3-5 months per year or more, and have insufficient income to purchase medicines and clothes. About 65% of Women-headed households have income less than \$1.25/person/day and since they experience inadequate labor for agriculture or for other income generation.

102. The data also indicate 64% of the affected households encounter health issues in their family, which is one of the major factors influencing the family financial crisis. The survey also indicates that 28% of households face food shortage.

#### **Landholding:**

103. The majority of affected lands in the subproject are located in the village of Kortrakeat and Kork Thnong. On average, AHs hold average number of land plot of 3 places with average land area of 2.6 ha of land per household, but there is a wide variance among the households. The most frequently cited reason for poverty was insufficient land for farming and a large family to support. About 8% of AHs possess land smaller than 1 ha and another 50% own land more than 2 ha.

#### **Education:**

104. There are different education levels of people in the affected communities. About 90% of the heads of AHs attended primary school and about 10% are illiterate. Socio-economic survey indicates that 95% of children in the 6 to 12 year age range are studying in primary school, and 35.8% of children in the 13 to 18 year age range have entered junior high school. Only 15.5% studied in high school.

105. Average distance from home to primary school in Kork Thnong sub-project is approximately 2km, and take about 30 minute for children to walk to school.

#### **Health:**

106. Health is one of the main concerns of AHs. According to the survey, 64% of AHs households encounter health issues in their family, of which about 29% mentioned that their health issues are medium and serious for their families as well as unaffordable. On average villagers have to travel more than 36 km to Pourk district hospital.

#### **Situation of Women:**

107. The socio-economic survey indicates that 53% of APs are women and 75% of adult women are working as rice farmer and the other 25% are working in non agriculture sector. The women are also responsible for taking care of children, house work and other work around their houses such as planting vegetable, raising livestock, etc. The survey also found that young women are to work on non-agricultural sector, particularly, garment factory worker. For men, only about 28% of adult men are working in non-agricultural sector. That is because of culture, physical and security advantage of man.

### **Support for the Project:**

108. According to the socio-economic survey, 99% of AHs thinks that the project will benefit them. 64% expect that the project will provide additional water for wet season cropping, while 29% expect additional water for dry season crops. 64% of AHs believe that the project will increase the fish population - and become a major source of protein for the community, and 28% consider the project will provide other benefits. There is also a perception that the Project will lead to other supporting activities from NGOs such agricultural and livestock production skill training with their application providing significant production improvements.

### **Attitudes of AHs:**

109. Base on the 20% sample in the socio-economic survey, about 99% of AHs prefers cash rather than land-for-land compensation as most of them said the land they losses due to construction purposes is small and no one will sell that size of land. Only few families prefer land-for-land with distance to the new land plots 0.5 to 1 km from the villages, easy access (0.2 to 0.5 km) from the irrigation network and not more than 0.5 km from the main road. The compensation land must be suitable for residential settlement for APs who lost residential land.

## **3.3.5 Public Participation and Consultation**

### **Informing AHs:**

110. A Subproject Steering Committee meeting was held on 13 July 2009 at the conference hall of Seam Reap province chaired by Chairman of Provincial Resettlement Subcommittee (RRS) and governor of Seam Reap with participation from representatives of Resettlement Department of MEF, Resettlement Unit of MOWRAM, IRC Provincial Working Group and affected commune chiefs. The meeting focused on launching the DMS in Ta Saom and Kork Thnong subprojects and discussing on the (i) resettlement policy, (ii) public consultations with AHs, and (iii) background of the land usage in the four subprojects of Pursat.

111. Before DMS, on 15 July 2009, the IRC and PRS working group conducted a public consultations meeting with potential AHs. The each meeting explains (i) supporting and implementing agencies and agencies charging for DMS, preparing RP, monitoring RP and grievance redress, (ii) benefits of the subproject, (iii) resettlement issues and procedure, (iv) compensation and entitlement, (v) people participation in project, (vi) necessary document for DMS and (vii) open forum for discussion.

112. After the each meeting, Public Information Booklets were distributed to the participants in order to disseminating information on Involuntary Resettlement Policy of ADB, subproject benefits, participation with the project and other relevant information. AH who didn't attend the meeting, would get the Booklets during DMS survey.

### **Focus Group Discussion with AHs:**

113. A Focus Group Discussions with AHs were conducted on 26 August 2009 to investigate the impact of the subproject, socio-economic condition, village profile, training need assessment for livelihood restoration, and concern of AHs. The content of the discussions during the FGDs are summarized below, and the details for each meeting are provided.114. The main occupations of AHs in the subproject are (i) rice farmer, (ii) migrant worker in Thailand, (iii) doing small business in community, (iv) livestock and cattle farming, (v) vegetable farming (vi) fishing, (vii) transportation worker, (viii) running small TV, phone, motorbike and bike cycle repairing-shop, and (ix) skill worker such as carpenter, artisan etc.

115. Increasing family income from rice farming, migrant working, serving as skill-workers and doing small business in the last five years make AHs living condition better. However, boarder dispute between Cambodia and Thailand, and economic downturn is reducing AH income. Moreover, rehabilitation of commune road and bridge, construction of school building, health center, community drainage, well and toilet also make a major impact on AH living condition. Nevertheless, present of NGOs and micro-credit agencies in region give AHs a good opportunity to get support and access to low interest loan for them to do small business and solve family health issue and housing and agriculture investment.

116. The many AHs are living under national poverty line in the subproject area, and some of them are very poor. The essential reasons of the poverty are because (i) a member of their families falls sick and their family saving is entirely used for health issues, (ii) they don't have land for farming or have very small land compared to their household size and no other sources of income, (iii) they are in debt because of family health, agriculture investment, particularly fertilizer investment and household expenditure, (iv) they have small farm land and large family member, but jobless, (v) household head are vulnerable person, and (vi) usually their agriculture crop are damaged by drought, flood or insect or got low yield as they do not have enough money to buy fertilizer.

117. Problems in agriculture mostly are: (i) lack of irrigation system for rice cultivation in wet and dry season, (ii) fertilizer and insecticide are expensive and unaffordable so some AHs are in debt to fertilizer and insecticide shop with high interest rate, (iii) lack of quality rice seed for cultivation, (iv) lack of agricultural technique, (v) agriculture market are depend on middleman and not stable, (vi) rate and insect destroy rice and (vii) experience flood and drought some time.

118. Small livestock and cattle is one of the main income, protein food, agricultural labor and organic fertilizer source for AHs. Currently, the AHs have experience hardship in raising livestock. The reasons are lack of fodder, particularly cattle since common grassland field was converted to private farm land, high animal food price, no veterinary in the region and low profit because of low selling price. The mood to raise cattle is decreasing as many farmers turn to using hand tractor for farming which are faster, do not need feeding, and can be used to transport agriculture products and to rent to neighborhood farmer.

119. With the project, the groups expect that the project will allow them to double crop (dry and wet season), have water for growing vegetable around their houses, and have more fish for irrigations scheme.

120. The groups prefer land to cash compensation for who have small affected land and land to land compensation for who have large affected land or landless because they think of difficulty to purchase land and keep compensation money. If they use compensation money to buy land, their prefer location is within few kilometers from village. Most of participants of the meetings plan to use the money to invest in business, agriculture equipment and household demands.

121. Beside compensation, the groups address the need for more support from the project such as training on various suitable agricultural skills and off-farm training such as skill to repair machine, particularly hand tractor, pumping machine and motorbike and beauty make-up skills as well as hair cut. For vulnerable group, the aged-headed household needs health care support, the woman-headed household request to support their agricultural labor, the disable headed household and poor household need credit for business investment. All of them request that the government help to find market for their agriculture product so that they can sell in better price.

### **3.3.6 Implementation Schedule**

122. **Table 3-3-6** below provides a proposed implement schedule for the Kork Thnong subproject resettlement implementation.

**Table 3-3-6: Implementation Schedule for RP of Kork Thnong**

Activity	2009	2010											
	Q4	Q1			Q2			Q3			Q4		
Approval of RP by IRC & ADB	X												
Notice to Proceed with implementation	X												
Final disclosure/concurrence of AHs	X												
Vouchering	X												
Delivery of compensation /entitlements	X												
Agriculture training activities*		X	X	X	X	X	X	X	X	X	X	X	X
Internal & external monitoring	X	X	X	X	X	X	X	X	X	X			
External Monitoring	X	X			X			X			X		
Submit compliance both internal and external monitoring report	X	X	X	X	X	X	X	X	X	X			
Evaluate RP implementation											X	X	X
Additional resettlement measures											X	X	X
Submission of RP Completion report										X			
Approval of RP Completion report											X		

\* : the activities are to train AHs in the agriculture extension in component 3 of the NWISP.

### 3.3.7 Costs and Budget

#### Procedures for Flow of Funds

123. The IRC will request the Ministry of Economic and Finance (MEF) for funding for the implementation of the RP3. The funds will be forwarded to the Provincial Departments of Economy Finance. Payment vouchers will be prepared at the Provincial Department of Economy and Finance with coordination from IRC-WG, PRSC-WG. Payment of compensation and other entitlements as described in Chapter 3 of the RP3 will be given in cash and will be distributed at village offices. The AHs will be notified through the village chiefs of the schedule of payment of compensation and other entitlements.

#### Compensation and Contingency Costs

124. The cost estimates for the implementation of the RP3 also include a provision for contingencies equivalent to 15% of the base cost of resettlement. MOWRAM and IRC will ensure that adequate funds are made available as and when necessary for the efficient and timely implementation of the resettlement activities.

#### Estimate of Resettlement Costs

125. The overall estimated costs excluding administration costs are shown in Table 3-3-7 below.

**Table 3-3-7: Estimated Costs for Implementation of the RP of Kork Thnong**

No.	Compensation Items	Unit	Rate \$	Quantity	Cost \$
<b>I</b>	<b>Compensation for Land</b>				
1	Rice land	m <sup>2</sup>	0.19	38,053.20	7,230.11
2	Chamkar land	m <sup>2</sup>	0.55	1,718.00	944.90
3	Residential	m <sup>2</sup>	0.75	409.08	306.81
	<b>Sub-Total (1)</b>				<b>8,481.82</b>
<b>II</b>	<b>Compensation for Tree</b>				
1	Sugar palm	Tree	25	135	3,375.00
2	Coconut	Tree	30.25	4	121.00

3	Guava	Tree	4.5	3	13.50
4	Bamboo	Thicket	10	15	150.00
5	Custard apple	Tree	6	1	6.00
6	Tamarind	Tree	27	3	81.00
7	Kraseing	Tree	10	3	30.00
8	Others	Tree	5	28	140.00
	<b>Sub-Total (2)</b>			<b>192</b>	<b>3,916.50</b>
<b>III</b>	<b>Allowance and assistance</b>				
1	Vulnerable Group AH allowance	AH	150	15	2,250.00
2	Ahs of loss > 10% of their productive land	AH	150	2	300.00
	<b>Sub-Total (3)</b>				<b>2,550.00</b>
	<b>Total Base Cost (sum 1-3 above)</b>				<b>14,948.32</b>
	<b>Contingencies (15%)</b>				<b>2,242.25</b>
	<b>Grand Total</b>				<b>17,190.57</b>

### 3.4 RESULTS OF DON AOV SUBPROJECT

#### 3.4.1 Results of the Detailed Measurement Survey

126. The Detail Measurement Survey (DMS) was conducted from August to September 2009 after public dissemination meeting at Battambang municipality and a meeting between affected villages and AHs and non-AHs. The meetings were to explain about the project, its beneficiary, DMS process, entitlements, compensation, etc to village leaders and AHs. The result of DMS showed that there are 282 AHs affected by the subproject with affected assets of agricultural, Chamkar and residential lands, trees, and vulnerable groups. The detailed impact is shown below and summarized in **Table 3-4-5: a Matrix of Entitlements for Don Aov subproject.**

#### Impact on Agricultural and Residential Land:

127. According to the DMS, a total of 334,771.67m<sup>2</sup> of rice land occupied by 278 AHs, 2,435.65m<sup>2</sup> of Chamkar land belonging to 2 AHs and 1,516.50 m<sup>2</sup> of residential land used by 6 AHs have to be acquired for the subproject construction. However, of 280 AHs (278 AHs of rice land and 2 AHs of Chamkar land), there are only 44 AHs loses productive land more than 10% of their holding land.

128. The subproject totally affects on rice, Chamkar and residential land of 282 AHs in 12 villages which three affected villages, Chamkar, Ream Sena and Doun Aok are in Lovea commune, Bovel district, Battambang province and nine affected villages are in Seur and Chamnoam communes, Mongkul Borey district, Banteay Meanchey province. The most severely affected village is Doun Aok village, where 43 AHs have 62,233.17m<sup>2</sup> of their rice land affected by the subproject and followed by Ream Sena, Thnot, Bour, O Seur, Ta Moav, Bos Loak, Seur, Chour Kchas, and Plov Damre Leu villages. The other villages, Ta Bun and Chamkar have minor impact on people properties (**Tab. 3-4-1**).

**Table 3-4-1: Impact on Agricultural and Residential Land in Don Aov**

RP of Ta Saom, Kork Thnong, Don Aov, Canal No.1 & Chork Reservoir Subprojects

Commune Name	Lovea			Seur							Chamnoam		TOTAL
Village Name	Chamkar	Ream Sena	Doun Aok	Ta Moav	Thnot	Bour	Bos Loak	Plov Damrey Leu	Seur	O Seur	Chour Kchas	Ta Bun	
AHs	2	41	43	25	28	30	20	17	20	26	26	3	281
Affected People	8	165	198	115	136	146	93	71	92	107	122	10	1263
Areas of Affected Land (m <sup>2</sup> )													
Rice Land	1,224.50	61,217.16	62,233.17	25,509.35	36,328.11	29,295.02	24,316.37	17,207.30	23,890.65	26,264.74	19,658.05	7,627.25	334,771.67
Chamkar Land	-	-	-	-	-	-	-	-	-	-	2,435.65	-	2,435.65
Residential Land	-	349.00	-	-	-	-	-	-	-	-	1,167.50	-	1,516.50
Total Land Area	1,224.50	61,566.16	62,233.17	25,509.35	36,328.11	29,295.02	24,316.37	17,207.30	23,890.65	26,264.74	23,261.20	7,627.25	338,723.82

**Impact on Trees:**

129. In total, the construction of the structures, canals and road embankments affect on 345 trees belonging to 77 AHs in 10 villages (**Tab. 3-4-2**). Most of the affected trees, 163 trees of 7 AHs, are situated in Chour Kchas village, where Main Drain of the subproject will be constructed across residential land of the village. Doun Aok, Bos Loak, Bour and Thnot are the second, third, fourth, fifth largest number of affected trees. Of 345 trees; there are 15 categories of trees such as mango, sugar palm, coconut, organge, longan, jackfruit, papaya, guava, bamboo, custard apple, banana, jambolan, tamarind, Kraseing and other non-fruit trees.

130. Orange, mango, Kraseing, jambolan, tamarind and other non-fruit trees are the dominant affected trees of the subproject. But the essential productive trees of the villagers in the subproject are orange, mango, coconut, jackfruit, longan, papaya, custard apple, bamboo, banana, and tamarind because it can contributes to their family livelihood. Sugar palm is not an important tree in the affected villages, since sugar production from palm juice is not the culture of villagers in the subproject area. Moreover, there is lack of fire wood as raw material for sugar production and production of the sugar from palm need labor intensive.

**Table 3-4-2: Loss of Trees in Don Aov**

Commune Name			Seur						Chamnoam		TOTAL
Village Name	Ream Sena	Doun Aok	Ta Moav	Thnot	Bour	Bos Loak	Seur	O Seur	Chour Kchas	Ta Bun	
AHs	2	10	9	20	10	10	6	2	7	1	77
Total Affected Trees	21	38	15	25	29	33	8	11	163	2	345
Name and Number of Affected Trees											
Mango	16	-	-	-	-	1	-	-	13	-	30
Sugar palm	1	15	-	-	-	-	-	-	1	-	17
Coconut	-	-	-	-	-	-	-	-	12	-	12
Orange	-	-	-	-	-	-	-	-	76	-	76
Longan	-	-	-	-	-	-	-	-	2	-	2
Jackfruit	-	-	-	-	-	-	-	-	1	-	1
Papaya	-	-	-	-	-	-	-	-	10	-	10
Guava	-	-	-	-	-	-	-	-	2	-	2
Bamboo	-	-	-	-	-	3	-	-	-	-	3
Custard apple	-	-	-	-	-	-	-	-	14	-	14
Banana	-	-	-	-	-	-	-	-	9	-	9
Jambolan	-	15	-	3	6	1	-	-	2	-	27
Tamarind	-	1	4	1	1	3	1	-	10	-	21
Kraseing	-	6	4	4	2	2	3	-	3	2	26
Others	4	1	7	17	20	23	4	11	8	-	95



### Impact on Vulnerable Groups:

131. According to DMS data, a total of 97 vulnerable AHs have been identified from the total of 108 vulnerable group incidences of the subproject. They are ranked as vulnerable for at least one of the following reasons: they are woman-headed, aged-headed, disabled-headed, and/or with a monthly household income below the national poverty line (\$14/month). Many of the AHs are ranked as vulnerable for more than one of the above reasons, in this case we have listed them in the figures shown in **Table 3-4-3** below. Aged-headed and woman-headed AHs are covered about 97% of the total vulnerable household incidences.

132. The vulnerable AHs will receive an allowance of \$150 per household regardless one or more incidences of vulnerability. The allowance is to reduce their impoverishment risks and assist them to mitigate vulnerability and get advantage of the project benefits.

**Table 3-4-3: Impact on Vulnerable Groups in Don Aov**

Commune Name	Lovea			Seur							Chamnoam		Total Incidence of Vulnerable Group
Village Name	Chamkar	Ream Sena	Doun Aok	Ta Moav	Thnot	Bour	Bos Loak	Plov Damrey Leu	Seur	O Seur	Chour Kchas	Ta Bun	
Affected Vulnerable Groups													
Woman-headed AH	-	4	4	6	2	3	3	4	4	5	2	-	37
Aged-headed AH	1	10	4	7	5	9	5	4	8	5	9	1	68
Disabled-headed AH	-	-	2	-	-	-	-	-	-	1	-	-	3
Income below US\$14/mth	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Incidence of Vulnerable Group	1	14	10	13	7	12	8	8	12	11	11	1	108
Total Vulnerable AH	1	14	9	11	6	11	7	6	11	10	10	1	97

### Summary of Impact on Affected Households:

133. Table 3-4-4 below provides a summary of impact for the Don Aov subproject.

**Table 3-4-4: Summary of Project Impact in Don Aov**

No.	Type of Impact	Unit	AH Incidence	Total Quantity	Remark
<b>I</b>	<b>Land</b>				
1	Rice land	m <sup>2</sup>	278	334,771.67	
2	Chamkar land	m <sup>2</sup>	2	2,435.65	
3	Residential land	m <sup>2</sup>	6	1,516.50	
4	Loss more 10% of productive land	AH	44	44	
<b>III</b>	<b>Tree</b>				
1	Mango	tree	5	30	
2	Sugar palm	tree	4	17	
3	Coconut	tree	4	12	
4	Orange	tree	2	76	
5	Longan	tree	1	2	
6	Jackfruit	tree	1	1	
7	Papaya	tree	3	10	
8	Guava	tree	1	2	
9	Bamboo	thicket	1	3	
10	Custard apple	tree	2	14	

11	Banana	clump	2	9	
12	Jambolan	tree	13	27	
13	Tamarind	tree	11	21	
14	Kraseing	tree	18	26	
15	Others	tree	34	95	
<b>IV</b>	<b>Vulnerable Group</b>				
1	Vulnerable Group	AH	97	97	

### 3.4.2 Basics of Unit Cost Used in Calculating Compensation

134. The replacement cost for residential land, productive agricultural land and trees is calculated based on the price in neighboring regions and local markets in Don Aov subproject area. This price survey responding to the agreed policy on compensation rates between the government and ADB. Based on this policy, an independent local consultant was engaged by IRC to conduct a replacement cost study in the affected area to establish the compensation rates for affected assets.

135. The survey was conducted in October 2009 with existing owners of land and tree, 30 AHs and 30 non-AHs, in 4 FGDs meetings, with 4 village leaders and 5 vegetable vendors. This allowed a comprehensive study of land prices (residential, rice and Chamkar lands), and tree prices surrounding Don Aov region. The discussion below focuses on compensation rates for the relevant affected properties. The detailed compensation rates for affected assets are shown in **Appendix 6** of this RP3.

### 3.4.3 Detailed Compensation and Other Entitlements

136. The implementation of Don Aov subproject will result in the acquisition of lands and trees as described in Section 3-4. AHs will be compensated according to the resettlement policy and principles set out in Chapter 2 of this RP3. Table 3-4-5 outlines the compensation and entitlements for each category of AHs.

**Table 3-4-5: Entitlement Matrix of Don Aov**

No.	Type of Impact	Application	Entitled Person	Entitlements
1.	Residential Land  6 AHs	6 affected residential plots	Owner or person with customary usage rights	For the <b>portion</b> of the land needed: +Cash compensation at replacement cost; +Compensation for affected structures or trees at replacement cost; +AHs will be given sufficient time to harvest crops and 15 days to deconstruct structures on their subjected property; <b>+If falling in one of the categories of vulnerability,</b> Cash assistance of \$150 for each AH without repeating.
2.	Chamkar Land  2 AHs	2 affected Chamkar plots	Owner or person with customary usage rights	For the <b>portion</b> of the affected land: +Cash compensation at replacement cost; +Compensation for affected structures or trees at replacement cost; +AHs will be given sufficient time to harvest crops and 15 days to deconstruct structures on their subjected property; <b>+If falling in one of the categories of vulnerability,</b> Cash assistance of \$150 for each AH without repeating.
3.	Farmland  278 AHs	Marginal impact  234 AHs	Owners <b>with</b> acceptable (recognized) proof of ownership	For the <b>portion</b> of the land needed: +Cash compensation is at replacement cost; +Cash compensation for affected tree at replacement cost; and +AH will be given sufficient time to harvest crops on their subjected property <b>+If falling in one of the categories of vulnerability,</b> Cash assistance of \$150 for each AH without repeating.

			AHs <b>without</b> acceptable proof of ownership, including lessees	Not applicable
		Severe impact 44 AHs	Owners <b>with</b> acceptable (recognized) proof of ownership	+Cash compensation at replacement cost for the entire land losses, or land-to-land with secure tenure; +AH will be given sufficient time to harvest crops on their subjected property <b>+Allowance and income restoration:</b> (i) cash assistance of \$150; (ii) the income restoration to be provided by the Project component 3; <b>+If falling in one of the categories of vulnerability,</b> Cash assistance of \$150 for each AH without repeating.
			AHs without acceptable proof of ownership, including lessees Nil	Not applicable
4.	Trees 77 AHs	All types 345 trees	Owner or person with customary usage rights	+ Annual Crops: AHs will be given two (2) months notice that the land on which their crops are planted will be damaged or used by the subproject and that they must harvest their crops in time; + Cash compensation for loss of crops is at annual produce replacement cost; + Perennial Crops and Trees: AHs will be compensated for the loss of fruit and timber trees at replacement cost. The value will be calculated as the annual produce value multiplied by a 1 to 8 years factor, depending type of tree to yield.

### 3.4.4 Socio-Economic Profile

#### Demography:

137. The average household size is 4.5 per household. The DMS data indicates that 6% of household heads are below 30 years old. However, 27% of households have more than 5 people in the household because of extended family typically including aging parents and/or one or two adult children's spouses and children.

138. There are 51% women, slightly more than men. About 13% of affected households are headed by women. This indicates a low rate of separation or divorce. 31% of the total population is below 20 years old, thus indicating there will be a good labor supply for their families, communities, and surrounding regions.

#### Poverty:

139. The measurement of household income and expenditure, housing type, assets, agricultural land possession size, number and type of livestock, and their declaration of food shortages indicate the incidence of poverty is about 43% in the sample population (based on \$1.25/person/day). 76% of Women-headed households have income less than \$1.25/person/day and since they experience inadequate labor for agriculture or for other income generation.

140. The data also indicate 35% of the affected households encounter health issues in their family, which is one of the major factors influencing the family financial crisis. The survey also indicates that 16% of households face food shortage.

#### Landholding:

141. The majority of affected lands in the subproject area located in Doun Aok and Ream Sena villages with total affected families of 84 in command area. On average, AHs hold 5.7 ha of land per household, but there is a wide variance among the households. The most

frequently cited reason for poverty was insufficient land for farming and a large family to support. 45% of AHs possess land smaller than 1 ha and 44% own land more than 2 ha. Other 11% own about 1-2 ha.

#### **Education:**

142. There are different education levels of people in the affected communities. Although almost 100% of the heads of AHs participated in primary school, 15% are illiterate. Socio-economic survey indicates that 95.80% of children in the 6 to 12 year age range have studied in primary school, and 34.78% of children in the 13 to 18 year age range have entered junior high school. Only 12.65% studied in high school.

143. Average distance from home to primary school in Don Aov sub-project is approximately 2km, which take 30 minute for children to walk. However, some children walk about 5km and take them more than one hour to come to school.

#### **Health:**

144. Health is one of the main concerns of AHs. According to the survey, 35% of AHs households encounter health issues in their family, of which about 45% mentioned that their health issues are medium and serious for their families as well as unaffordable. AHs of subproject Don Aov have to walk about 5km to go to commune health center.

#### **Situation of Women:**

145. The socio-economic survey indicates that 51% of APs are women and 78% of adult women are working as rice farmer and the other 22% are working in non agriculture sector. The women are also responsible for taking care of children, house work and other work around their houses such as planting vegetable, raising livestock, etc. The survey also found that young women are to work on non-agricultural sector, particularly, garment factory worker. For men, only about 20% of adult men are working in non-agricultural sector. That is because of culture, physical and security advantage of man.

#### **Support for the Project:**

146. According to the socio-economic survey, 95% of AHs thinks that the project will benefit them. 15% expect that the project will provide additional water for wet season cropping, while 91% expect additional water for dry season crops. 15% of AHs believe that the project will increase the fish population and become a major source of protein for the community, and 24% consider the project will provide other benefits. There is also a perception that the Project will lead to other supporting activities from NGOs such agricultural and livestock production skill training with their application providing significant production improvements.

#### **Attitudes of AHs:**

147. Base on the 20% sample in the socio-economic survey, about 97% of AHs prefers cash rather than land-for-land compensation. Only 3% prefer land-for-land with distance to the new land plots 0.5 to 2 km from the villages, 0.2 to 1 km from the irrigation network and within 1 km from the main road. The compensation land must be suitable for residential settlement for the residential land loss AP.

### **3.3.5 Public Participation and Consultation**

#### **Informing AHs:**

148. A Subproject Steering Committee meeting was held on 5 August 2009 at the conference hall of Battambang province chaired by Chairman of Provincial Resettlement

Subcommittee (RRS) and deputy governor of Seam Reap with participation from representatives of Resettlement Department of MEF, Resettlement Unit of MOWRAM, IRC Provincial Working Group and affected commune chiefs. The meeting focused on launching the DMS in Don Aov, Canal No.1 and Chork Reservoir subproject and discussing on the (i) resettlement policy, (ii) public consultations with AHs, and (iii) background of the land usage in the four subprojects of Pursat.

149. Before DMS, on 7 August 2009, the IRC and PRS working group conducted 2 public consultations meeting with all AHs. The each meeting explains (i) supporting and implementing agencies and agencies charging for DMS, preparing RP, monitoring RP and grievance redress, (ii) benefits of the subproject, (iii) resettlement issues and procedure, (iv) compensation and entitlement, (v) people participation in project, (vi) necessary document for DMS and (vii) open forum for discussion.

150. After the each meeting, Public Information Booklets were distributed to the participants in order to disseminating information on Involuntary Resettlement Policy of ADB, subproject benefits, participation with the project and other relevant information. AH who didn't attend the meeting, would get the Information Booklets during DMS survey.

#### **Focus Group Discussion with AHs:**

151. Four Focus Group Discussions with AHs were conducted on 30 September 2009 to investigate the impact of the subproject, socio-economic condition, village profile, training need assessment for livelihood restoration, and concern of AHs. The schedule of the meetings is in Table 3-4-6. The content of the discussions during the FGDs are summarized below, and the details for each meeting are provided.

**Table 3-4-6: Record of Focus Group Discussion in Don Aov**

<b>Wednesday, 30 September 2009</b>	<b>Wednesday, 30 September 2009</b>
Time: 8:00 a.m Venue: Thnot pagoda Participation: Mixed Group from Thnot village Time: 10:00 p.m Venue: Bour primary school Participation: Mixed Group from Ta Mao and Bour villages	Time: 4:00 a.m Venue: House of Chour Kchas chief village Participation: Mixed Group from Chour Khchas village
Time: 2:00 p.m Venue: Don Aov primary school Participation: Mixed Group from Don Aov and Ream Sena village	

152. The main occupations of AHs in the subproject are (i) rice farmer, (ii) migrant worker in Thailand, (iii) doing small business in community, (iv) livestock and cattle farming, (v) vegetable farming (vi) fishing, (vii) transportation worker, (viii) running small TV, phone, motorbike and bike cycle repairing-shop, and (ix) skill worker such as carpenter, artisan etc.

153. Increasing family income from rice farming, migrant working, serving as skill-workers and doing small business in the last five years make AHs living condition better. However, boarder dispute between Cambodia and Thailand, and economic downturn is reducing AH income. Moreover, rehabilitation of commune road and bridge, construction of school building, health center, community drainage, well and toilet also make a major impact on AH living condition. Nevertheless, present of NGOs and micro-credit agencies in region give AHs a good opportunity to get support and access to low interest loan for them to do small business and solve family health issue and housing and agriculture investment.

154. The many AHs are living under national poverty line in the subproject area, and some of them are very poor. The essential reasons of the poverty are because (i) a member of their

families falls sick and their family saving is entirely used for health issues, (ii) they don't have land for farming and no job, (iii) they are in debt because of family health, agriculture investment, particularly fertilizer investment and household expenditure, (iv) they have small farm land and large family member, but jobless, (iv) household head are vulnerable person, and (v) agriculture crop are damaged by drought, flood or insect.

155. Problems in agriculture mostly are: (i) lack of irrigation system for rice cultivation in wet and dry season, (ii) fertilizer and insecticide are expensive and unaffordable so some AHs are in debt to fertilizer and insecticide shop with high interest rate, (iii) lack of quality rice seed for cultivation, (iv) lack of agricultural technique, (v) agriculture market are depend on middleman and not stable, (vi) rate and insect destroy rice and (vii) experience flood and drought some time.

156. Small livestock and cattle is another source of income for families, protein food, agricultural labor and organic fertilizer source for AHs. Currently, the AHs have experience hardship in raising livestock. The reasons are lack of fodder, particularly cattle since common grassland field was converted to private farm land, high animal food price, no veterinary in the region and low profit because of low selling price. The mood to raise cattle is decreasing as many farmers turn to using hand tractor for farming which are faster, do not need feeding, and can be used to transport agriculture products and to rent to neighborhood farmer.

157. With the project, the groups expect that the project will allow them to double crop (dry and wet season), have water for growing vegetable around their houses, and have more fish for in irrigations scheme.

158. The groups prefer land to cash compensation for who have small affected land and land to land compensation for who have large affected land or landless because they think of difficulty to purchase land and keep compensation money. If they use compensation money to buy land, their prefer location is within few kilometers from village. Most of participants of the meetings plan to use the money to invest in business, agriculture equipment and household demands.

159. Beside compensation, the groups address the need for more support from the project such as training on various suitable agricultural skills and off-farm training such as skill to repair machine, particularly hand tractor, pumping machine and motorbike and beauty make-up skills as well as hair cut. For vulnerable group, the aged-headed household needs health care support, the woman-headed household request to support their agricultural labor, the disable headed household and poor household need credit for business investment. All of them request that the government help to find market for their agriculture product so that they can sell in better price.

### 3.4.6 Implementation Schedule

160. **Table 3-4-7** below provides a proposed implement schedule for the Don Aov subproject.

**Table 3-4-7: Implementation Schedule for RP of Don Aov**

\* : the activities are to train AHs in the agriculture extension in component 3 of the NWISP.

Activity	2009	2010											
	Q4	Q1			Q2			Q3			Q4		
Approval of RP by IRC & ADB	X												
Notice to Proceed with implementation	X												
Final disclosure/concurrence of AHs	X												
Vouchering	X												
Delivery of compensation /entitlements		X	X										
Agriculture training activities*		X	X	X	X	X	X	X	X	X	X	X	
Internal & external monitoring	X	X	X	X	X	X	X	X	X	X			
External Monitoring	X	X			X			X			X		
Submit compliance both internal and external monitoring report	X	X	X	X	X	X	X	X	X	X			
Evaluate RP implementation											X	X	X
Additional resettlement measures											X	X	X
Submission of RP Completion report										X			
Approval of RP Completion report											X		

### 3.4.7 Costs and Budget

#### Procedures for Flow of Funds

161. The IRC will request the Ministry of Economic and Finance (MEF) for funding for the implementation of the RP3. The funds will be forwarded to the Provincial Departments of Economy and Finance. Payment vouchers will be prepared at the Provincial Department of Economy and Finance with coordination of IRC-WG and PRSC-WG. Payment of compensation and other entitlements as described in Chapter 3 of the RP3 will be given in cash and will be distributed in village offices. The AHs will be notified through the village chiefs of the schedule of payment of compensation and other entitlements.

#### Compensation and Contingency Costs

162. The cost estimates for the implementation of the RP3 also include a provision for contingencies equivalent to 15% of the base cost of resettlement. MOWRAM and IRC will ensure that adequate funds are made available as and when necessary for the efficient and timely implementation of the resettlement activities.

#### Estimate of Resettlement Costs

163. The overall estimated costs excluding administration costs are shown in Table 3-4-8 below.

**Table 3-4-8: Estimated Costs for Implementation of the RP of Don Aov**

No.	Compensation Items	Unit	Rate \$	Quantity	Cost \$
I	<b>Compensation for Land</b>				
1	Rice land	m <sup>2</sup>	0.32	334,771.67	107,126.93
2	Chamkar land	m <sup>2</sup>	1.3	2,435.65	3,166.35
3	Residential	m <sup>2</sup>	2.1	1516.5	3,184.65

	<b>Sub-Total (1)</b>				<b>113,477.93</b>
<b>II</b>	<b>Compensation for Tree</b>				
1	Mango	Tree	28.5	30	855.00
2	Sugar palm	Tree	25	17	425.00
3	Coconut	Tree	28	12	336.00
4	Orange	Tree	30	76	2,280.00
5	Longan	Tree	30	2	60.00
6	Jackfruit	Tree	32.13	1	32.13
7	Papaya	Tree	3.75	10	37.50
8	Guava	Tree	4	2	8.00
9	Bamboo	Thicket	8.52	3	25.56
10	Custard apple	Tree	5	14	70.00
11	Banana	Clump	4.52	9	40.68
12	Jambolan	Tree	8	27	216.00
13	Tamarind	Tree	25	21	525.00
14	Kraseing	Tree	10	26	260.00
15	Others	Tree	5	95	475.00
	<b>Sub-Total (2)</b>			<b>345</b>	<b>5,645.87</b>
<b>III</b>	<b>Allowances and assistance</b>				
1	Vulnerable Group AH allowance	AH	150	97	14,550.00
2	Ahs of loss > 10% of their productive land	AH	150	44	6,600.00
	<b>Sub-Total (3)</b>				<b>21,150.00</b>
	<b>Total Base Cost (sum 1-3 above)</b>				<b>140,273.80</b>
	<b>Contingencies (15%)</b>				<b>21,041.07</b>
	<b>Grand Total</b>				<b>161,314.87</b>

### 3.5 RESULT OF CANAL NO. 1 SUBPROJECT

#### 3.5.1 Results of the Detailed Measurement Survey

164. The Detail Measurement Survey (DMS) was conducted from August to September 2009 after public dissemination meeting in Pursat municipality and a meeting between affected villages and AHs and non-AHs. The meetings were to explain about the project, its beneficiary, DMS process, entitlements, compensation, etc to village leaders and AHs. The result of DMS showed that there are 373 AHs affected by the subproject with affected properties of structures, lands, trees, and vulnerable groups. The detailed impact is shown below and summarized in Table 3-5-6: a Matrix of Entitlements for Canal No.1 subproject.

#### Impact on Agricultural and Residential Land:

165. According to the DMS, a total of 220,883.43 m<sup>2</sup> of rice land, 464.00 m<sup>2</sup> of Chamkar and 890.35 m<sup>2</sup> of residential land will be acquired for the subproject and 324 rice land holders, 2 Chamkar land holders and 6 residential land holders will partially lose their rice land, Chamkar and residential, respectively. Moreover, of 326 AHs (324 affected rice land holders and 2 affected Chamkar land holders), 22 AHs loses productive land more than 10% of their total holding productive land.

166. Totally, the subproject affects on rice, Chamkar and residential land of 328 AHs in 8 villages, Kaoh Ream and Knach Romeas, Prakeap, Ballang Kraom, Kouk Khpos, Kaong Kang, Prey Leav and Thmei of Knach Romeas, Rong Chrey and Bansay Treng communes, Bovel and Thma Koul districts, Battambang province. The most severely affected village is Prakeap village, where 100 AHs occupied rice land, Chamkar and residential lands of



54,982.40 m<sup>2</sup>, will be affected by the subproject. Knach Romeas is the second severely affected village where 66 AHs used 48,902.25 m<sup>2</sup> of their rice, Chamkar and residential lands will be acquired for the subproject. Detailed impact on land by village is shown in **Table. 3-5-1**.

167. The affected Chamkar land for this subproject is affected by Secondary Drain 2 and 3 and is the land next to residential land where AHs plant vegetables and fruit trees for their family daily earning. This land could also use for subdivision as residential lots for their children in the future.

168. Of 6 affected residential lands, a plot of residential land is situated on RN 157 and about 50m from the Knach Romeas market, considered as “residential land type 1” and the other five affected residential lands are the land of few hundreds meters south of RN 157. The reason of the classification is the land price of the two locations is huge different, because of its proximity to RN 157, market, urban settlement and facilities.

**Table 3-5-1: Impact on Agricultural, Residential and Pond Land in Canal No.1**

Commune Name	Knach Romeas		Roung Chrey			Bansay Treng			TOTAL
Village Name	Kaoh Ream	Knach Romeas	Prakeap	Ballang Kraom	Kouk Khpos	Kaong Kang	Prey Leav	Thmei	
AHs	1	66	100	23	25	35	35	43	<b>328</b>
Total Affected People	2	248	430	90	107	134	159	183	<b>1353</b>
Affected Land and Area m <sup>2</sup>									
Rice land	-	48,902.25	54,982.40	11,929.75	22,659.65	20,103.04	22,465.90	39,840.44	<b>220,883.43</b>
Chamkar land	-	74.00	390.00	-	-	-	-	-	<b>464.00</b>
Residential land type 1	300.00	-	-	-	-	-	-	-	<b>300.00</b>
Residential land type 2	-	73.85	426.50	-	-	-	-	90.00	<b>590.35</b>

169. The rehabilitation of Main Canal of the subproject cause 12 AHs who are living on right-of-way existing canal, Canal No.1 embankment, become landless because they have no other alternative residential land to live. Of 12 landless AHs, 11 AHs are in Knach Romeas village and 1 AH is in Kaoh Ream village. They will be provided a residential land plot of 105m<sup>2</sup> (7m x 15m) at a resettlement site near their existing place with basic infrastructures such as access road, toilets and well. The budget for this resettlement site is indicated in **Table 3.5.10**.

#### Impact on Structures:

170. The construction of entire subproject will affect 31 structures of 28 AHs which can be classified into 15 main structures (house and shop-house) of 15 AHs and 16 other structures (kitchen, toilette, shop, stall, rice bin, chicken/pig pen and wooden fence) of 13 AHs in four villages, Kaoh Ream, Knach Romeas, Prakeap and Thmei (**Tab. 3-5-2**).

**Table 3-5-2: Impact on Structures and other assets in Canal No.1**

RP of Ta Saom, Kork Thnong, Don Aov, Canal No.1 & Chork Reservoir Subprojects

Commune	Knach Romeas				Roung Chrey		Bansay Treng		Total AH Incidence	Total Quantity
Village	Kaoh Ream		Knach Romeas		Prakeap		Thmei			
	AH	Quantity	AH	Quantity	AH	Quantity	AH	Quantity		
Affected Structure										
Residential Structure "Type 1"	1	30.40m <sup>2</sup>	8	216.76m <sup>2</sup>	-	-	1	8.75m <sup>2</sup>	10	255.91m <sup>2</sup>
Residential Structure "Type 2"	1	45.90m <sup>2</sup>	1	28.71m <sup>2</sup>	-	-	-	-	2	74.61m <sup>2</sup>
Residential Structure "Type 3"	-	-	1	50.00m <sup>2</sup>	-	-	-	-	1	50.00m <sup>2</sup>
Shop-house	-	-	2	114.87m <sup>2</sup>	-	-	-	-	2	114.87m <sup>2</sup>
Kitchen	3	62.25m <sup>2</sup>	-	-	-	-	-	-	3	62.25m <sup>2</sup>
Toilette	-	-	2	21.40m <sup>2</sup>	-	-	-	-	2	21.40m <sup>2</sup>
Shop	2	50.47m <sup>2</sup>	1	58.00m <sup>2</sup>	-	-	-	-	3	108.47m <sup>2</sup>
Stall	1	10.50m <sup>2</sup>	2	16.30m <sup>2</sup>	-	-	-	-	3	26.80m <sup>2</sup>
Rice bin	-	-	-	-	1	13.50m <sup>2</sup>	-	-	1	13.50m <sup>2</sup>
Chicken and pig pen	1	15.19m <sup>2</sup>	-	-	-	-	-	-	1	15.19m <sup>2</sup>
Wooden fence	1	32.50m	2	54.50m	-	-	-	-	3	87.00m
Total AH Incidence	10		19		1		1		31	-
<b>Total AH</b>	<b>9</b>		<b>17</b>		<b>1</b>		<b>1</b>		<b>28</b>	<b>-</b>

### Impact on Trees:

171. In total, the constructions of the structures, canals and embankments of the subproject affect on 249 trees belonging to 58 AHs in 8 villages (**Tab. 3-5-3**). Most of the affected trees, 154 trees, are situated along the Main Canal in Kaoh Ream and Knach Romeas villages. The Secondary Drain 2 causes second rank of affected trees with the number of 65 trees. Detailed affected trees by village are indicated in **Table. 3-5-3**.

172. Of 249 trees; there are 12 categories of trees such as mango, sugar palm, coconut, Teuk Doh Kor, bamboo, jambolan, papaya, custard apple, banana, tamarind, Kraseing and other non-fruit trees (**Tab. 3-5-3**). Jambolan is the most affected trees with affected number of 60 trees; and surgar palm and mango trees are the second and third highest affected trees with the number of 43 and 42 trees, respectively, in the subproject. The tree types of tree are consisted of 58% of total affected trees. The other dominant affected trees are bamboo and other non-fruit trees.

173. However, the essential productive trees in the subproject area are mango, coconut, Teuk Doh Kor, bamboo, papaya, banana and tamarind because it can contribute to family livelihood. Sugar palm is not an important tree in the affected villages, since sugar production from palm juice is not the culture of villagers in the subproject area. Moreover, there is lack of fire wood as raw material for sugar production and production of the sugar from palm need labor intensive.

**Table 3-5-3: Loss of Trees in Canal No.1**

Commune Name	Knach Romeas		Roung Chrey			Bansay Treng			TOTAL
Village Name	Kaoh Ream	Knach Romeas	Prakeap	Ballang Kraom	Kouk Khpos	Kaong Kang	Prey Leav	Thmei	
AHs	3	24	4	3	11	7	3	3	<b>58</b>
Total Affected Trees	27	144	11	4	32	20	4	7	<b>249</b>
Name and Number of Affected Trees									
Mango	2	27	8	-	-	-	-	5	<b>42</b>
Sugar palm	1	42	-	-	-	-	-	-	<b>43</b>
Coconut	1	1	-	-	-	-	-	-	<b>2</b>
Teuk Doh Kor	1	1	-	-	-	-	-	-	<b>2</b>
Bamboo	-	27	2	-	-	-	-	-	<b>29</b>
Jumbolan	-	1	-	3	32	19	4	1	<b>60</b>
Papaya	13	-	-	-	-	-	-	-	<b>13</b>
Custard apple	-	1	-	-	-	-	-	-	<b>1</b>
Banana	7	3	1	-	-	-	-	-	<b>11</b>
Tamarind	-	9	-	1	-	-	-	-	<b>10</b>
Kraseing	-	2	-	-	-	-	-	-	<b>2</b>
Others	2	30	-	-	-	1	-	1	<b>34</b>

### Impact on Vulnerable Groups:

174. According to DMS data, a total of 112 vulnerable AHs have been identified from the total of 132 vulnerable group incidences in the subproject. They are ranked as vulnerable for at least one of the following reasons: they are woman-headed, aged-headed, disabled-headed, and/or with a monthly household income below the national poverty line (\$14/month). Many of the AHs are ranked as vulnerable for more than one of the above reasons, in this case we have listed them in the figures shown in Table 3-5-4 below. Aged-headed and woman-headed AHs are covered about 98% of the total vulnerable household incidences.

175. The vulnerable AHs that have one or more incidences of vulnerability will receive an allowance of \$150 per household. The allowance is to reduce their impoverishment risks and assist them to reduce their difficulties in living condition and get advantage of the project benefits.

**Table 3-5-4: Impact on Vulnerable Groups in Canal No.1**

Commune Name	Knach Romeas		Roung Chrey			Bansay Treng			Total Incident of Vulnerable Group
Village Name	Kaoh Ream	Knach Romeas	Prakeap	Ballang Kraom	Kouk Khpos	Kaong Kang	Prey Leav	Thmei	
Affected Vulnerable Groups									
Woman-headed AH	3	16	10	1	3	1	4	2	40
Aged-headed AH	2	27	25	2	10	7	5	11	89
Disabled-headed AH	-	1	-	-	1	-	-	-	2
Income below US\$14/mth	-	-	1	-	-	-	-	-	1
Total Incident of Vulnerable Group	5	44	36	3	14	8	9	13	132
Total Vulnerable AH	5	36	28	3	14	7	8	11	112

### Summary of Impact on Affected Households:

176. Table 3-5-5 below provides a summary of impact for the Canal No.1 subproject.

**Table 3-5-5: Summary of Project Impact in Canal No.1**

No.	Type of Impact	Unit	AH Incidence	Total Quantity	Remark
<b>I</b>	<b>Structure</b>				
1	Residential Structure "Type 1"	m <sup>2</sup>	10	255.91	
2	Residential Structure "Type 2"	m <sup>2</sup>	2	74.61	
3	Residential Structure "Type 3"	m <sup>2</sup>	1	50.00	
4	Shop-house	m <sup>2</sup>	2	114.87	
5	Kitchen	m <sup>2</sup>	3	62.25	
6	Toilette	m <sup>2</sup>	2	21.40	
7	Shop	m <sup>2</sup>	3	108.47	
8	Stall	m <sup>2</sup>	3	26.80	
9	Rice bin	m <sup>2</sup>	1	13.50	
10	Chicken and pig pen	m <sup>2</sup>	1	15.19	
11	Wooden fence	m	3	87.00	
<b>II</b>	<b>Land</b>				
1	Rice land	m <sup>2</sup>	324	220,883.43	
2	Chamkar land	m <sup>2</sup>	2	464.00	
3	Residential land type 1	m <sup>2</sup>	1	300.00	
4	Residential land type 2	m <sup>2</sup>	5	590.35	
5	Loss more 10% of productive land	AH	22	22	
6	Landless AH	AH	12	12	
<b>III</b>	<b>Tree</b>				
1	Mango	tree	18	42	
2	Sugar palm	tree	8	43	
3	Coconut	tree	2	2	
4	Teuk Doh Kor	tree	2	2	
5	Bamboo	thicket	13	29	
6	Jumbolan	tree	26	60	
7	Papaya	tree	2	13	
8	Custard apple	tree	1	1	
9	Banana	clump	5	11	
10	Tamarind	tree	10	10	
11	Kraseing	tree	2	2	
12	Others	tree	17	34	
<b>IV</b>	<b>Vulnerable Group</b>				
1	Vulnerable Group	AH	112	112	

### 3.5.2 Basics of Unit Cost Used in Calculating Compensation

177. The replacement cost for residential land, productive agricultural land, trees and structures is calculated based on the price in neighboring regions and local markets in Canal No. 1 subproject area. This price survey responding to the agreed policy on compensation rates between the government and ADB. Based on this policy, an independent local consultant was engaged by IRC to conduct a replacement cost study in the affected area to establish the compensation rates for affected assets.

178. The survey was conducted in October 2009 with existing owners of land and tree, 30 AHs and 30 non-AHs, in 4 FGDs meetings, with 4 village leaders, 4 carpenters groups, 5 vegetable vendors and 4 construction material shop-owners. This allowed a comprehensive study of land prices (residential, rice and Chamkar land), and tree prices, labor cost, and house and other structure valuation surrounding Canal No.1 region. The discussion below focuses on compensation rates for the relevant affected properties. The detailed compensation rates for affected assets are shown in **Appendix 6** of this RP3.

### 3.5.3 Detailed Compensation and Other Entitlements

179. The implementation of Canal No.1 subproject will result in the acquisition of lands, trees, and structures as described in Section 3-5. AHs will be compensated according to the resettlement policy and principles set out in Chapter 2 of this RP3. **Table 3-5-6** outlines the compensation and entitlements for each category of AHs.

**Table 3-5-6: Entitlement Matrix of Canal No.1**

No.	Type of Impact	Application	Entitled Person	Entitlements
1.	Structures 28 AHs	15 affected main structures 15 AHs	Owner or person with customary usage rights	+Cash compensation of part or entire structures will be based on replacement cost of construction materials and labor without considering deprivation and salvage materials after demolishing the structures; +AH will be given sufficient time, 15 days, to deconstruct their subjected property; and <b>Allowances:</b> +Cash assistance of <b>\$60</b> for transportation allowance will be provided to 15 AHs of 15 affected houses and shop-house; +Cash assistance of <b>\$25</b> (or 20Kg of rice per AH per month) for living assistance during transition period will be provided to 4 AHs of 4 affected houses; and <b>+If falling in one of the categories of vulnerability</b> , cash assistance of <b>\$150</b> for each category the AH belongs without repeating;
		16 affected other structures 13 AHs	Owner or person with customary usage rights	+Cash compensation of part or entire structures will be based on replacement cost of construction materials and labor without considering deprivation and salvage materials after demolishing the structures; +AH will be given sufficient time, 15 days, to deconstruct their subjected property; and <b>+If falling in one of the categories of vulnerability</b> , cash assistance of <b>\$150</b> for each category the AH belongs without repeating;
2.	Residential Land 6 AHs	6 affected residential plots	Owner or person with customary usage rights	For the <b>portion</b> of the land needed: +Cash compensation at replacement cost; +Compensation for affected structures or trees at replacement cost; +AH will be given sufficient time to harvest crops and 15 days to deconstruct structures on their subjected property; <b>+If falling in one of the categories of vulnerability</b> , cash assistance of \$150 for each AH without repeating.
3.	Landless 12AHs	12 Landless AHs	Owner or person with customary usage rights	+AH will be given sufficient time to harvest crops and 15 days to deconstruct structures on their subjected property; There are two relocation options for 10 AHs: a. Cash assistance for them to arrange relocation by themselves b. Receive a land plot of 7m x 15m of residential land for each AH in relocation site with basic infrastructure support such as road, toilet, wells and electricity <sup>3</sup> ;

<sup>3</sup> If available at the local area and available of local transmission line

RP of Ta Saom, Kork Thnong, Don Aov, Canal No.1 & Chork Reservoir Subprojects

4.	Chamkar Land  2 AHs	2 affected Chamkar plots	Owner or person with customary usage rights	For the <b>portion</b> of the affected land: +Cash compensation at replacement cost; +Compensation for affected structures or trees at replacement cost; +AH will be given sufficient time to harvest crops and 15 days to deconstruct structures on their subjected property; <b>+If falling in one of the categories of vulnerability,</b> cash assistance of \$150 for each AH without repeating.
5.	Rice land  324 AHs	Marginal impact  302 AHs	Owners <b>with</b> acceptable (recognized) proof of ownership	For the <b>portion</b> of the land needed: +Cash compensation is at replacement cost; +Cash compensation for affected tree at replacement cost; and +AH will be given sufficient time to harvest crops on their subjected property <b>+If falling in one of the categories of vulnerability,</b> cash assistance of \$150 for each AH without repeating.
			AHs <b>without</b> acceptable proof of ownership, including lessees	Not applicable
		Severe impact  22 AHs	Owners <b>with</b> acceptable (recognized) proof of ownership	+Cash compensation at replacement cost for the entire land losses, or land-to-land with secure tenure; +AH will be given sufficient time to harvest crops on their subjected property <b>+Allowance and income restoration:</b> (i) cash assistance of \$150; (ii) the income restoration to be provided by the Project component 3; <b>+If falling in one of the categories of vulnerability,</b> Cash assistance of \$150 for each AH without repeating.
			AHs without acceptable proof of ownership, including lessees Nil	Not applicable
6.	Trees  58 AHs	All types  249 trees	Owner or person with customary usage rights	+ Annual Crops: AHs will be given two months notice that the land on which their crops are planted will be damaged or used by the subproject and that they must harvest their crops in time; + Cash compensation for loss of crops at annual produce replacement cost; + Perennial Crops and Trees: AHs will be compensated for the loss of fruit and timber trees at replacement cost. The value will be calculated as the annual produce value multiplied by a 1 to 8 years factor, depending type of tree to yield.

### 3.5.4 Socio-Economic Profile

#### Demography:

180. The average household size is 4.2 per household. The DMS data indicates that 6% of household heads are below 30 years old. However, 23% of households have more than 5 people in the household because of extended family typically including aging parents and/or one or two adult children's spouses and children.

181. There are 51% women, slightly more than men. About 11% of affected households are headed by women, and of these, 3% are less than 30 years old. 34% of the total population is below 20 years old, thus indicating there will be a good labor supply for their families, communities, and surrounding regions.

#### Poverty:

182. The measurement of household income and expenditure, housing type, assets, agricultural land possession size, number and type of livestock, and their declaration of food shortages indicate the incidence of poverty is about 33% in the sample population (based on \$1.25/person/day), and of this only one family in Prokeab village is considered as extremely

poor, i.e., have income lower than \$14/person/month, inadequate shelter, insufficient land, food deficit for 4-5 months per year or more, and have insufficient income to purchase medicines and clothes. 70% of Women-headed households have income less than \$1.25/person/day and since they experience inadequate labor for agriculture or for other income generation.

183. The data also indicate that 20% of the affected households encounter health problem in their family, which is one of the major factors influencing the family financial crisis. The survey also indicates that 25% of households face food shortage.

#### **Landholding:**

184. The majority of affected lands in the subproject are located in Khach Romeas and Prokeab village (reservoir and command area). On average, AHs hold 2.2 ha of land per household, but there is a wide variance among the households. The most frequently cited reason for poverty was insufficient land for farming and a large family to support. 12% of AHs possess land smaller than 1 ha and 29% own land more than 4 ha. About 59% own agriculture land between 1-4 ha.

#### **Education:**

185. There are different education levels of people in the affected communities. Although almost 100% of the heads of AHs participated in primary school, 12% are illiterate. Socio-economic survey indicates that 95.40% of children in the 6 to 12 year age range have studied in primary school, and 43.76% of children in the 13 to 18 year age range have entered junior high school. Only 12.78% studied in high school.

186. Average distance from home to primary school in Canal No.1 sub-project is approximately 2km, which take about 30 minute for children to walk. However, some children have to walk more than 4km and take them about an hour to come to school.

#### **Health:**

187. Health is one of the main concerns of AHs. According to the survey, 20% of AHs households encounter health issues in their family, of which about 25% mentioned that their health issues are medium and serious for their families as well as unaffordable. In average, AHs in the subproject area have to travel more than 5 km to commune health center.

#### **Situation of Women:**

188. The socio-economic survey indicates that 51% of APs are women and about 80% of adult women are working as rice farmer and the other 20% are working in non agriculture sector. The women are also responsible for taking care of children, house work and other work around their houses such as planting vegetable, raising livestock, etc. The survey also found that young women are also work on non-agricultural sector outside the province, particularly, garment factory worker. For men, only about 25% of adult men are working in non-agricultural sector. That is because of culture, physical and security advantage of man.

#### **Support for the Project:**

189. According to the socio-economic survey, 95% of AHs thinks that the project will benefit them. 73% expect that the project will provide additional water for wet season cropping, while 8% expect additional water for dry season crops. 32% of AHs believe that the project will increase the fish population and become a major source of protein for the community, and 23% consider the project will provide other benefits. There is also a perception that the Project will lead to other supporting activities from NGOs such agricultural

and livestock production skill training with their application providing significant production improvements.

### Attitudes of AHs:

190. The socio-economic survey find out that 90% of AHs prefers cash rather than land-for-land compensation. But if the project provides land-for-land compensation, the criteria is: 1/distance to the new land is within 3 km from the villages, 2/ distance from irrigation is within 1 km, 3/distance from village road is within 1 km and 4/ replacement land is suitable for rice cultivation.

### 3.5.5 Public Participation and Consultation

#### Informing AHs:

191. A Subproject Steering Committee meeting was held on 5 August 2009 at the conference hall of Battambang province chaired by Chairman of Provincial Resettlement Subcommittee (RRS) and deputy governor of Battambang with participation from representatives of Resettlement Department of MEF, Resettlement Unit of MOWRAM, IRC Provincial Working Group and affected commune chiefs. The meeting focused on launching the DMS in Don Aov, Canal No.1 and Chork Reservoir subproject and discussing on the (i) resettlement policy, (ii) public consultations with AHs, and (iii) background of the land usage in the four subprojects of Pursat.

192. Before DMS, on 7 August 2009, the IRC and PRS working group conducted 2 public consultations meeting with potential AHs. The each meeting explains (i) supporting and implementing agencies and agencies charging for DMS, preparing RP, monitoring RP and grievance redress, (ii) benefits of the subproject, (iii) resettlement issues and procedure, (iv) compensation and entitlement, (v) people participation in project, (vi) necessary document for DMS and (vii) open forum for discussion.

193. After the each meeting, Public Information Booklets were distributed to the participants in order to disseminating information on Involuntary Resettlement Policy of ADB, subproject benefits, participation with the project and other relevant information. AH who didn't attend the meeting, would get the Booklets during DMS survey.

#### Focus Group Discussion with AHs:

194. Four Focus Group Discussions with AHs were conducted from 23-24 September 2009 to investigate the impact of the subproject, socio-economic condition, village profile, training need assessment for livelihood restoration, and concern of AHs. The schedule of the meetings is in Table 3-5-7. The content of the discussions during the FGDs are summarized below, and the details for each meeting are provided.

**Table 3-5-7: Record of Focus Group Discussion in Canal No.1**

Time: 15:00 p.m Venue: House of village chief of Kaong Kang village Participation: Mixed Group from Kaok Kang village	
Time: 8:00 a.m Venue: House of village chief of Thmei village Participation: Mixed Group from Thmei village	Time: 8:00 a.m Venue: House of village chief of Prakeap village Participation: Mixed Group from Prakeap village



195. The main occupations of AHs in the subproject are (i) rice farmer, (ii) migrant worker in Thailand, (iii) doing small business in community, (iv) livestock and cattle farming, (v) vegetable farming (vi) fishing, (vii) transportation worker, (viii) running small TV, phone, motorbike and bike cycle repairing-shop, and (ix) skill worker such as carpenter, artisan, etc.

196. Increasing family income from rice farming, migrant working, serving as skill-workers and doing small business in the last five years make AHs living condition better. However, boarder dispute between Cambodia and Thailand, and economic downturn is reducing AH income. Moreover, rehabilitation of commune road and bridge, construction of school building, health center, community drainage, well and toilet also make a major impact on AH living condition. Nevertheless, present of NGOs and micro-credit agencies in region give AHs a good opportunity to get support and access to low interest loan for them to do small business and solve family health issue and housing and agriculture investment.

197. The many AHs are living under national poverty line in the subproject area, and some of them are very poor. The essential reasons of the poverty are because (i) a member of their families falls sick and their family saving is entirely used for health issues, (ii) they don't have land for farming and no job, (iii) they are in debt because of family health, agriculture investment, particularly fertilizer investment and household expenditure, (iv) they have small farm land and large family member, but jobless, (iv) household head are vulnerable person, and (v) agriculture crop are damaged by drought, flood or insect.

198. Problems in agriculture mostly are: (i) lack of irrigation system for rice cultivation in wet and dry season, (ii) fertilizer and insecticide are expensive and unaffordable so some AHs are in debt to fertilizer and insecticide shop with high interest rate, (iii) lack of quality rice seed for cultivation, (iv) lack of agricultural technique, (v) agriculture market are depend on middleman and not stable, (vi) rate and insect destroy rice and (vii) experience flood and drought some time.

199. Small livestock and cattle is one of the main income, protein food, agricultural labor and organic fertilizer source for AHs. Currently, the AHs have experience hardship in raising livestock. The reasons are lack of fodder, particularly cattle since common grassland field was converted to private farm land, high animal food price, no veterinary in the region and low profit because of low selling price. The mood to raise cattle is decreasing as many farmers turn to using hand tractor for farming which are faster, do not need feeding, and can be used to transport agriculture products and to rent to neighborhood farmer.

200. With the project, the groups expect that the project will allow them to double crop (dry and wet season), have water for growing vegetable around their houses, and have more fish for in irrigations scheme.

201. The groups prefer land to cash compensation for who have small affected land and land to land compensation for who have large affected land or landless because they think of difficulty to purchase land and keep compensation money. If they use compensation money to buy land, their prefer location is within few kilometers from village. Most of participants of the meetings plan to use the money to invest in business, agriculture equipment and household demands.

202. Beside compensation, the groups address the need for more support from the project such as training on various suitable agricultural skills and off-farm training such as skill to repair machine, particularly hand tractor, pumping machine and motorbike and beauty make-up skills as well as hair cut. For vulnerable group, the aged-headed household needs health care support, the woman-headed household request to support their agricultural labor, the disable headed household and poor household need credit for business investment. All of them request that the government help to find market for their agriculture product so that they can sell in better price.

### 3.5.6 Implementation Schedule

203. **Table 3-5-8** below provides a proposed implement schedule for the Canal No.1 subproject.

**Table 3-5-8: Implementation Schedule for RP of Canal No.1**

Activity	2009	2010											
	Q4	Q1			Q2			Q3			Q4		
Approval of RP by IRC & ADB	X												
Notice to Proceed with implementation	X												
Final disclosure/concurrence of AHs	X												
Vouchering	X												
Delivery of compensation /entitlements	X												
Agriculture training activities*		X	X	X	X	X	X	X	X	X	X	X	X
Internal & external monitoring	X	X	X	X	X	X	X	X	X	X			
External Monitoring	X			X			X			X			X
Submit compliance both internal and external monitoring report	X	X	X	X	X	X	X	X	X	X			
Evaluate RP implementation											X	X	X
Additional resettlement measures											X	X	X
Submission of RP Completion report										X			
Approval of RP Completion report											X		

\* : the activities are to train AHs in the agriculture extension in component 3 of the NWISP.

### 3.5.7 Costs and Budget

#### Procedures for Flow of Funds

204. The IRC will request the Ministry of Economic and Finance (MEF) for funding for the implementation of the RP3. The funds will be forwarded to the Provincial Departments of Economy and Finance. Payment vouchers will be prepared at the Provincial Department of Economy and Finance with coordination of IRC-WG and PRSC-WG. Payment of compensation and other entitlements as described in Chapter 3 of the RP3 will be given in cash and will be distributed in village offices. The AHs will be notified through the village chiefs of the schedule of payment of compensation and other entitlements.

#### Compensation and Contingency Costs

205. The cost estimates for the implementation of the RP3 also include a provision for contingencies equivalent to 15% of the base cost of resettlement. MOWRAM and IRC will ensure that adequate funds are made available as and when necessary for the efficient and timely implementation of the resettlement activities.

#### Estimate of Resettlement Costs

206. The overall estimated costs excluding administration costs are shown in Table 3-5-9 below.

**Table 3-5-9: Estimated Costs for Implementation of the RP of Canal No.1**

No.	Compensation Items	Unit	Rate \$	Quantity	Cost \$
<b>I</b>	<b>Compensation for Structures</b>				
1	Residential Structure "Type 1"	m <sup>2</sup>	20	255.91	5,118.20
2	Residential Structure "Type 2"	m <sup>2</sup>	35	74.61	2,611.35

RP of Ta Saom, Kork Thnong, Don Aov, Canal No.1 & Chork Reservoir Subprojects

3	Residential Structure "Type 3"	m <sup>2</sup>	79	50	3,950.00
4	Shop-house	m <sup>2</sup>	35	114.87	4,020.45
5	Kitchen	m <sup>2</sup>	20	62.25	1,245.00
6	Toilette	m <sup>2</sup>	35	21.4	749.00
7	Shop	m <sup>2</sup>	28	108.47	3,037.16
8	Stall	m <sup>2</sup>	5	26.8	134.00
9	Rice bin	m <sup>2</sup>	28	13.5	378.00
10	Chicken and pig pen	m <sup>2</sup>	6	15.19	91.14
11	Wooden fence	m	3.8	87	330.60
	<b>Sub-Total (1)</b>				<b>21,664.90</b>
<b>II</b>	<b>Compensation for Land</b>				
1	Rice land	m <sup>2</sup>	0.3	220,883.43	66,265.03
2	Chamkar land	m <sup>2</sup>	0.7	464	324.80
3	Residential land type 1	m <sup>2</sup>	13	300	3,900.00
4	Residential land type 2	m <sup>2</sup>	3.5	590.35	2,066.23
	<b>Sub-Total (2)</b>				<b>72,556.05</b>
<b>III</b>	<b>Compensation for Tree</b>				
1	Mango	Tree	28.5	42	1,197.00
2	Sugar palm	Tree	25	43	1,075.00
3	Coconut	Tree	30	2	60.00
4	Teuk Doh Kor	Tree	28	2	56.00
5	Bamboo	Thicket	8.55	29	247.95
6	Jambolan	Tree	8	60	480.00
7	Papaya	Tree	3.4	13	44.20
8	Custard apple	Tree	5	1	5.00
9	Banana	Clump	6	11	66.00
10	Tamarind	Tree	25	10	250.00
11	Kraseing	Tree	10	2	20.00
12	Others	Tree	5	34	170.00
	<b>Sub-Total (3)</b>			<b>249</b>	<b>3,671.15</b>
<b>IV</b>	<b>Allowances and assistance</b>				
1	Vulnerable Group AH allowance	AH	150	112	16,800.00
2	Ahs of loss > 10% of their productive land	AH	150	22	3,300.00
3	Allowance for transportation	AH	60	15	900.00
4	Living Assistance during transition period	AH	25	15	375.00
	<b>Sub-Total (4)</b>				<b>21,375.00</b>
<b>V</b>	<b>Prepare land for relocation site</b>				
1	Prepare land for landless AHs (Details in Table 3.5.10)	AH		12	21,970.00
	<b>Sub-Total (5)</b>				<b>21,970.00</b>
	<b>Total Base Cost (sum 1-5 above)</b>				<b>141,237.10</b>
	<b>Contingencies (15%)</b>				<b>21,185.57</b>
	<b>Grand Total</b>				<b>162,422.67</b>

**Table 3.5.10:** Resettlement Site for Canal No 1

No	Discription	Unit	Unit Rates In USD	Quanity	Total in USD
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1	Land	M2	3.5	2000	7000
2	Land clearing	M2	1	2000	2000
3	land fill	M3	2	1000	2000
4	Drainage Pipe	M	5	84	420
5	Toilets	1	260	12	3120
6	Access road	M2	8.9	700	6230
7	Standard Pump Well	1	1200	1	1200
<b>Total</b>					<b>21970</b>

### 3.6 RESULTS OF CHORK RESERVOIR SUBPROJECT

#### 3.6.1 Results of the Detailed Measurement Survey

207. The Detail Measurement Survey (DMS) was conducted in August to September 2009 after public dissemination meeting at Battambang municipality and a meeting between affected villages and AHs and non-AHs. The meetings were to explain about the project, its beneficiary, DMS process, entitlements, compensation, etc to village leaders and AHs. The result of DMS indicated that there are 214 AHs affected by the subproject with affected assets of structures, lands, trees, and vulnerable groups. The detailed impact is shown below and summarized in **Table 3-6-6**: a Matrix of Entitlements of Chork Reservoir.

#### Impact on Agricultural and Residential Land:

208. According to the DMS, a total of 107,715.16m<sup>2</sup> of rice land, 612.95m<sup>2</sup> of Chamkar and 596.62m<sup>2</sup> of residential land will be acquired for the subproject belonging to 173 rice land holders, 5 Chamkar land holders and 8 residential land holders respectively. All AHs will be partially affected on their rice, Chamkar and residential land. Of 177 AHs (173 affected rice land holders and 5 affected Chamkar land holders), there are no AH losing productive land of more than 10% of their total holding productive land.

209. Totally, the subproject affects on rice, Chamkar and residential land occupied by 183 AHs in 7 villages, Boeng Pring, Dop Krasang, Prean Nil, Stueng Chork, Chork Thum, Chork Touch, Srae Ou of Prey Touch and Kakaoh communes, Mong Reusey district (**Tab. 3-6-1**).

210. The affected Chamkar lands which are affected by three Secondary Canals (SC), SC2, SC6, and SC7 and Secondary Drain 5 is located next to residential land of Prean Nil and Chork Thum villages and is used for vegetable and fruit tree cultivation and it could also be developed to residential land in the future for their family members.

211. The DMS report showed that the construction of Secondary Drain 2 of the subproject will make 6 AHs to displace to a new site. They will be provided a residential land plot of 105m<sup>2</sup> (7m x 15m) at a resettlement site near their existing place with basic infrastructures such as access road, toilets and well. The budget for this resettlement site is indicated in **Table 3.6.10**. The AH is in Prean Nil village and don't have alternative residential land to live. The entitlement of the AH is indicated in **Table 3-6-6**.

**Table 3-6-1: Impact on Agricultural and Residential Land in Chork Reservoir**

Commune Name	Prey Touch				Kakaoh			TOTAL
Village Name	Boeng Pring	Dop Krasang	Prean Nil	Stueng Chork	Chork Thum	Chork Touch	Srae Ou	
AHs	4	24	76	5	62	1	11	<b>183</b>
Total Affected People	22	145	328	23	312	5	61	<b>896</b>

Affected Land and Area m <sup>2</sup>								
Rice land	1,023.95	10,694.73	34,234.04	2,824.73	50,007.71	137.00	8,793.00	<b>107,715.16</b>
Chamkar land	-	-	219.00	-	393.95	-	-	<b>612.95</b>
Residential land	-	-	428.62	-	168.00	-	-	<b>596.62</b>

### Impact on Structures:

212. The construction of the subproject will totally affect 43 structures belonging to 31 AHs. Of 43 affected structures, there are 16 residential structures, a community rest hall, 3 kitchen, 3 shop and rice bin, 8 vendor stalls, 8 stables for cattle, 1 concrete slab, and 3 well (**Tab. 3-6-4**).

**Table 3-6-2: Impact on Structures and other assets in Chork Reservoir**

Commune	Prean Nil		Chork Thum		Total AH Incidence	Total Quantity
Village	AH	Quantity	AH	Quantity		
Affected Structure						
Residential Structure "Type 1"	7	122.86m <sup>2</sup>	6	127.72m <sup>2</sup>	13	250.58m <sup>2</sup>
Residential Structure "Type 2"	2	55.44m <sup>2</sup>	-	-	2	55.44m <sup>2</sup>
Shop-house	1	18.48m <sup>2</sup>	-	-	1	18.48m <sup>2</sup>
Community rest stall	-	-	1	34.22m <sup>2</sup>	1	34.22m <sup>2</sup>
Kitchen	2	17.92m <sup>2</sup>	1	16.00m <sup>2</sup>	3	33.92m <sup>2</sup>
Shop, rice bin	3	64.56m <sup>2</sup>	-	-	3	64.56m <sup>2</sup>
Stall	7	90.48m <sup>2</sup>	1	10.64m <sup>2</sup>	8	101.12m <sup>2</sup>
Stable for cattle	8	196.95m <sup>2</sup>	-	-	8	196.95m <sup>2</sup>
Concrete slab	-	-	1	5.00m <sup>2</sup>	1	5.00m <sup>2</sup>
Pump well	1	1 well	-	-	1	1 well
Concrete pipe well	2	2 wells	-	-	2	2 wells
Total AH Incidence	33	-	10	-	43	-
Total AH	24	-	7	-	31	-

### Impact on Trees:

213. In total, the constructions of the structures, canals and dams of the subproject affect on 422 trees belonging to 54 AHs in 3 villages, Prean Nil, Chork Thum and Srae Ou (**Tab. 3-6-3**). Among the 3 affected villages, Chork Thum has the highest number of affected trees, 273 trees of 30 AHs, Prean Nil is in the second rank, having 145 affected trees of 22 AHs and Srae Ou has 4 affected trees of 2 AHs (**Tab. 3-6-3**).

214. Of 422 affected trees; there are 12 categories of trees such as mango, sugar palm, coconut, cashew, guava, bamboo, jambolan, grapefruit, banana, tamarind, Krasing and other non-fruit trees. Among affected trees, sugar palm is the most affected trees then jambolan, bamboo, Krasing, banana, mango, tamarind, guava and other non-fruit trees have medium affected and the other trees have small affected number.

215. However, the essential productive trees in the subproject are mango, coconut, bamboo and tamarind because it can contribute to family livelihood. Sugar palm is not an important tree in the affected villages, since sugar production from palm juice is not the culture of villagers in the subproject area. Moreover, there is lack of fire wood as raw material for sugar production and production of the sugar from palm need labor intensive.

**Table 3-6-3: Loss of Trees in Chork Reservoir**

Commune Name	Prey Touch				Kakaoh			TOTAL
Village Name	Boeng Pring	Dop Krasang	Prean Nil	Stueng Chork	Chork Thum	Chork Touch	Srae Ou	
AHs	-	-	22	-	30	-	2	<b>54</b>
Total Affected Trees	-	-	145	-	273	-	4	<b>422</b>
Name and Number of Affected Trees								
Mango	-	-	3	-	23	-	-	<b>26</b>
Sugar Palm	-	-	51	-	73	-	-	<b>124</b>
Coconut	-	-	3	-	5	-	-	<b>8</b>
Cashew	-	-	7	-	-	-	-	<b>7</b>
Guava	-	-	11	-	10	-	-	<b>21</b>
Bamboo	-	-	10	-	40	-	-	<b>50</b>
Jumbolan	-	-	14	-	37	-	1	<b>52</b>
Grapefruit	-	-		-	2	-	-	<b>2</b>
Banana	-	-	29	-	5	-	-	<b>34</b>
Tamarind	-	-	2	-	21	-	-	<b>23</b>
Krasang	-	-	-	-	38	-	1	<b>39</b>
Others	-	-	15	-	19	-	2	<b>36</b>

**Impact on Vulnerable Groups:**

216. According to DMS data, a total of 61 vulnerable AHs have been identified from the total of 69 vulnerable group incidences in the subproject. They are ranked as vulnerable for at least one of the following reasons: they are woman-headed, aged-headed, disabled-headed, and/or with a monthly household income below the national poverty line (\$14/month). Many of the AHs are ranked as vulnerable for more than one of the above reasons, in this case we have listed them in the figures shown in **Table 3-6-4** below. Aged-headed and woman-headed AHs are covered about 91% of the total vulnerable household incidences.

217. In total, the subproject will impact on 61 vulnerable AHs, although there is a total of 69 incidences of vulnerability. The vulnerable AHs that have one or more incidences of vulnerability will receive an allowance of \$150 per household. The allowance is to reduce their impoverishment risks and assist them to improve their living condition during the resettlement and be advantageous from the project.

**Table 3-6-4: Impact on Vulnerable Groups in Chork Reservoir**

RP of Ta Saom, Kork Thnong, Don Aov, Canal No.1 & Chork Reservoir Subprojects

Commune Name	Prey Touch				Kakaoh			Total Incident of Vulnerable Group
Village Name	Boeng Pring	Dop Krasang	Prean Nil	Stueng Chork	Chork Thum	Chork Touch	Srae Ou	
Affected Vulnerable Groups								
Woman-headed AH	-	4	7	-	8	-	3	22
Aged-headed AH	-	4	16	-	20	-	1	41
Disabled-headed AH	-	-	5	-	1	-	-	6
Income below US\$14/mth	-	-	-	-	-	-	-	-
Total Incident of Vulnerable Group	-	8	28	-	29	-	4	69
Total Vulnerable AH	-	7	25	-	25	-	4	61

Summary of Impact on Affected Households:

218. Table 3-6-5 below provides a summary of impact for the Chork Reservoir subproject.

**Table 3-6-5: Summary of Project Impact in Chork Reservoir**

No.	Type of Impact	Unit	AH Incidence	Total Quantity	Remark
<b>I</b>	<b>Structure</b>				
1	Residential Structure "Type 1"	m <sup>2</sup>	13	250.58	
2	Residential Structure "Type 2"	m <sup>2</sup>	2	55.44	
3	Shop-house	m <sup>2</sup>	1	18.48	
4	Community rest stall	m <sup>2</sup>	1	34.22	
5	Kitchen	m <sup>2</sup>	3	33.92	
6	Shop, rice bin	m <sup>2</sup>	3	64.56	
7	Stall	m <sup>2</sup>	8	101.12	
8	Stable for cattle	m <sup>2</sup>	8	196.95	
9	Concrete slab	m <sup>2</sup>	1	5.00	
10	Pump well	well	1	1	
11	Concrete pipe well	well	2	2	
<b>II</b>	<b>Land</b>				
1	Rice land	m <sup>2</sup>	173	107,715.16	
2	Chamkar land	m <sup>2</sup>	5	612.95	
3	Residential land	m <sup>2</sup>	8	596.62	
4	Landless AH	AH	6	6	
<b>III</b>	<b>Tree</b>				
1	Mango	tree	8	26	
2	Sugar Palm	tree	17	124	
3	Coconut	tree	5	8	
4	Cashew	tree	3	7	
5	Guava	tree	7	21	
6	Bamboo	thicket	14	50	
7	Jumbolan	tree	20	52	
8	Grapefruit	tree	1	2	
9	Banana	clump	6	34	
10	Tamarind	tree	13	23	
11	Krasang	tree	13	39	

12	Others	tree	19	36	
<b>IV</b>	<b>Vulnerable Group</b>				
1	Vulnerable Group	AH	61	61	

### 3.6.2 Basics of Unit Cost Used in Calculating Compensation

219. The replacement cost for residential land, productive agricultural land, trees and structures is calculated based on the price in neighboring regions and local markets in Chork Reservoir subproject area. This price survey responding to the agreed policy on compensation rates between the government and ADB. Based on this policy, an independent local consultant was engaged by IRC to conduct a replacement cost study in the affected area to establish the compensation rates for affected assets.

220. The survey was conducted in October 2009 with existing owners of land and tree, 30 AHs and 30 non-AHs, in 2 FGD meetings, with 4 village leaders, 4 carpenters groups, 5 vegetable vendors and 4 construction material shop-owners. This allowed a comprehensive study of land prices (residential, rice and Chamkar land), and tree prices, labor cost, and house and other structure valuation surrounding Chork Reservoir region. The discussion below focuses on compensation rates for the relevant affected properties. The detailed compensation rates for affected assets are shown in Appendix 6 of this RP3.

### 3.6.3 Detailed Compensation and Other Entitlements

221. The implementation of Chork Reservoir subproject will result in the acquisition of lands, trees, and structures as described in Section 3-6. AHs will be compensated according to the resettlement policy and principles set out in Chapter 2 of this RP. Table 3-6-6 outlines the compensation and entitlements for each category of AHs.

**Table 3-6-6: Entitlement Matrix of Chork Reservoir**

No.	Type of Impact	Application	Entitled Person	Entitlements
1.	Structures  31 AHs	-15 residential structures, -1 shop-house, -1 community rest hall,	Owner or person with customary usage rights	+Cash compensation of part or entire structures will be based on replacement cost of construction materials and labor without considering deprivation and salvage materials after demolishing the structures; +AH will be given sufficient time, 15 days, to deconstruct their subjected property; and <b>Allowances:</b> +Cash assistance of <b>\$60</b> for transportation allowance will be provided to 15 AHs of 15 affected houses and shop-house; +Cash assistance of <b>\$25</b> (or 20Kg of rice per AH per month) for living assistance during transition period will be provided to 4 AHs of 4 affected houses; and <b>+If falling in one of the categories of vulnerability</b> , cash assistance of <b>\$150</b> for each category the AH belongs without repeating;
		-3 kitchen, -3 shop & rice bin, -8 stalls, -8 stables for cattle, - 1 concrete slab -1 pump well -2 concret pipe well	Owner or person with customary usage rights	+Cash compensation of part or entire structures will be based on replacement cost of construction materials and labor without considering deprivation and salvage materials after demolishing the structures; +AH will be given sufficient time, 15 days, to deconstruct their subjected property; and <b>+If falling in one of the categories of vulnerability</b> , cash assistance of <b>\$150</b> for each category the AH belongs without repeating;



2.	Residential Land  8 AHs	8 affected residential plots	Owner or person with customary usage rights	For the <b>portion</b> of the land needed: +Cash compensation at replacement cost; +Compensation for affected structures or trees at replacement cost; +AH will be given sufficient time to harvest crops and 15 days to deconstruct structures on their subjected property; <b>+If falling in one of the categories of vulnerability,</b> cash assistance of \$150 for each AH without repeating.
3.	Landless  6 AHs	Landless	Owner or person with customary usage rights	+AH will be given sufficient time to harvest crops and 15 days to deconstruct structures on their subjected property; There are two relocation options for 10 AHs: b. Cash assistance for them to arrange relocation by themselves b. Receive a land plot of 7m x 15m of residential land for each AH in relocation site with basic infrastructure support such as road, toilet, wells and electricity <sup>4</sup> ;
4.	Chamkar Land  5 AHs	5 affected Chamkar plots	Owner or person with customary usage rights	For the <b>portion</b> of the affected land: +Cash compensation at replacement cost; +Compensation for affected structures or trees at replacement cost; +AH will be given sufficient time to harvest crops and 15 days to deconstruct structures on their subjected property; <b>+If falling in one of the categories of vulnerability,</b> cash assistance of \$150 for each AH without repeating.
5.	Riceland  173 AHs	Marginal impact  173 AHs	Owners <b>with</b> acceptable (recognized) proof of ownership	For the <b>portion</b> of the land needed: +Cash compensation is at replacement cost; +Cash compensation for affected tree at replacement cost; and +AH will be given sufficient time to harvest crops on their subjected property <b>+If falling in one of the categories of vulnerability,</b> cash assistance of \$150 for each AH without repeating.
			AHs <b>without</b> acceptable proof of ownership, Including lessees	Not applicable
6.	Trees  54 AHs	All types  422 trees	Owner or person with customary usage rights	+ Annual Crops: AHs will be given two months notice that the land on which their crops are planted will be damaged or used by the subproject and that they must harvest their crops in time; + Cash compensation for loss of crops at annual produce replacement cost; + Perennial Crops and Trees: AHs will be compensated for the loss of fruit and timber trees at replacement cost. The value will be calculated as the annual produce value multiplied by a 1 to 8 years factor, depending type of tree to yield.

### 3.6.4 Socio-Economic Profile

#### Demography:

222. The average household size is 4.9 per household. The DMS data indicates that 17% of household heads are below 30 years old. However, 28% of households have more than 6 people in the household because of extended family typically including aging parents and/or one or two adult children's spouses and children.

223. There are 56% women, slightly more than men. About 10% of affected households are headed by women, and of these, 5% are less than 30 years old. This indicates a low rate of separation or divorce. 37% of the total population is below 20 years old, thus indicating there will be a good labor supply for their families, communities, and surrounding regions.

<sup>4</sup> If available at the local area and available of local transmission line

### **Poverty:**

224. The measurement of household income and expenditure, housing type, assets, agricultural land possession size, number and type of livestock, and their declaration of food shortages indicate the incidence of poverty is about 38% in the sample population (based on \$1.25/person/day). About 65% of Women-headed households have income less than \$1.25/person/day and since they experience inadequate labor for agriculture or for other income generation.

225. The data also indicate 13% of the affected households encounter health issues in their family, which is one of the major factors influencing the family financial crisis. The survey also indicates that 40% of households face food shortage.

### **Landholding:**

226. The majority of affected lands in the subproject are located in Chork Thum, Sre O, and Prean Nil villages (both in reservoir and in command area). On average, AHs hold 6.4 ha of land per household, but there is a wide variance among the households. The most frequently cited reason for poverty was insufficient land for farming and a large family to support. 7% of AHs possess land less than 1 ha and 49% own land more than 4 ha. Other 44% own agriculture land between 1-3 ha.

### **Education:**

227. There are different education levels of people in the affected communities. Although almost 100% of the heads of AHs participated in primary school, 16% are illiterate. Socio-economic survey indicates that 95% of children in the 6 to 12 year age range have studied in primary school, and 43.58% of children in the 13 to 18 year age range have entered junior high school. Only 12.63% studied in high school.

228. Average distance from home to primary school in Chork sub-project is approximately 2km, which take 30 minute for children to walk. However, some children have to walk about an hour to school as their house located about 3-5km.

### **Health:**

229. Health is one of the main concerns of AHs. According to the survey, 13% of AHs households encounter health issues in their family, of which about 25% mentioned that their health issues are medium and serious for their families as well as unaffordable. AHs in Chork reservoir have to walk within 6km to commune health center.

### **Situation of Women:**

230. The socio-economic survey indicates that 56% of APs are women and 80% of adult women are working as rice farmer and the other 20% are working in non agriculture sector. The women are also responsible for taking care of children, house work and other work around their houses such as planting vegetable, raising livestock, etc. The survey also found that young women are also go to outside of the province to work on non-agricultural sector, particularly, garment factory worker. For men, only about 25% of adult men are working in non-agricultural sector. That is because of culture, physical and security advantage of man.

### **Support for the Project:**

231. According to the socio-economic survey, almost 90% of AHs thinks that the project will benefit them. Besides, providing sufficient water in wet seasons, 53% of total AHs expects that the project will provide additional water for dry season cropping. 25% of AHs believe that the project will provide fish sources for the community and 8% consider the

project will provide other benefits. There is also a perception that the Project will lead to other supporting activities from NGOs such agricultural and livestock production skill training with their application providing significant production improvements.

### Attitudes of AHs:

232. The socio-economic survey find out that 94% of AHs prefers cash rather than land-for-land compensation. But if the project provides land-for-land compensation, the criteria is: 1/distance to the new land is within 3 km from the villages, 2/ distance from irrigation is within 1 km, 3/distance from village road is within 1 km and 4/ replacement land is suitable for rice cultivation.

### 3.6.5 Public Participation and Consultation

#### Informing AHs:

233. A Subproject Steering Committee meeting was held on 5 August 2009 at the conference hall of Battambang province chaired by Chairman of Provincial Resettlement Subcommittee (RRS) and deputy governor of Battambang with participation from representatives of Resettlement Department of MEF, Resettlement Unit of MOWRAM, IRC Provincial Working Group and affected commune chiefs. The meeting focused on launching the DMS in Don Aov, Canal No.1 and Chork Reservoir subproject and discussing on the (i) resettlement policy, (ii) public consultations with AHs, and (iii) background of the land usage in the four subprojects of Pursat.

234. Before DMS, on 11 June 2009, the IRC and PRS working group conducted 3 public consultations meeting with potential AHs. The each meeting explains (i) supporting and implementing agencies and agencies charging for DMS, preparing RP, monitoring RP and grievance redress, (ii) benefits of the subproject, (iii) resettlement issues and procedure, (iv) compensation and entitlement, (v) people participation in project, (vi) necessary document for DMS and (vii) open forum for discussion.

235. After the each meeting, Public Information Booklets were distributed to the participants in order to disseminating information on Involuntary Resettlement Policy of ADB, subproject benefits, participation with the project and other relevant information. AH who didn't attend the meeting, would get the Booklets during DMS survey.

#### Focus Group Discussion with AHs:

236. Two Focus Group Discussions with AHs were conducted on 07 October 2009 to investigate the impact of the subproject, socio-economic condition, village profile, training need assessment for livelihood restoration, and concern of AHs. The schedule of the meetings is in Table 3-6-7. The content of the discussions during the FGDs are summarized below, and the details for each meeting are provided.

**Table 3-6-7: Record of Focus Group Discussion in Chork Reservoir**

Wednesday, 07 October 2009	Wednesday, 07 October 2009
Time: 9:00 a.m Venue: Prean Nil village ceremony hall Participation: Mixed Group from Preanil village	Time: 2:00 a.m Venue: Chork Thum pagoda Participation: Mixed Group from Chork Thum, and other villages

237. The main occupations of AHs in the subproject are (i) rice farmer, (ii) migrant worker in Thailand, (iii) doing small business in community, (iv) livestock and cattle farming, (v) vegetable farming (vi) fishing, (vii) transportation worker, (viii) running small TV, phone, motorbike and bike cycle repairing-shop, and (ix) skill worker such as carpenter, artisan etc.

238. Increasing family income from rice farming, migrant working, serving as skill-workers and doing small business in the last five years make AHs living condition better. Moreover, rehabilitation of commune road and bridge, construction of school building, health center, community drainage, well and toilet also make a major impact on AH living condition. Nevertheless, present of NGOs and micro-credit agencies in region give AHs a good opportunity to get support and access to low interest loan for them to do small business and solve family health issue and housing and agriculture investment.

239. The many AHs are living under national poverty line in the subproject area, and some of them are very poor. The essential reasons of the poverty are because (i) a member of their families falls sick and their family saving is entirely used for health issues, (ii) they don't have land for farming and no job, (iii) they are in debt because of family health, agriculture investment, particularly fertilizer investment and household expenditure, (iv) they have small farm land and large family member, but jobless, (iv) household head are vulnerable person, and (v) agriculture crop are damaged by drought, flood or insect.

240. Problems in agriculture mostly are: (i) lack of irrigation system for rice cultivation in wet and dry season, (ii) fertilizer and insecticide are expensive and unaffordable so some AHs are in debt to fertilizer and insecticide shop with high interest rate, (iii) lack of quality rice seed for cultivation, (iv) lack of agricultural technique, (v) agriculture market are depend on middleman and not stable, (vi) rate and insect destroy rice and (vii) experience flood and drought some time.

241. Small livestock and cattle is one of the main income, protein food, agricultural labor and organic fertilizer source for AHs. Currently, the AHs have experience hardship in raising livestock. The reasons are lack of fodder, particularly cattle since common grassland field was converted to private farm land, high animal food price, no veterinary in the region and low profit because of low selling price. The mood to raise cattle is decreasing as many farmers turn to using hand tractor for farming which are faster, do not need feeding, and can be used to transport agriculture products and to rent to neighborhood farmer.

242. With the project, the groups expect that the project will allow them to double crop (dry and wet season), have water for growing vegetable around their houses, and have more fish for in irrigations scheme.

243. The groups prefer land to cash compensation for who have small affected land and land to land compensation for who have large affected land or landless because they think of difficulty to purchase land and keep compensation money. If they use compensation money to buy land, their prefer location is within few kilometers from village. Most of participants of the meetings plan to use the money to invest in business, agriculture equipment and household demands.

244. Beside compensation, the groups address the need for more support from the project such as training on various suitable agricultural skills and off-farm training such as skill to repair machine, particularly hand tractor, pumping machine and motorbike and beauty make-up skills as well as hair cut. For vulnerable group, the aged-headed household needs health care support, the woman-headed household request to support their agricultural labor, the disable headed household and poor household need credit for business investment. All of them request that the government help to find market for their agriculture product so that they can sell in better price.

### **3.6.6 Implementation Schedule**

245. Table 3-6-8 below provides a proposed implement schedule for the Chork Reservoir subproject.

**Table 3-6-8: Implementation Schedule for Chork Reservoir**

Activity	2009	2010											
	Q4	Q1			Q2			Q3			Q4		
Approval of RP by IRC & ADB	X												
Notice to Proceed with implementation	X												
Final disclosure/concurrence of AHs	X												
Vouchering	X												
Delivery of compensation /entitlements	X												
Agriculture training activities*		X	X	X	X	X	X	X	X	X	X	X	X
Internal & external monitoring	X	X	X	X	X	X	X	X	X	X			
External monitoring	X	X			X			X			X		
Submit compliance both external and internal monitoring report	X	X	X	X	X	X	X	X	X	X			
Evaluate RP implementation											X	X	X
Additional resettlement measures											X	X	X
Submission of RP Completion report									X				
Approval of RP Completion report											X		

\* : the activities are to train AHs in the agriculture extension in component 3 of the NWISP.

### 3.6.7 Costs and Budget

#### Procedures for Flow of Funds

246. The IRC will request the Ministry of Economic and Finance (MEF) for funding for the implementation of the RP. The funds will be forwarded to the Provincial Departments of Finance. Payment vouchers will be prepared at the Provincial Department of Finance. Payment of compensation and other entitlements as described in Chapter 3 of the RP will be given in cash and will be distributed in village offices. The AHs will be notified through the village chiefs of the schedule of payment of compensation and other entitlements.

#### Comepnasation and Contingency Costs

247. The cost estimates for the implementation of the RP3 also include a provision for contingencies equivalent to 15% of the base cost of resettlement. MOWRAM and IRC will ensure that adequate funds are made available as and when necessary for the efficient and timely implementation of the resettlement activities.

#### Estimate of Resettlement Costs

248. The overall estimated costs excluding administration costs are shown in Table 3-6-9 below.

**Table 3-6-9: Estimated Costs for Implementation of the RP of Chork Reservoir**

No.	Compensation Items	Unit	Rate \$	Quantity	Cost \$
<b>I</b>	<b>Compensation for Structures</b>				
1	Residential Structure "Type 1"	m <sup>2</sup>	20	250.58	5,011.60
2	Residential Structure "Type 2"	m <sup>2</sup>	35	55.44	1,940.40
3	Shop-house	m <sup>2</sup>	35	18.48	646.80
4	Community rest stall	m <sup>2</sup>	60	34.22	2,053.20
5	Kitchen	m <sup>2</sup>	20	33.92	678.40
6	Shop, rice bin	m <sup>2</sup>	28	64.56	1,807.68
7	Stall	m <sup>2</sup>	5	101.12	505.60
8	Stable for cattle	m <sup>2</sup>	6	196.95	1,181.70

RP of Ta Saom, Kork Thnong, Don Aov, Canal No.1 & Chork Reservoir Subprojects

9	Concrete slab	m <sup>2</sup>	10	5	50.00
10	Pump well	well	800	1	800.00
11	Concrete pipe well	well	420	2	840.00
	<b>Sub-Total (1)</b>				<b>15,515.38</b>
<b>II</b>	<b>Compensation for Land</b>				
1	Rice land	m <sup>2</sup>	0.31	107,715.16	33,391.70
2	Chamkar land	m <sup>2</sup>	0.65	612.95	398.42
3	Residential land	m <sup>2</sup>	1.08	596.62	644.35
	<b>Sub-Total (2)</b>				<b>34,434.47</b>
<b>III</b>	<b>Compensation for Tree</b>				
1	Mango	Tree	28.6	26	743.60
2	Sugar Palm	Tree	25	124	3,100.00
3	Coconut	Tree	27	8	216.00
4	Cashew	Tree	9	7	63.00
5	Guava	Tree	3.6	21	75.60
6	Bamboo	Thicket	10	50	500.00
7	Jumbolan	Tree	8.1	52	421.20
8	Grapefruit	Tree	28.2	2	56.40
9	Banana	Clump	4.73	34	160.82
10	Tamarind	Tree	25	23	575.00
11	Krasang	Tree	10	39	390.00
12	Others	Tree	5	36	180.00
	<b>Sub-Total (3)</b>			<b>422</b>	<b>6,481.62</b>
<b>IV</b>	<b>Allowances and assistance</b>				
1	Vulnerable Group AH allowance	AH	150	61	9,150.00
2	Allowance for transportation	AH	60	17	1,020.00
3	Living Assistance during transition period	AH	25	17	425.00
	<b>Sub-Total (4)</b>				<b>10,595.00</b>
<b>V</b>	<b>Prepare land for relocation site</b>				
1	Prepare land for landless AHs (Details in Table 3.6.10)	AH		6	9,200.00
	<b>Sub-Total (5)</b>				<b>9,200.00</b>
	<b>Total Base Cost (sum 1-5 above)</b>				<b>76,226.47</b>
	<b>Contingencies (15%)</b>				<b>11,433.97</b>
	<b>Grand Total</b>				<b>87,660.44</b>

**Table 3.6.10:** Resettlement Site for CHORK reservoir

No	Discription	Unit	Unit Rates In SUD	Quantity	Total in USD
1	Land	m2	1.08	1000	1080
2	Land clearing	m2	1	1000	1000
3	land fill	m3	2	500	1000
4	Drainage Pipe	m	5	42	210
5	Toilets	1	260	6	1560
6	Access road	m2	9	350	3150
7	Standard Pump Well	1	1200	1	1200
<b>Total</b>					<b>9200</b>

### 3.7 Total resettlement cost for 5 subprojects

249. This RP3 covers 5 subprojects such as Ta Saom, Kork Thnong, Don Aov, Canal No.1 and Chork Reservoir. As stated earlier, the natures of those five subprojects are different in the context of (1) scope and designs of the subproject construction, (2) subproject locations, and (3) local people preference and behavior. Therefore, the entitlements and resettlement costs for the subprojects are separated, and the total resettlement costs for all 5 subprojects are shown in **Table 3.7.1**.

**Table 3.7.1: Total Resettlement Cost**

No.	Description	Cost US\$
<b>A</b>	<b>Total Resettlement Cost without External Monitoring and Replacement Cost Study</b>	
1	Based Cost for resettlement cost for Ta Saom	12,471.98
2	Based Cost for resettlement cost for Kork Thnong	17,190.57
3	Based Cost for resettlement cost for Don Aov	161,314.87
4	Based Cost for resettlement cost for Canal No.1	162,422.67
5	Based Cost for resettlement cost for Chork Reservoir	87,660.44
<b>Subtotal</b>		<b>441,060.51</b>
<b>B</b>	<b>External Monitoring Cost for the 5 subprojects</b>	<b>65,513.80</b>
<b>C</b>	<b>Cost for Replacement Cost study for the 5 subprojects</b>	<b>11,228.00</b>
<b>Total</b>		<b>517,802.31</b>

## 4 GRIEVANCE REDRESS

### 4.1 Grievance Rights

250. With reference to ADB policy, all AHs have the right to appeal against any aspect of decisions made not in accordance with the RP or with commitments given to them, or if they disagree with the level or manner of compensation, including that for land lost. The main objectives of the grievance procedure aim to provide a mechanism to ensure for accurate and fair compensation and resettlement program alleviation of any adverse effects on AHs, to mediate conflict and to avoid lengthy litigation that is unfair to AHs. However, the complaint process will not be an obstacle to the project implementation. It also provides people a chance to express and resolve their objections or concerns about their compensation or assistance.

### 4.2 Function

251. The functions of the grievance process will be:

- To make all APs aware of the process of the RP and entitlement policy and of the timetable for implementation
- To provide support for the APs being relocated on problems arising out of their adjustment to their new environments
- To record grievances of the APs and categorise and prioritise those grievances that need to be resolved by the Grievance Redress Committee

- d. To report new developments to aggrieved parties and to assist the APs in dealing with these decisions of the Grievance Redress Committee (the GRC will be given the power to resolve all but the most serious of grievances and its decisions will not be contested in any other forum, except in the courts of law).

#### **4.3 Steps Involved**

252. The grievance process must be explained to every AH at the time of the public meetings and consultations and during the delivery of compensation and other entitlements. The process should be as follows:

- (i) First stage: AHs will present their complaints and grievances to the Village or Commune Resettlement Sub-committee or IRC working group and, if he or she wishes, to the nominated NGO working on the GRC. The NGO will record the complaint in writing and accompany the AH to meet the Village or Commune Resettlement Sub-Committee. The Sub-Committee will be obliged to provide immediate written confirmation of receiving the complaint. If after 15 days the aggrieved AH does hear from, or if the AH is not satisfied with the decision taken in the first stage, the complaint may be brought to the District Office.
- (ii) Second stage: The District Office has 15 days within which to resolve the complaint to the satisfaction of all concerned. If the complaint cannot be solved at this stage, the District Office will bring the case to the Provincial Grievance Redress Committee.
- (iii) Third stage: The Provincial Grievance Redress Committee meets with the aggrieved party and tries to resolve the situation. The Committee may ask for a review of the DMS by the external monitor (EM). Within 30 days of the submission of the grievance, the Committee must make a written decision and submit copies to MOWRAM, the EM, the IRC and the AH.
- (iv) Final stage: If the aggrieved AH does not hear from the Provincial Grievance Redress Committee or is not satisfied, he/she will bring the case to Provincial Court. This is the final stage for adjudicating complaints. Within 30 days of the submission of the grievance, the Court must make a written decision and submit copies to MOWRAM, the EM, IRC and the AH. If any party is still unsatisfied with the Provincial Court judgment, he/she can bring the case to a higher-level court.

253. The grievance procedures do not take away the constitutional rights of any AH him or herself to lodge a complaint with the court at the municipal level. This may be followed by subsequent appeals to the court at the provincial level and national level, but the purpose of the grievance procedure is that citizens, particularly people in the municipal and commune/village level, will not need to take their complaints to the formal legal institutions and that most complaints will be settled at the lowest level. AHs will be exempted from all administrative, transfer and legal fees.

254. AHs do not have writing skills and the possibility of being able to express grievances verbally has been considered, however, AHs are encouraged to seek assistance from the EM, other local NGOs or other family members, village heads or community chiefs to write their grievances in paper and to have access to the DMS or other documentation, and to any survey or valuation by the EM, to ensure that where disputes do occur all the details have been recorded accurately enabling all parties to be treated fairly.

#### **4.4 Make up of the Grievance Committee**

255. Provincial Grievance Committee under the Provincial Resettlement Sub-Committee comprise of four permanent members and two local members. The Committee is chaired by the Provincial Governor or his representative and has members from the Provincial Head of the Department of Water Resources, the Provincial Head of the Department of Finance, Justice Department, a member from the external monitoring agency and, on a co-opted basis, one or more local leaders (such as the Village Head or Commune Chairman) familiar with the area and the circumstances of the complaint, one of whom at least should have been



nominated by the AH and briefed to represent him or her. Co-opted members may include any local NGO nominated by the AH and the External Monitor contracted by the IRC. The External Monitor and any local NGO representing the AH may offer advocacy, advice or expert support, but may not vote.

## **5 ORGANIZATIONAL FRAMEWORK**

256. For purposes of resettlement planning and implementation, including the conduct of DMS, consultation with and information to AHs, IRC chaired by MEF has convened a Resettlement Subcommittee – Working Group (PRSC-WG) of each subproject.

257. A Resettlement Unit in MOWRAM (MOWRAM-RU) and Resettlement Department of MEF are responsible for coordinating and managing all aspects of resettlement. MOWRAM-RU is responsible for supporting the PRSC-WG of each subproject and provincial authorities in the conduct of surveys and planning for resettlement in liaison with the IRC, Ministry of Agriculture Forestry and Fishery (MAFF) and MLMUPC. MOWRAM-RU will be responsible for supervising the detailed implementation of the RP on behalf of the Executing Agency. These organizational and management arrangements are applicable to all resettlement activities in the project.

### **5.1 Institutions for Resettlement**

#### **5.1.1 Steering Committee**

258. The Steering Committee of each subproject comprising representatives of MEF, MOWRAM, Ministry of Rural Development (MRD), MAFF, MLMUPC and IRC will supervise all aspects of the subproject including resettlement.

#### **5.1.2 MOWRAM**

259. MOWRAM is responsible for implementing the irrigation and agriculture components of the Project on behalf of the Government of Cambodia. MOWRAM has established a PIU, based in Seam Reap and Battambang, and headed by the Director of PDWRAM as Provincial Project Director of each subproject, to implement the irrigation components.

260. PIU personnel have been appointed to the PRSC-WG operating under the direction of MOWRAM-RU to work with the IRC, PRS and provincial authorities on implementation of the RP to minimize hardship of AHs. MOWRAM-RU will have the following tasks:

- a. consultation with the concerned AH together with the village leader and village development committee to identify and register land, agricultural development requirements and options of individual AHs;
- b. setting of a timetable for land acquisition and resumption of production of the AHs;
- c. identification of support agency, including NGO, PDLMUPC, village and commune chiefs responsible for specific support to the AHs;
- d. reporting to IRC and ADB on numbers, identities and needs of AHs registered for assistance;
- e. liaising with, service provider, NGO and PD AFF to ensure provision of agricultural training and extension to the severely affected households;
- f. liaising with IRC and Provincial Department of Finance (PDF) to ensure timely provision of any compensation to facilitate land acquisition and agricultural production support;
- g. review of options for inclusion in a MOWRAM and PRSC-WG managed agricultural relocation program in areas identified and surveyed by MOWRAM-RU for that purpose;
- h. monitoring of these actions by the EM and reporting on them to the IRC and ADB.

#### **5.1.3 Service Provider managing the Agriculture Training Program**

261. Service provider of component 3 of each subproject provides training on agriculture

technique to AHs for improving their rice production and the severely AHs of each subproject for restoring their livelihood through entitle to demonstration programs and other benefits of agriculture training in component 3 of the subproject. The training program is agriculture extension training in component 3 of the project. Under this program, MOWRAM will assist them in participating the agricultural training, while the service provider of each subproject manages the training.

262. To achieve the aforementioned objective, the service provider will be asked to carry out the following major tasks:

- a. Situational analysis to find out the appropriate training to be provided to the target AP household;
- b. Development of appropriate curriculums for the training of AHs, as required;
- c. Delivery of farmer field training and on-farm demonstration;
- d. Introduction to seed selection and storage;
- e. Organization of self-help group among the AP household beneficiaries; and
- f. Provision of extension and backstop support to the AHs.

#### **5.1.4 Resettlement Subcommittee**

263. A Resettlement Sub-committee (RS) of each subproject was assembled at each provincial level by the IRC, and will be responsible for the following resettlement activities:

- a. Liaising with the RU to carry out the overall implementation of resettlement activities in accordance with the resettlement policies specified in the RP;
- b. Amending or complementing the RP in coordination with concerning government agencies in case of any problems identified by internal and/or external monitoring of RP implementation to ensure that the objectives of the RP are met;
- c. Overall planning of the resettlement programs;
- d. Guiding and supervising the field staff to carry out the verification of inventory, finalization of entitlements, and assessment of final compensation;
- e. Submitting compensation / assistance costs for approval by the IRC, and allocation of needed resources;
- f. Informing AHs of the resettlement program and of their entitlements; in coordination with the local authorities;
- g. Supervising the compensation payment process and the implementation of the RP in all the communes;
- h. Providing support to the Provincial Grievance Committee to redress grievances concerning about resettlement; activities in collaboration with the local authorities and GRC;
- i. Providing training to the commune staff on planning and implementation of resettlement activities and on the principles of resettlement in accordance with the RP;
- j. Preparing periodic supervision and monitoring reports liaising with the MOWRAM resettlement unit on RP implementation then MOWRAM-RU will officially submit to the IRC and ADB.

#### **5.1.5 Provincial Agencies**

264. The office of the provincial and district Governors, provincial agencies of MRD, MAFF and MLM and Department of Finance assist the PRS in the following:

- a. Land ownership and land holding surveys;
- b. Establishing compensation prices for land, crops and other fixed assets;
- c. Validating tenure status of land and structure; and
- d. Land recovery and allocation.

265. Moreover, local authorities may be called on to assist the each RS in:

- a. Public information campaign, public participation and consultation;
- b. Finalizing compensation and entitlement forms for each AH;
- c. Payment of compensation and allowances;

- d. Planning and implementing all resettlement and rehabilitation activities in the district and commune level;
- e. Addressing all grievances in the commune in accordance with the established procedures; and
- f. Maintain record of all public meetings, grievances, and actions taken to address complaints and grievances.

## **5.2 Monitoring and Evaluation**

266. The regular monitoring and evaluation of all efforts relating to involuntary resettlement will be coordinated by MOWRAM. The objectives are to help ensure that the RP is implemented as planned and that the mitigating measures carried out are adequate and effective in addressing the adverse social impact of the Project. The MOWRAM-RU will serve as the in-house monitoring body for the Project.

### **5.2.1 Indicators for In-house Monitoring**

267. The following indicators will be monitored periodically by the RU:
- a. Compensation and entitlements are calculated at rates and procedures provided in the RP;
  - b. AHs are paid as per agreement with project authorities;
  - c. Public information, public consultation and grievance redress procedures are respected as described in the RP;
  - d. The implementation of the Agriculture Training Program (ATP) carried out by a service provider;
  - e. Public facilities and infrastructure affected by the Project are restored promptly; and,
  - f. The transition between resettlement and the construction of the project is smooth.

### **5.2.2 External Monitoring Agent (EMA)**

268. Besides the EA, an independent institution to carry out external monitoring and post-implementation evaluation of the approved RP is also essential to ensure the successful implementation of RP. The IRC will prepare the TOR for prospected EMA and will establish a contract for the monitoring of the RP.

269. The EMA will provide the IRC a copy of its monthly monitoring reports. Then the IRC will forward the reports to MOWRAM and ADB simultaneously. This monitoring report will also be posted on ADB website as per the Public Communication Policy (PCP). The EMA will likewise conduct a Post-RP Implementation Evaluation Study in October 2010.

## **Appendix 1:**

### **DMS QUESTIONNAIRE**

គណៈកម្មការអន្តរក្រសួង  
អនុគណៈកម្មការទី១  
២០២០

ព្រះរាជាណាចក្រកម្ពុជា  
ជាតិ សាសនា ព្រះមហាក្សត្រ  
២០២០

**កម្រងសំណួរ ស្តីពីសេចក្តីសង្ខេប និងការអនុវត្តកម្រិតសង្ខេប**  
២០២០ \* ០១/០៩

លេខសម្គាល់ DMS No.: .....

ថ្ងៃខែឆ្នាំសម្ភាសន៍ ថ្ងៃទី.....ខែ.....ឆ្នាំ ២០០៧ ម៉ោងចាប់ផ្តើម.....ម៉ោងបញ្ចប់.....  
 ឈ្មោះអ្នកសម្ភាសន៍..... ឈ្មោះប្រធានអង្កេត.....ឈ្មោះមេភូមិ.....  
 ឈ្មោះមេគ្រួសារ..... ឈ្មោះហៅក្រៅ.....  
 ឈ្មោះប្តី ឬប្រពន្ធ..... ឈ្មោះហៅក្រៅ.....  
 ឈ្មោះអ្នកតបសម្ភាសន៍..... ឈ្មោះហៅក្រៅ.....ទំនាក់ទំនងនឹងមេគ្រួសារ ( កូនបង្កោល ខ ☐ )

**1. និតិវិធីការងារ**

លេខ PK: .....ផ្លូវ ☐ ស្ពាន ☐ (យកតាមទិសដៅចរន្តទឹកហូរ.....)  
 ផ្ទះលេខ.....ភូមិ : .....ឃុំ : .....ស្រុក : .....ខេត្ត : .....  
 - ចំងាយពីអ័ក្សប្រឡាយ/ទំនប់ដល់ក្បាលដីប្រវែង :.....ម៉ែត្រ  
 - ចំងាយពីអ័ក្សប្រឡាយ/ទំនប់ដល់មុខផ្ទះប្រវែង :.....ម៉ែត្រ (គិតត្រឹមសសរទី១ ឬ ជញ្ជាំងផ្ទះ)

**2. វិវាទរវាងសហគ្រាស ( បើមេគ្រួសារអវត្តមាន,ត្រូវសម្ភាសន៍អ្នកដែលមានសិទ្ធិឆ្លើយជំនួសមេគ្រួសារបាន, តែត្រូវមានអាយុលើស១៨ឆ្នាំ)**

2-1 អាយុ : ..... ឆ្នាំ 2-2 ភេទ : ☐ ប្រុស ☐ ស្រី  
 2-3 ភាសា :  ភាសាកំណើត  ភាសាបន្ទាប់  
 2-4 ជនជាតិ :   
 កូដសំនួរ 2-3 និង 2-4 ១ = ខ្មែរ ២ = ចាម ៣ = វៀតណាម ៤ = ចិន ៥ = លាវ ៦ = ថៃ ៧ = ផ្សេងៗបញ្ជាក់.....  
 2-5 មុខរបរ : ទី១  ទី២  ទី៣  ទី៤  ទី៥

លេខកូដមុខរបរ :

០	អ្នកមិនអាចធ្វើការបាន	១០	អ្នកលក់ក្រឡឹងសំណង់	២០	អ្នករត់ម៉ូតូឌុប / អ្នករត់រ៉ឺម៉ក
១	អ្នកជំនួញ / ពាណិជ្ជករធំៗ	១១	ជាងជួសជុលម៉ាស៊ីន / យានយន្ត	២១	ជាងចំណាក់
២	អ្នកលក់ដូរតិចតួច	១២	ជាងអគ្គិសនី	២២	អ្នកស៊ីឈ្នួលបើកបរយានយន្តឱ្យគេ
៣	សណ្ឋាគារ និងទេសចរណ៍	១៣	អ្នកជួលដីគេធ្វើកសិកម្ម	២៣	ថៅកែរថយន្តដឹកទំនិញ / តាក់ស៊ី
៤	ម្ចាស់ភោជនីយដ្ឋាន	១៤	អ្នកធ្វើកសិកម្មលើដីខ្លួនឯង	២៤	ថៅកែគោយន្ត
៥	អ្នកលក់ប្រេងឥន្ធនៈ	១៥	អ្នកស៊ីឈ្នួលធ្វើកសិកម្មឱ្យគេ	២៥	គ្រូបង្រៀន
៦	អ្នករកស៊ីលុយរាប់	១៦	កម្មករ ( មិនមែនផ្នែកកសិកម្ម )	២៦	ជាងអ៊ុតសក់ / កាត់សក់
៧	អ្នកដូរលុយ និងលក់មាស	១៧	អ្នកនេសាទ	២៧	ទាហាន / ប៉ូលីស
៨	ជាងឈើ	១៨	អ្នកចិញ្ចឹមសត្វ	២៨	មន្ត្រីរាជការ/បុគ្គលិកក្រុមហ៊ុន/NGO
៩	មេជាង / កម្មករសំណង់	១៩	អ្នករកអុស / ឈើ	២៩	ផ្សេងៗបញ្ជាក់ .....

**3- ព័ត៌មានទូទៅ :**

- 3.1 តើអ្នកបានដឹងឬទេថា មានគំរោងនឹងមកអភិវឌ្ឍន៍ក្នុងតំបន់របស់អ្នករស់នៅ? ( អ្នកសម្ភាសន៍ត្រូវពន្យល់អំពីគោលបំណងនៃការអភិវឌ្ឍន៍គំរោង) :
- ☐ បាទ , ពីប្រភពណា ..... ☐ ទេ
- 3.2 តើអ្នកប្រើប្រាស់ទឹកពីប្រភពណា ? ☐ ទឹកអូរ ☐ ទឹកត្រពាំងឬបឹង ☐ អណ្តូងលូរ ☐ អណ្តូងខ្ទង ☐ ផ្សេងៗ.....
- 3.3 តើនៅភូមិអ្នកមានសាលារៀនដែរឬទេ ? ☐ បាទ ☐ ទេ ( បើទេ ) តើកូនចៅរៀននៅទីណា? .....
- 3.4 តើនៅភូមិអ្នកមានវត្តអារាម ( វិហារ ) ដែរឬទេ ? ☐ បាទ ☐ ទេ ( បើទេ ) តើអ្នកទៅវត្តនៅទីណា? .....
- 3.5 តើនៅភូមិអ្នកមានមណ្ឌលសុខភាពដែរឬទេ ? ☐ បាទ ☐ ទេ ( បើទេ ) តើនៅពេលមានជំងឺទៅពេទ្យណា? .....
- 3.6 តើក្នុងគ្រួសាររបស់អ្នកធ្លាប់កើតមានជំងឺអ្វីខ្លះក្នុង១ឆ្នាំកន្លងទៅ ? ☐ គ្រុនចាញ់ ☐ គ្រុនឈាម ☐ គ្រុនក្តៅសន្លំ ☐ អាសន្នរោគ ☐ រាគ ☐ គ្រុនពោះវៀ
- 3.7 តើគ្រួសារអ្នកបានអ្វីបំភ្លឺនៅពេលយប់ ? ☐ ចង្កៀង/ទៀន ☐ អាកុយ ☐ ម៉ាស៊ីនភ្លើងផ្ទាល់ខ្លួន ☐ ប្រើបណ្តាញអគ្គិសនី
- 3.8 តើអ្នកមានបង្គន់អនាម័យប្រើឬទេ ? ☐ បាទ ☐ ទេ ( បើទេ ) ទៅបន្ទោបង់នៅទីណា ? .....

**4- ការយល់ដឹង និងការប្រកាសយល់ប្រជាជនចំពោះគំរោង:**

- 4-1 តើអ្នកបានទទួលកូនសៀវភៅព័ត៌មានឬទេ? ☐ ១=ទេ ( បើទេរំលងទៅ ៤-៤ ) ☐ ២=បាទ/ចាស
- 4-2 តើអ្នកបានអាន និងយល់ដឹងអំពីវាដែរឬទេ? ☐ ១=ទេ ☐ ២=បាទ/ចាស
- 4-3 តើអ្នកមានសំនួរ និងកង្វល់អ្វីខ្លះដោយសារអត្ថន័យរបស់កូនសៀវភៅនេះ?
- ៤-៣-១ បញ្ជាក់ : .....
- ៤-៣-២ បញ្ជាក់ : .....
- ៤-៣-៣ បញ្ជាក់ : .....
- 4-4 តើគម្រោងនេះនឹងប៉ះពាល់ដល់ទ្រព្យសម្បត្តិរបស់អ្នកអ្វីខ្លះ ? ០=មិនដឹង ១= ទេ ២=ប៉ះពាល់
- ៤-៦-១ ☐ ផ្ទះ / សំណង់ផ្សេងៗ ៤-៦-៤ ☐ តូបលក់ដូរ
- ៤-៦-២ ☐ ដីកសិកម្ម / ដីភូមិ ៤-៦-៥ ☐ ផ្សេងៗបញ្ជាក់ .....
- ៤-៦-៣ ☐ ស្រះ / អណ្តូង
- 4-5 តើអ្នកចង់ឱ្យរដ្ឋាភិបាលស្តារ ឬកសាងអាងទឹក និងប្រព័ន្ធស្រោចស្រពនៅទីតាំងនេះដែរឬទេ ? ☐ ១=ទេ ☐ ២=បាទ/ចាស
- 4-6 តើអ្នកចង់ឱ្យប្រជាជនដែលមានដីស្រែផ្នែកខាងក្រោមអាងទឹក មានប្រព័ន្ធស្រោចស្រពដែរឬទេ ? ☐ ១=ទេ ☐ ២=បាទ/ចាស
- 4-7 តើដីប្លង់របស់អ្នកនឹងត្រូវប៉ះពាល់ តើអ្នកចង់ឱ្យរដ្ឋាភិបាលជួយតាមវិធីណា? ☐ បង្កើតជាកន្លែងរស់នៅថ្មី ☐ ជាដីវិញ
- ☐ ជាសាច់ប្រាក់

5. ទិដ្ឋភាពទូទៅនៃការសាងសង់ប្រព័ន្ធបង្កើនទឹកស្រែសម្រាប់ស្រែកស្រោច

5-1 តើមានសមាជិកគ្រួសារណាម្នាក់នៅក្នុងគ្រួសារនេះ? .....នាក់ 5-2 តើមានគ្រួសារណាម្នាក់នៅក្នុងគ្រួសារនេះ? ១ ២ ៣ ៤ ៥+

5-3 សមាជិកគ្រួសារ (បើមានប្រើប្រាស់កម្លាំងនៅក្នុងគ្រួសារនេះតើប្រើប្រាស់មាណិកទាំងអស់)

ល.រ	ម៉ែនាមក់ម្តង និងមេត្រូវការ (ប្រើលេខកូដ)	អាយុ ឆ្នាំ	ទីកន្លែង កំណើត (ប្រើលេខកូដ)	ស្ថានភាព អាពាហ៍ពិពាហ៍ (ប្រើលេខកូដ)	ភេទ ១=ប្រុស ២=ស្រី	អនុភូតភាព ១=មិនមែន ២=មែន	ស្ថិតក្នុងការសិក្សា ១=ទេ ២=បាទ.មាស	ចំនួនឆ្នាំសិក្សា ដែលបានបញ្ចប់	ការងារមិនមែនកសិកម្ម ១=ទេ ២=បាទ.មាស	ការងារកសិកម្ម ១=ទេ ២=បាទ.មាស	សកម្មភាពការងារ (ប្រើលេខកូដ)
ក	១	គ	ឃ	ង	ច	ឆ	ជ	ឈ	ឈ	ជ	ត
១											
២											
៣											
៤											
៥											
៦											
៧											
៨											
៩											
១០											
១១											
១២											

ក្នុងបង្កោយ ខ: ១=មេត្រូវការខ្លួនឯង ២=ប្តី / ប្រពន្ធរបស់មេត្រូវការ ៣=គូសបង្កើតប្រុស / ស្រី ៤=ឪពុក / ម្តាយបង្កើត ៥=បងប្អូនប្រុស / ស្រីបង្កើត ៦=ឪពុក / ម្តាយស្រី ៧=មេប្រុស / ស្រី  
 ៨=បងប្អូនស្រីប្រុស / ស្រី ៩=គូសប្រុសប្រុស / ស្រី ១០=គូសប្រុស / ស្រី ១១=សាច់ញាតិផ្សេងៗ ១២=អ្នកបម្រើ ១៣=ផ្សេងៗបញ្ជាក់.....  
 ក្នុងបង្កោយ ឃ: ១=កម្ពុជា ២=វៀតណាម ៣=ចិន ៤=ឈាវ ៥=ថៃ ៦=ផ្សេងៗបញ្ជាក់.....  
 ក្នុងបង្កោយ ង: ១=នៅលើ ២=រៀបការ ៣=លែងលះ ៤=មើម៉ាយ / ពោះម៉ាយ (គ្រួសារឆ្នាប់) ៥=ផ្សេងៗបញ្ជាក់.....  
 ក្នុងបង្កោយ ច. ខ. ឃ. ង. ត: ប្រើជាមួយកូដសំនួរ

- 5-4 ប្រាក់ចំណូលប្រចាំឆ្នាំរបស់គ្រួសារអ្នក (សរុបសាច់ប្រាក់ និងផលិតផល)
- ប្រាក់ចំណូលទី១.....រៀល អ្នករកចំណូល (ប្រើកូដ ខ) .....
- ប្រាក់ចំណូលទី២.....រៀល .....
- ប្រាក់ចំណូលទី៣.....រៀល .....
- ប្រាក់ចំណូលទី៤.....រៀល .....
- ប្រាក់ចំណូលទី៥.....រៀល .....
- ប្រាក់ចំណូលផ្សេងៗ.....រៀល .....
- សរុបគិតជាប្រាក់រៀលក្នុងឆ្នាំ.....( គិតជាដុល្លារ) .....ដុល្លារ សរុបគិតជាដុល្លារក្នុង១ខែ .....ដុល្លារ

5-5 តើអ្វីខ្លះជាប្រភពប្រាក់ចំណូលសំខាន់ៗក្នុងគ្រួសារអ្នក, សូមរៀបរាប់តាមលំដាប់អាទិភាព?

☐ សំខាន់ទី១ ☐ សំខាន់ទី២ ☐ សំខាន់ទី៣ ☐ សំខាន់ទី៤ ☐ សំខាន់ទី៥

- ១=ប្រាក់ឈ្នួល ឬប្រាក់បៀវត្ស ២=បុគ្គលិកសណ្ឋាគារ ៣=ការងារធ្វើជំនួញ ឬលក់ដូរ ៤=កសិផល
- ៥=កម្មករសំណង់ ៦=រត់តាក់ស៊ី ៧=ការងារនេសាទ ៨=ប្រាក់គេធ្វើឱ្យ
- ៩=ការចិញ្ចឹមសត្វ ១០=ការងារដឹកជញ្ជូន ១១=ការងាររកអុស/ឈើ ១២= រត់ម៉ូតូ
- ១៣ = ផ្សេងៗបញ្ជាក់.....

5-6 ភាគរយ (%) នៃប្រភេទប្រាក់ចំណូលនីមួយៗរបស់គ្រួសារក្នុង ១ខែ (គណនាដោយអ្នកសម្ភាសន៍)

ចំណូលទី១ - .....% ចំណូលទី ៣- .....% ចំណូលទី ៥- .....%

ចំណូលទី ២- .....% ចំណូលទី ៤- .....% ចំណូលផ្សេង- .....%

5-7 ស្ថានភាពមេគ្រួសារ : ☐ មនុស្សចាស់ (៦០+) ☐ ស្ត្រីមេម៉ាយ ☐ ពិការ ☐ គ្រួសារគ្មានដី ☐ ជនជាតិភាគតិច

☐ ប្រាក់ចំណូល  $\leq$  ១៤ដុល្លារ ក្នុងមួយខែក្នុងមួយគ្រួសារ

## 6. ព័ត៌មានអំពីការប្រើប្រាស់ដី:

6-1 តើដីអ្វីខ្លះរបស់អ្នក ដែលប៉ះពាល់ដោយសារគម្រោងនេះ ?

ប្រភេទដី	ទីតាំង	ទំហំផ្ទៃដី / ខ្ទង់	ប្រើប្រាស់ដី ពីឆ្នាំណា?	ទំហំដីសរុប ម <sup>២</sup>	ទំហំដែលបានប៉ះពាល់			ប្រាក់សំណង	
					បណ្តោយ, ម	ទទឹង, ម	ទំហំ/ម <sup>២</sup>	ដុល្លារ/ម <sup>២</sup>	សរុបដុល្លារ, ម <sup>២</sup>
ដីស្រែ									
ដីចំការ - ជួន									
ដីទំនេរចោល									
ដីពាណិជ្ជកម្ម									
ដីកសិដ្ឋាន - ជួន									
សរុប:									



6-2 តើអ្នកប្រកាសសេវាដែលបានប្រើប្រាស់ក្នុងតំបន់នេះ?

ប្រភេទ	ឈ្មោះ	ស្ថានភាព/ទីតាំង	ប្រើប្រាស់ ព័ត៌មាន	ទំហំ ដែលបានប្រើប្រាស់			ប្រាក់សំណង	
				បណ្តោះអាសន្ន/ម	ទឹក/ម	ទំហំ/ម <sup>២</sup>	ដុល្លារ/ម <sup>២</sup>	សរុបដុល្លារ/ម <sup>២</sup>
ដីស្រែ								
ដីកសិកម្ម								
ដីសាងសង់								
ដីពាណិជ្ជកម្ម								
ដីសំណង់								
សរុប:								

6-3 ទំហំដីដែលបានប្រើប្រាស់ជាភាគរយ

ប្រភេទ	ដីកសិកម្មសរុប, ម <sup>២</sup>	ទំហំដីដែលបានប្រើប្រាស់, ម <sup>២</sup>	ភាគរយនៃទំហំដីសរុប, ម <sup>២</sup>	គ្រាប់បញ្ចាំមិនទាន់ប្រើប្រាស់, ម <sup>២</sup>
ដីស្រែ				
ដីកសិកម្ម				
ដីសាងសង់				
ដីពាណិជ្ជកម្ម				
ដីសំណង់				
សរុប:				

5-4 ដីប្រើប្រាស់ជាង ១០% នៃផ្ទៃដីសរុប ឬទេ? ☐បាទ ☐ទេ

7. ឯកសារសំណង់ ឬសេចក្តីណែនាំ និងអត្ថបទផ្សេងៗទៀត

7-1 សំណង់ និងផ្ទៃសម្រាប់:

តើសំណង់ណាមួយរបស់អ្នកដែលបានប្រើប្រាស់ដោយសារតែរោង ?

១-ផ្ទះស្នាក់នៅ:	ចំនួន.....	៥-ហាង/ហាងលក់:	ចំនួន.....
២-ផ្ទះស្នាក់នៅ និង លក់ដូរ:	ចំនួន.....	៦- សិប្បកម្ម/រោងចក្រ:	ចំនួន.....
៣-ផ្ទះបាយ/បន្ទប់ប្រគល់ជូន:	ចំនួន.....	៧-ផ្ទះសំណាក់: .....	ចំនួន.....
៤-រោងចក្រ/ហ្វែរ:	ចំនួន.....	៨- ផ្សេងៗ (បញ្ជាក់):	ចំនួន.....

លេខកូដ ចំនួនជាន់:	០-ជាន់ដំបូង	១-មួយជាន់	២-ពីរជាន់	៣-បីជាន់	៤-ផ្សេងៗ.....
លេខកូដ សំណង់:	១-សំណង់:បណ្តាញអាសន្ន	២-ស្បូវ/ស្បែក	៣-សំបុត្រ/ប្រាក់/ស្លាកសម្គាល់	៤-លើ	៥-ប្លង់
	៦-ក្បាល	៧-ក្បាល	៨-ក្បាល	៩-បេតុង	១០-ផ្ទាំង
	១១-លោហៈ	១២-ក្បាល	១៣-ផ្សេងៗបញ្ជាក់ .....		

ល.រ	ប្រភេទសំណង់	ចំនួនជាន់ (ប្រើក្នុង)	សម្ភារៈសំណង់ (ប្រើក្នុង)	ទំហំសំណង់ សរុបម៉ែត្រការ៉េ	ទំហំប៉ះសរុប ម៉ែត្រការ៉េ	ឯកតា	តំលៃឯកតា (ដុល្លារអាមេរិក)	តំលៃប៉ះពាល់សរុប (ដុល្លារអាមេរិក)			
១			ដំបូលៈ.....	.....x.....	.....x.....						
				.....x.....	.....x.....						
				.....x.....	.....x.....						
			ជញ្ជាំងៈ.....	.....x.....	.....x.....						
				.....x.....	.....x.....						
				.....x.....	.....x.....						
			កំរាល.....	.....x.....	.....x.....						
				.....x.....	.....x.....						
				.....x.....	.....x.....						
			សសរៈ.....	.....x.....	ចំនួនសរុប=.....ចំនួនប៉ះ.....						
				.....x.....	ចំនួនសរុប=.....ចំនួនប៉ះ.....						
				.....x.....	ចំនួនសរុប=.....ចំនួនប៉ះ.....						
ទំហំសំណង់ដែលប៉ះពាល់ (%) =											
ថ្លៃជាងសាងសង់សរុប (ដុល្លារអាមេរិក)											
សរុបសំណង់ទី១ (ដុល្លារអាមេរិក) =											
ល.រ	ប្រភេទសំណង់	ចំនួនជាន់ (ប្រើក្នុង)	សម្ភារៈសំណង់ (ប្រើក្នុង)	ទំហំសំណង់ សរុបម៉ែត្រការ៉េ	ទំហំប៉ះសរុប ម៉ែត្រការ៉េ	ឯកតា	តំលៃឯកតា (ដុល្លារអាមេរិក)	តំលៃប៉ះពាល់សរុប (ដុល្លារអាមេរិក)			
២			ដំបូលៈ.....	.....x.....	.....x.....						
				.....x.....	.....x.....						
				.....x.....	.....x.....						
			ជញ្ជាំងៈ.....	.....x.....	.....x.....						
				.....x.....	.....x.....						
				.....x.....	.....x.....						
			កំរាល.....	.....x.....	.....x.....						
				.....x.....	.....x.....						
				.....x.....	.....x.....						
			សសរៈ.....	.....x.....	ចំនួនសរុប=.....ចំនួនប៉ះ.....						
				.....x.....	ចំនួនសរុប=.....ចំនួនប៉ះ.....						
				.....x.....	ចំនួនសរុប=.....ចំនួនប៉ះ.....						
ទំហំសំណង់ដែលប៉ះពាល់ (%) =											
ថ្លៃជាងសាងសង់សរុប (ដុល្លារអាមេរិក)											
សរុបសំណង់ទី២ (ដុល្លារអាមេរិក) =											

ល.រ	ប្រភេទសំណង់	ចំនួនជាន់ (ប្រើក្នុង)	សំភារៈសំណង់ (ប្រើក្នុង)	ទំហំសំណង់ សរុបម៉ែត្រការ៉េ	ទំហំប៉ះសរុប ម៉ែត្រការ៉េ	ឯកតា	តំលៃឯកតា (ដុល្លារអាមេរិក)	តំលៃប៉ះពាល់សរុប (ដុល្លារអាមេរិក)			
៣			ដំបូលៈ.....	.....x.....	.....x.....						
				.....x.....	.....x.....						
				.....x.....	.....x.....						
			ជញ្ជាំងៈ.....	.....x.....	.....x.....						
				.....x.....	.....x.....						
				.....x.....	.....x.....						
			កំរាល.....	.....x.....	.....x.....						
				.....x.....	.....x.....						
				.....x.....	.....x.....						
			សសរៈ.....	.....x.....	ចំនួនសរុប=.....ចំនួនប៉ះ.....						
				.....x.....	ចំនួនសរុប=.....ចំនួនប៉ះ.....						
				.....x.....	ចំនួនសរុប=.....ចំនួនប៉ះ.....						
ទំហំសំណង់ដែលប៉ះពាល់ (%) =											
ថ្លៃជាងសាងសង់សរុប (ដុល្លារអាមេរិក)											
សរុបសំណង់ទី៣ (ដុល្លារអាមេរិក) =											
ល.រ	ប្រភេទសំណង់	ចំនួនជាន់ (ប្រើក្នុង)	សំភារៈសំណង់ (ប្រើក្នុង)	ទំហំសំណង់ សរុបម៉ែត្រការ៉េ	ទំហំប៉ះសរុប ម៉ែត្រការ៉េ	ឯកតា	តំលៃឯកតា (ដុល្លារអាមេរិក)	តំលៃប៉ះពាល់សរុប (ដុល្លារអាមេរិក)			
៤			ដំបូលៈ.....	.....x.....	.....x.....						
				.....x.....	.....x.....						
				.....x.....	.....x.....						
			ជញ្ជាំងៈ.....	.....x.....	.....x.....						
				.....x.....	.....x.....						
				.....x.....	.....x.....						
			កំរាល.....	.....x.....	.....x.....						
				.....x.....	.....x.....						
				.....x.....	.....x.....						
			សសរៈ.....	.....x.....	ចំនួនសរុប=.....ចំនួនប៉ះ.....						
				.....x.....	ចំនួនសរុប=.....ចំនួនប៉ះ.....						
				.....x.....	ចំនួនសរុប=.....ចំនួនប៉ះ.....						
ទំហំសំណង់ដែលប៉ះពាល់ (%) =											
ថ្លៃជាងសាងសង់សរុប (ដុល្លារអាមេរិក)											
សរុបសំណង់ទី៤ (ដុល្លារអាមេរិក) =											

ល.រ	ប្រភេទសំណង់	ចំនួនជាន់ (ប្រើក្នុង)	សំភារៈសំណង់ (ប្រើក្នុង)	ទំហំសំណង់ សរុបម៉ែត្រការ៉េ	ទំហំប៉ះសរុប ម៉ែត្រការ៉េ	ឯកតា	តំលៃឯកតា (ដុល្លារអាមេរិក)	តំលៃប៉ះពាល់សរុប (ដុល្លារអាមេរិក)
៥		ដំបូលៈ.....	.....x.....	.....x.....				
			.....x.....	.....x.....				
			.....x.....	.....x.....				
		ជញ្ជាំងៈ.....	.....x.....	.....x.....				
			.....x.....	.....x.....				
			.....x.....	.....x.....				
		កំពាលៈ.....	.....x.....	.....x.....				
			.....x.....	.....x.....				
			.....x.....	.....x.....				
		សសរៈ.....	.....x.....	ចំនួនសរុប=.....ចំនួនប៉ះ.....				
			.....x.....	ចំនួនសរុប=.....ចំនួនប៉ះ.....				
			.....x.....	ចំនួនសរុប=.....ចំនួនប៉ះ.....				
ទំហំសំណង់ដែលប៉ះពាល់ (%) =								
ថ្លៃជាងសាងសង់សរុប (ដុល្លារអាមេរិក)								
សរុបសំណង់ទី៥ (ដុល្លារអាមេរិក) =								
សរុបរួម (ដុល្លារអាមេរិក)								

7-2 អចលនវត្ថុផ្សេងៗ

ល.រ	ប្រភេទអចលនវត្ថុ	ចំនួន	តំលៃឯកតា (ដុល្លារអាមេរិក)	តំលៃសរុប (ដុល្លារអាមេរិក)
១	អណ្តូងជីក			
២	អណ្តូងស្នប់			
៣	របងឈើ, ខ្សែលូសរសៃស្រូវ (ម៉ែត្រ)	ប្រវែង.....x កម្រិត.....		
៤	របងថ្ម (រៀបគង្គ្រ/ថ្មភ្នំ) (ម៉ែត្រ)	ប្រវែង.....x កម្រិត.....		
៥	ផ្លូវ / មេគិយ៍			
៦	បាក់សាប (ម៉ែត្រ)	ប្រវែង.....x ទទឹង.....		
៧	ផ្សេងៗបញ្ជាក់.....			
<b>សរុបរួម:</b>				

7-3 ជំនួយឧបត្ថម្ភសំរាប់ការសាងសង់

- ១- ☐ ជូនក្នុងរយៈពេល ៦០ ថ្ងៃ ប្រើវត្ថុធាតុដើមស្រាលៗ រំកិលថយក្រោយ ២- ☐ ជូនក្នុងរយៈពេល ៦០ ថ្ងៃ ប្រើវត្ថុធាតុដើមស្រាលៗ បំណាស់ទិញយកពីទីតាំងចាស់
- ៣- ☐ ជូនក្នុងរយៈពេល ៦០ ថ្ងៃ ប្រើវត្ថុធាតុដើមធ្ងន់ៗ រំកិលថយក្រោយ ៤- ☐ ជូនក្នុងរយៈពេល ៦០ ថ្ងៃ ប្រើវត្ថុធាតុដើមធ្ងន់ៗ បំណាស់ទិញយកពីទីតាំងចាស់

6-4 ជំនួយឧបត្ថម្ភសំរាប់ការដឹកជញ្ជូន

- ១- ☐ រុករានបណ្តាញដឹកជញ្ជូន រំកិលថយក្រោយ ២- ☐ រុករានបណ្តាញដឹកជញ្ជូន រំកិលថយក្រោយ
- ៣- ☐ ជូនសំបែងបំណាស់ទិញយកពីទីតាំងចាស់ ៤- ☐ ជូនសំបែងបំណាស់ទិញយកពីទីតាំងចាស់ ឬ ឃុំផ្សេង

8. ដើមរយ្យ និចង្គណ៍ :

ក្នុងដើមឈើ និងដំណាំ:

១-ដើមស្វាយ ២-ដើមដូង ៣-ដើមអំពិល ៤-ដើមខ្នុរ ៥-ដើមទាបបាយ ៦-ដើមទាបបារាំង ៧-ដើមព្រួចផ្លូវ ៨-ដើមអំពៅ  
៩- ដើមត្រាត ១០- ដើមម្សៅ ១១- ដើមក្រូចថ្នង ១២- ទឹកដោះគោ ១៣-ដើមល្អង ១៤-ដើមចេក ១៥-ដើមត្របែក ១៦- ដើមព្រិង  
១៧-ដើមស្វាយចន្ទី ១៨-ដើមប្លូស្យ ១៩-ដើមក្រសាំង ២០-ដើមប្រេងឡូល់ ២១-ដើមអាកាស្យា ២២-ដើមកំពិករាជ ២៣-ដំណាំស្រូវវិស្សា  
២៤-ដំណាំស្រូវបាំង ២៥-ផ្សេង បញ្ជាក់ .....

[illegible]

## ស្ថាប័នតំបន់

**အေဒီ ၁၈၈၈**

ប្តី / ប្អូនធូ មេប្អូនសាវ

## តំណាងបុគ្គល

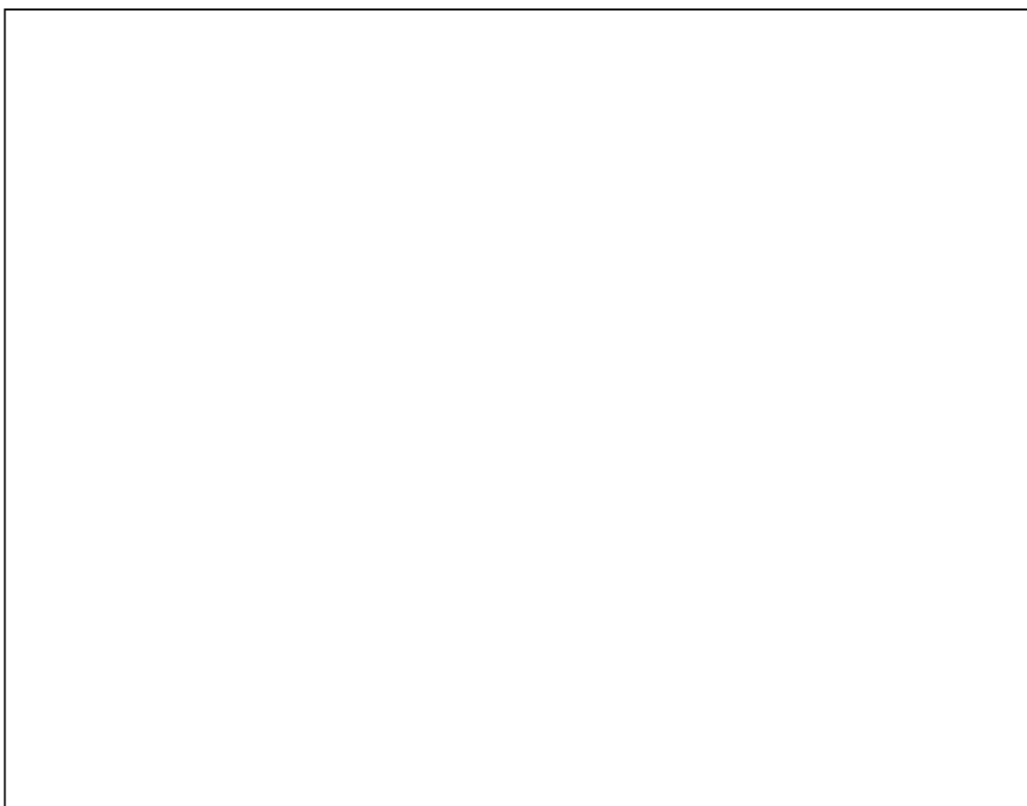
ក្រុមការងារ IRC

ក្រុមការងារអនុគណៈកម្មការខេត្ត

ប្រធានក្រុម

ប្រជុំគំរូទី១

លេខប្រជុំ: .....



## **Appendix 2:**

### **DMS DATA REPORT**

### Detail List of Socio-economy of Ta Soam Subproject of Northwest Irrigation Sector Project in Siem Reap Province

អង្គភាព អភិវឌ្ឍន៍ កម្ពុជា Ankor Chum District

[illegible]



[illegible]

[illegible]

**Certified by**  
Chief MOWRAM.RU of NWISP.PMU

**Verified by**  
Team Leader

Date :day: month: Year: 2009

**Tauch Ang**

# Chheang Chhorlin

**Sao Channarith**

**គណៈកម្មការផ្ទេរដីស្រែចំការចោទស្តីបទ វិស័យសង្គម**  
**Inter-Ministerial Resettlement Committee**  
**គម្រោងប្រតិបត្តិផ្ទេរដីស្រែកសាម៉ាញ**  
**Northwest Irrigation Sector Project**

## Ankor Chum District

HH		Ou		CH		Sex	Age	Household Name	Household age			Income \$/month	Land in Use	Land not in Use	Orchard Land	Residential Land	Total Agr. Land	Affected Land (m <sup>2</sup> )			% of Affected	Affected Trees																																							
No.		No.		No.					M	F	H							M	F	H		M	F	H	M	F	H	M	F	H	M	F	H																												
No.	No.	No.	No.	No.	No.																													No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.											
1	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	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	
1	1	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	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
1	1	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	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
1	1	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	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
1	1	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	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
1	1	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	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
1	1	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	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
1	1	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	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
1	1	1	2	3	4	5	6	7	8	9	10	11	12	13	1																																														

\_\_\_\_\_

[illegible]

[illegible]

**Certified by**  
Chief MOWRAM, RU of NWISF, PMU

**Verified by**  
Team Leader

Date :day: month: Year: 2009

**Taugh Ang**

## Chheang Chhorlin

**Sao Channarith**

[illegible]

**ព្រះរាជាណាចក្រកម្ពុជា**  
**Kingdom Of Cambodia**  
**ជាតិ សាសនា ព្រះមហាក្សត្រ**  
**Nation Religion King**

ສາກົນລະເງິນແລະສິນເປັນສິດສຳນຸກ (ບັນດາລະດັບສຳນຸກສິດສຳນຸກ) ລະດັບສຳນຸກສິດສຳນຸກ

[illegible]

ល.រ	ឈ្មោះ ភូមិ ឃុំ	ឈ្មោះប្រមូល	ចំនួនប្រជាជន	ស្រី/ប្រុស	អាយុក្មេង	អាយុចាស់	អាយុក្មេង	អាយុចាស់	អាយុក្មេង	អាយុចាស់	ប្រភេទ ឈើ ផ្លែឈើ												ផ្ទៃដីរំលោភ (m²)				ផ្ទៃដីរំលោភ																																																																																																																																																																																																																																																																																																																																																																																																																																																																																
											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	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100	101	102	103	104	105	106	107	108	109	110	111	112	113	114	115	116	117	118	119	120	121	122	123	124	125	126	127	128	129	130	131	132	133	134	135	136	137	138	139	140	141	142	143	144	145	146	147	148	149	150	151	152	153	154	155	156	157	158	159	160	161	162	163	164	165	166	167	168	169	170	171	172	173	174	175	176	177	178	179	180	181	182	183	184	185	186	187	188	189	190	191	192	193	194	195	196	197	198	199	200	201	202	203	204	205	206	207	208	209	210	211	212	213	214	215	216	217	218	219	220	221	222	223	224	225	226	227	228	229	230	231	232	233	234	235	236	237	238	239	240	241	242	243	244	245	246	247	248	249	250	251	252	253	254	255	256	257	258	259	260	261	262	263	264	265	266	267	268	269	270	271	272	273	274	275	276	277	278	279	280	281	282	283	284	285	286	287	288	289	290	291	292	293	294	295	296	297	298	299	300	301	302	303	304	305	306	307	308	309	310	311	312	313	314	315	316	317	318	319	320	321	322	323	324	325	326	327	328	329	330	331	332	333	334	335	336	337	338	339	340	341	342	343	344	345	346	347	348	349	350	351	352	353	354	355	356	357	358	359	360	361	362	363	364	365	366	367	368	369	370	371	372	373	374	375	376	377	378	379	380	381	382	383	384	385	386	387	388	389	390	391	392	393	394	395	396	397	398	399	400	401	402	403	404	405	406	407	408	409	410	411	412	413	414	415	416	417	418	419	420	421	422	423	424	425	426	427	428	429	430	431	432	433	434	435	436	437	438	439	440	441	442	443	444	445	446	447	448	449	450	451	452	453	454	455	456	457	458	459	460	461	462	463	464	465	466	467	468	469	470	471	472	473	474	475	476	477	478	479	480







[illegible]

[illegible]

[illegible]



**සහතිකය**      **ප්‍රධාන**      **විද්‍යාල**      **විද්‍යාල**

**မြန်မာ့ အလင်း**      Mongkol Borey District

[illegible]

[illegible]

[illegible]

HH No		CH No		Household Name		Sex		Age		Marital Status		Household Age		Income		Land		Land		Total Agr.		Affectd Land (m²)		Affectd Trees		Ap th		
HH No	CH No	No.	No.	No.	No.	M	F	HH Head	HH Head	HH Head	HH Head	HH Head	HH Head	HH Head	\$/Month	in Use	not in Use	Residential	Land	Land	Land	Roof Land	Orchard	Food	Total	Allec. Residential	Allec. Commercial	Ap th
1		2		3		4		5		6		7		8		9		10		11		12		13		14		
1		2		3		4		5		6		7		8		9		10		11		12		13		14		
1		2		3		4		5		6		7		8		9		10		11		12		13		14		
1		2		3		4		5		6		7		8		9		10		11		12		13		14		
1		2		3		4		5		6		7		8		9		10		11		12		13		14		
1		2		3		4		5		6		7		8		9		10		11		12		13		14		
1		2		3		4		5		6		7		8		9		10		11		12		13		14		
1		2		3		4		5		6		7		8		9		10		11		12		13		14		
1		2		3		4		5		6		7		8		9		10		11		12		13		14		
1		2		3		4		5		6		7		8		9		10		11		12		13		14		
1		2		3		4		5		6		7		8		9		10		11		12		13		14		
1		2		3		4		5		6		7		8		9		10		11		12		13		14		
1		2		3		4		5		6		7		8		9		10		11		12		13		14		
1		2		3		4		5		6		7		8		9		10		11		12		13		14		
1		2		3		4		5		6		7		8		9		10		11		12		13		14		
1		2		3		4		5		6		7		8		9		10		11		12		13		14		
1		2		3		4		5		6		7		8		9		10		11		12		13		14		
1		2		3		4		5		6		7		8		9		10		11		12		13		14		
1		2		3		4		5		6		7		8		9		10		11		12		13		14		
1		2		3		4		5		6		7		8		9		10		11		12		13		14		
1		2		3		4		5		6		7		8		9		10		11		12		13		14		
1		2		3		4		5		6		7		8		9		10		11		12		13		14		
1		2		3		4		5		6		7		8		9		10		11		12		13		14		
1		2		3		4		5		6		7		8		9		10		11		12		13		14		
1		2		3		4		5		6		7		8		9		10		11		12		13		14		
1		2		3		4		5		6		7		8		9		10		11		12		13		14		
1		2		3		4		5		6		7		8		9		10		11		12		13		14		
1		2		3		4		5		6		7		8		9		10		11								



[illegible]





គណៈកម្មាធិការអន្តរក្រសួងសម្រាប់ការងារសាងសង់ និងគ្រប់គ្រង  
Inter-Ministerial Resettlement Committee  
កម្រិតប្រចាំថ្ងៃសម្រាប់ការងារសាងសង់  
Northwest Irrigation Sector Project

ព្រះរាជាណាចក្រកម្ពុជា  
Kingdom Of Cambodia  
ជាតិ សាសនា ព្រះមហាក្សត្រ  
Nation Religion King

តារាងសង្ខេបស្តីពីអ្នករងផលប៉ះពាល់ ១ ផែនការសាងសង់ស្រោចស្រូវក្នុងតំបន់ ទន្លេសាបខ្សែទទេស  
The Summary List of APs of Canal No.1 Subproject of Northwest Irrigation Sector Project in Battambang Province

ក្រុមប្រឹក្សា បេតន ខេត្តកំពង់ឆ្នាំង ក្រុងតាស៊ី ក្រុងតាស៊ី

ល.រ	ឈ្មោះ ភូមិ ឃុំ	ឈ្មោះ ឃុំ	No. of Affected DMS	No. of Affected DMS	Double Hh	Aged Hh	Widow Hh	Vulnerable H/h	Landless H/h	ឈ្នួលដីរងផលប៉ះពាល់										អ្នករងផលប៉ះពាល់ដទៃទៀត										ផ្ទៃដីរងផលប៉ះពាល់ Affectd Area (m <sup>2</sup> )	ផ្ទៃដី Lost Area (m <sup>2</sup> )	ផ្ទៃដី Lost Area (%)		
										1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
ក្រុមប្រឹក្សា បេតន ខេត្តកំពង់ឆ្នាំង ក្រុងតាស៊ី ក្រុងតាស៊ី																																		
1	ភូមិ ក្រុងតាស៊ី ឃុំ ក្រុងតាស៊ី	MC	39	37	7	5		9	11	17		9		42	1		1	27	2	28	216.76	28.71	50.00	54.50	114.87	58.00	16.30			21.40				
2	ភូមិ ក្រុងតាស៊ី ឃុំ ក្រុងតាស៊ី	MC	10	9	3	2		5	1	2	1			1	1	13	7		2		30.40	45.90	32.50		50.47	10.50			15.19	62.25		300.00		
Sub-Total MC : 2 Villages			49	46	10	7		14	12	19	1	9		43	2	13	7	1	27	2	30	247.16	74.61	50.00	87.00	114.87	62.80			15.19	21.40	62.25	300.00	
1	ភូមិ ក្រុងតាស៊ី ឃុំ ក្រុងតាស៊ី	SC3	40	39	6	12	1	17		10	1						3													7,074.40	74.00	73.85		
Sub-Total SC3 : 6 Villages			136	131	12	28	1	36		10	1	1					3		2											46,189.50	74.00	73.85		
1	ភូមិ ក្រុងតាស៊ី ឃុំ ក្រុងតាស៊ី	MD	19	12	1	5		5		5							1				8.75									6,091.00		90.00		
Sub-Total MD : 1 Village			19	12	1	5		5		5							1				8.75									6,091.00		90.00		
1	ភូមិ ក្រុងតាស៊ី ឃុំ ក្រុងតាស៊ី	SD1	19	17	3	9		9																							33,073.60		11	
Sub-Total SD1 : 6 Villages			90	78	6	21		23		6							1														111,844.36		17	
2	ភូមិ ក្រុងតាស៊ី ឃុំ ក្រុងតាស៊ី	SD1	30	22	1	5		5		6																					29,122.84		5	
3	ភូមិ ក្រុងតាស៊ី ឃុំ ក្រុងតាស៊ី	SD1	12	10	1	4		5																							16,798.42			
4	ភូមិ ក្រុងតាស៊ី ឃុំ ក្រុងតាស៊ី	SD1	11	10	1	1		2									1														10,550.80			
5	ភូមិ ក្រុងតាស៊ី ឃុំ ក្រុងតាស៊ី	SD1	15	10		2		2																								6,465.10		
6	ភូមិ ក្រុងតាស៊ី ឃុំ ក្រុងតាស៊ី	SD1	12	9																												15,813.60		1
Sub-Total SD1 : 6 Villages			90	78	6	21		23		6							1															111,844.36		17
1	ភូមិ ក្រុងតាស៊ី ឃុំ ក្រុងតាស៊ី	SD2	15	10		1		1																								8,754.25		2

[illegible]

**Certified by**  
Chief MOWRAM.RU of NWIS.PMU

**Verified by**  
Team Leader

Date :day: month: Year: 2009  
Prepared by MOWRRM. RU

## Tauch Ang

## Ich Somony

**Sao Channarith**

[illegible]

### Detail List of Socio-economy of Canal No.1 Subproject of Northwest Irrigation Sector Project in Battambang Province

**අලුත් පලය** Bovel District

[illegible]

[illegible]





[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]



[illegible]



[illegible]

**គណៈកម្មការផ្ទេរ/ក្រសួងនៃគ.ជ.ប**  
**Inter-Ministerial Resettlement Committee**  
**ក្រសួងប្រៃសណីយ៍/ក្រសួងសាងសង់**  
**Ministry of Water Resources and Construction**

ព្រះរាជាណាចក្រកម្ពុជា  
Kingdom Of Cambodia  
ជាតិ សាសនា ព្រះមហាក្សត្រ  
Nation Religion King

ការពង្រឹងស្ថានភាពសេដ្ឋកិច្ចកសិកម្ម កសិករ និងប្រជាជនក្រីក្រ

The Summary List of APs of **Chork Reservoir** Subproject of Northwest Irrigation Sector Project In Battambang Province

**ក្រុមប្រឹក្សាឃុំ** **Mong Reusey District**

[illegible]

[illegible]

**Verified by**  
Team Leader

Date :day: month: Year: 2009

## Chheang Chhorlin

**Sao Channarith**

អង្គជំនុំជម្រះសាលាដំបូង ក្រសួងយុត្តិធម៌ ចុះកាលបរិច្ឆេទ ០៩/០៩/២០១២

### Detail List of Socio-economy of Chork Reservoir Subproject of Northwest Irrigation Sector Project in Battambang Province

**ក្រសួង យោធព៌ស៊ីវិល**      **Mong Reusey District**

[illegible]

១៤. គម្ពីរ ប្រាសាទល្វើ ឃុំ ជ្រៃតាម ស្រុក ចោមចិន ក្រុង ប្រេនលី ខេត្ត បន្ទាយមានជ័យ

[illegible]

**២- ភូមិ បាគង់ ឃុំ វែកសាច** រដ្ឋបាល ខេត្តកោះកុង Chork Thom Village, Prey Tauch Commune, Mong Reusey District

[illegible]

**៣- គម្ពីរ បងកុមារ និង វិទ្យាល័យ** Chork Tauch Village, Prey Tauch Commune, Mong Reusey District

[illegible]

**១. គណៈកម្មាធិការ បំរើសេចក្តី**      ព្រះវិហារ, ភូមិបឹងកក់, សង្កាត់បឹងកក់, ខណ្ឌទួលគោក, រាជធានីភ្នំពេញ

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]







[illegible]

### **Appendix 3:**

## **SOCIO-ECONOMIC QUESTIONNAIRE**

## Questionnaires for Socio-Economic Survey

We are TA resettlement specialist and official of RU-MOWRAM, representing Ministry of Water Resources and Meteorology (MOWRAM) and Asian Development Bank (ADB) to conduct socio-economic survey for preparing Resettlement Plan (RP) of ..... Sub-Project. The survey aims to study present socio-economic of Affected Persons, magnitude of project impact and other information about affected households. Thus, the response to this questionnaire is very essential for you and for preparing RP.

### I- General Information

DMS code: .....

Date: .....

Interviewer Name: .....

Signature .....

Supervision by: .....

Date: .....

1- Village Name: (1-Punley, 2-Svay Sar)

2- a/- Interviewee Name: ..... b/- Sex: ( 1- male/ 2- female ) c/- Age: .....

d/- Relationship in family: ( 1. Household head/ 2. Income family member / 3. Under family support)

### II- Socio-economic Information

1. Household Status, Income, Occupation and Members

No.	Relationship with head of Household *	Sex 2*	Age	Married Status3*	Education 4*	Main Occupation	Monthly Income (US\$)	Secondary Occupation	Monthly Income (US\$)	Work place 5*
1										
2										
3										
4										
5										
6										
7										
8										
9										
10										
11										

1 Relationship with HH. head: {1} HH. Head {2} spouse {3} children {4} parent {5} other

2. Sex: {1} Male {2} Female

3. Married Status: {1} Single {2} Married {3} Divorced {4} Separate

4. Education Level: {0} Illiterate {1} Primary school {2} Secondary school {3} High school {4} Vocational training {5} University

5. Workplace: {1} Home {2} <1km. {3} 1-2kms. {4} 2-4kms. {5} > 4 Kms.

2- What are your family income as food from surrounding house and village? { 1. Fish or meat 2. Vegetable 3. Fruit 4. Others ..... }

3- Monthly household expense in Riels (please write detail expense and total in last row)

Vegetable	Fish and Meat	Other food	Health	Education	Agriculture Investment	Ceremony and Entertainment	Others

4- What is your total residential land area? { ..... m<sup>2</sup>}

5- Building type and construction materials

Building Type	Floor Area	Type of Building
House		

\* Type of building

**House** [1] Villa [2] brick or concrete house [3] hybrid brick and wooden house with tile roof  
[4] wooden house with tile roof [5] hybrid brick and wooden house with zinc or fibrocement roof  
[6] wooden house with zinc or fibrocement roof [7] wooden house with leave or thatch roof  
[8] small tree or bamboo house with leave or thatch roof.

6- Household Asset

Type of Asset	No. of working	No. of not working
Bicycle		
Motorbike / Moto Remork		
Car		
Truck/ Mini bus		
Koyun		
Oxcart		
Cassette/CD/DVD Player/TV		
Telephone		
Others .....		

7- What livestock do your family have ? How many ?

Cow .....

Buffalo .....

Horse .....

Pig .....

Goat .....

Chicken .....

Duck .....

Others .....

8- How many farm land do your family have? ..... places and Please fill the below table for the qualification of your land

No.	Land Size (m <sup>2</sup> )	Crop Type on the land	Cultivation Duration per year	No. of Plantation Time	Yield per year	Annual Revenue	Location
Total							

9- Please fill the below table for the distance from home to your farm lands

No.	Distance from home to farm land (m)	Transport mode
1		
2		
3		
4		
5		
6		

10- What is your family difficulty in farming activities?

{ 1. Inundation / 2. Unfertile land / 3. Lack of capital investment / 4. Lack of farming Technique / 5. Lack of farming equipment and tools / 6. Insufficient farm land / 7. No irrigation system / 8. Others .....

11- How many time did you experience crop damage for the last five years?.....times

1st .....%      2nd .....%      3rd .....%      4th .....%      5th .....%

- What is the reason of the damage

1st .....      2nd .....      3rd .....      4th .....      5th .....

12- Does annual rice yield sufficiently support your family food supply?

{ 1. Yes / 2. No / 3. Surplus}

13- If not, how many months of shortages? {1. Less than a month / 2. Within 1 - 2 months / 3. within 2 - 4 months / 4. Within 4 - 6 month / 5. Within 6 - 8 months / 7. > 8 months}

14- What condition does your family are?

- { 1. Don't have enough money to purchase food
- 2. have adequate money to buy food, but not adequate to by clothes and medicine
- 3. have adequate money to buy food, clothes and medicines , but be unable to save
- 4. have enough money to buy food, clothes, medicines and some saving but unable to buy valuable assets, such as motorbike, TV, good furniture, etc.
- 5. have enough money to buy valuable asset such as motorbike, TV, good furniture...
- 6. have enough money to buy valuable asset and car
- 7. have enough money to buy any things according to our will}

15- What are the other difficulties in your family?

No.	Other difficulties	Serious	Medium	Light
1		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

16- What are the major issues in your community?

No.	Other difficulties	Serious	Medium	Light
1		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

17- Does Punley Sub-Project provide any benefit to your family? { 1. Yes / 2. No}

18- What kinds of benefit does you family get from the project?

- { 1. Have enough water for farming 1 time a year
- 2. have enough water for farming 2 times a year
- 3. gain more fish production than before
- 4. Others.....

19- What are the impact causing by the project on your family? And fill the box with number from 1 to 5 from very serious to slightly serious.

{ 1. .... ☐ 2. .... ☐ 3. .... ☐  
4. .... ☐ 5. .... ☐ }

20- What are your family solution to solve the impact?

1..... 2.....  
3..... 4.....

21- What kind of compensation does your family want to get?

{ 1. Land-to-cash compensation / 2. Land-to-land compensation }

22- If land-to-land compensation is select, what are the criteria for selection suitable



agricultural production land for your family?

1. Distance from village..... Km
2. Distance from irrigation.....Km
3. Soil type.....
4. Distance from road .....Km
5. Located outside flooding area in raining season { 1. Yes / 2. No }
6. Others.....

23- What your family is going to use the compensation money? and why?

- 1..... Because.....
- 2..... Because.....
- 3..... Because.....

24- If your household uses the money to purchase land, what type and location of land?

Location.....Distance from village.....km Land type.....

25. What is the land price of the area? .....

26. Who are you going to buy from? 1..... 2.....  
3.....

## **Appendix 4:**

### **FOCUS GROUP DISCUSSION QUESTIONNAIRE**

## FOCUS GROUP DISCUSSION QUESTIONNAIRE

GROUP:.....

### I. General Information:

1. Sex      Male:..... Female: .....
2. Village: ..... Commune: .....
3. Prepared by: - Coordinator: ..... - Notetaker: .....
4. Date: ..... Started from ..... to .....
6. Participants:

Nº	Names	Age	Sex	Relative to House hold head	HH head status
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					

### II. Economy:

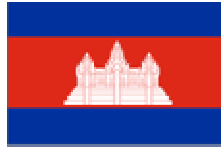
1. How do people make money in the village? Please list at least 15 jobs.  
Of 15 jobs, please select 8 jobs of main source income of people in communities and rank from 1: the most important to 8: lowest important.
2. What are the major changes in the region for the past 5 years, in term of development?
3. Do the changes contribute to improve living condition of people here for the past 5 years?
4. If yes, what are the main factors contribute to the improvement of living condition of the people?
5. What are the other factors which contribute to improvement of living condition of the people in the communities for the last 5 years?
6. What are the main factors which cause poverty issues on the poorest families for the last 5 years?
7. Please write list of the price of daily basic-need goods in the community? (Item, Unit, Price, Condition)

8. Please describe the price of agricultural products, produced in the community? (Item, Unit, Price, Condition)
9. What is the labor cost of agriculture worker and carpenter?
10. What is the price of land in the region? And please fill the land price in the table below.
11. Please list down number of very poor, poor, middle class, and rich family in the village.
12. Why do they become poorest families?
13. What problem do people encounter in their agriculture activities (ex. farming technique, irrigation, fertilizer, seeds, equipment, land, labor, market, transportation, insecticide, etc.)
14. What is the situation of livestock production in community?
15. What are the near future jobs or income opportunities for community people?
16. For people who lost their land more than 10% of their total productive land what is the best way for compensation?  
1./ Money                      2./ Land
17. Besides, compensation what kind of assistance or services will they need to restore their income, especially relate to farming skill? Why?
18. Besides farming skill, what kind of skill do you think that is very help full to them to restore their income? Why?
19. How many members in the family should be provided training?
20. How many NGOs or Community Based Organizations (CBO) are in your community? What are their activities? What are their useful activities to community?
21. When they get compensation, what do people use this money for?
22. If government help you look for replacement land, how far from the village do you think is suitable for people, giving three options? What is the criterion for selection the site? What is the appropriate range of land cost?
23. If you get compensation money, how long do people take in order to be able to buy land?
24. Where are you going to buy land?
25. What land do you plan to buy? What price are you willing pay for the land?
26. What is the problem of women head of household and women issue in general?
27. What kind of assistances do you think it is very useful for women and women head of house hold?

### **III. FINAL COMMENT AND SUGGESTION**

## **Appendix 5:**

### **PUBLIC INFORMATION BOOKLET**



**KINGDOM OF CAMBODIA  
NATION RELIGION KING**



**Inter-ministerial Resettlement Committee**

**North-West Irrigation Sector Project**

**Ministry of Water Resources and Meteorology**

**Ta Saom, Kork Thnong, Don Aov, Canal No.1 and  
Chork Reservoir Sub-Projects**

**PUBLIC INFORMATION BOOKLET**

July-September 2009

Questionnaire 1 : What are the Ta Saom, Kork Thnong, Canal No.1, Don Aov and Chork Reservoir Irrigation Sub-Project?

Answer : Royal Government of Cambodia (RGC) requested redevelopment of Ta Saom, Kork Thnong, Canal No.1, Don Aov and Chork Reservoir Irrigation Sub-Project in Siem Reap and Battambang provinces to Asian Development Bank (ADB) and Agence Française de Développement (AFD). The subprojects are under ADB's loan, Loan No. 2035-CAM [SF] for reconstruction of the irrigation schemes, AFD's grant, covering for consultation services and RGC's counterpart fund for land acquisition and Resettlement required by the subprojects. The Public Information Booklet (PIB) is orientated for the 5 subprojects and for raising awareness of Affected Persons (AHs) on the subprojects and their policy.

Questionnaire 2 : Who is responsible for the 5 Irrigation Subprojects?

Answer : Ministry of Water Resources and Meteorology (MOWRAM) in Phnom Penh takes fully responsible for redeveloping the Irrigation Subprojects by closely collaborating with provincial authority through Provincial Department of Water Resources and Meteorology (PDWRAM) in Siem Reap and Battambang provinces. Provincial implementation unit at PDWRAM will daily monitor progress of the project, including preparation of Resettlement Plan (RP) of the project. RP team of MOWRAM works together with IRC and Provincial sub-committee to prepare and carry out RP.

Questionnaire 3 : Does the subprojects aim to provide benefits to villagers?

Answer : Yes, the subprojects will irrigate the areas where there is insufficient water in raining season and the some area in dry season for rice plantation as well as increasing irrigation system capacity. If your rice land is in the existing system your land will be assisted to increase irrigated capacity. Affected Households (AHs) will be compensated for their lands, trees, crops and other properties at the replacement cost and paid for (i) vulnerable allowance such as poor household, disable household head, woman household head, aged household head and ethnic minority, (ii) transportation allowance, (iii) economic disruption allowance, (iv) income restoration.

Questionnaire 4 : What will be replaced if I lose my land because of the subproject?

Answer : Affected land holders who have their land affected by the subproject will be compensated for their land losses at the replacement cost, because their land will be acquired for constructing irrigation canals. Other lost assets will be also compensated at the replacement cost. If the AHs who lose their land and want replacement land IRC will provide replacement land with similar or better productivity and they will have a right to possessing the land.

Questionnaire 5 : Will my family member and I be provided what kind of work during construction of the subproject?

Answer : All AHs and farmers in command area are entitled to participate in the Embankmentp, canal and footpath construction as construction workers.

Questionnaire 6 : Is it required to have land title of the affected land in order to get cash or land to land compensation?

Answer : Lack of official land ownership document is not an obstacle for AHs to get compensation and other assistances. The cut-off-dates for Ta Saom and Kork Thnong subprojects were on 15 July 2009, Don Aov and Canal No.1 subprojects were on 7 August 2009 and Chork Reservoir subproject was on 10 August 2009. The setting of the cut-off-date is the first date of public consultation meetings with Public Information Booklet (PIB) distribution to all AHs in each subproject.

Questionnaire 7 : Does compensation will be covered on houses or structures

which are affected by the subproject?

Answer : It does. Houses or structures which are affected by the subproject will be compensated at the replacement cost with additional allowance as stating in Table 1. No depreciation cost or left over materials of construction material will be deducted from the replacement cost of affected structures. AHs can construct houses or structures on relocation land which are located nearly former site, have basic facility and have an agreement from AHs.

Questionnaire 8 : For affected perennial crops and trees, what are the solutions?

Answer : For affected annual crops, AHs is provided suitable time, 2 months to harvest before beginning civil work. If AHs cannot harvest their mature rice, crops or fruits on time they will get compensation at the replacement cost. For trees the compensation will be also at replacement cost for total yield of five years (please Table 1).

Questionnaire 9 : What is replacement cost?

Answer : Replacement cost is compensation rate of affected property which is estimated basing on current market price. An independent agency will be hired to study replacement cost for these subprojects.

Questionnaire 10 : For affected community property, what is the solution?

Answer : Replacement of affected community property is required to have discussion with community or relevant agency. Affected building or structure such as bridge and road will be rehabilitated to be the same as pre-project condition or better. If there is lose of expected income (example, community forest, and fish pond) the owner community will receive compensation at the replacement cost or relocates to a new place which have the same productivity capacity.

Questionnaire 11 : If there is a relocation of houses, commercial stall or other structures, what is the assistance from the project to rebuild those structures?

Answer : Affected House or other structures which cannot be moved such as concrete and heavy wooden structures will be compensated at the replacement cost. For affected movable structures, allowances for relocating and transportation of the structure will be provided (Table 1). A discussion with shop, commercial stall owners or community representative will be made to get them participate in the relocation process of commercial structure to the new site.

Questionnaire 12 : How does the project assist AHs or AHs who are severely affected and vulnerable?

Answer : The severely AHs, losing agriculture land more than 10%, vulnerable AHs or relocated AHs will get special allowance to restore their living condition (Table 1).

Questionnaire 13 : When will DMS be conducted?

Answer : The first DMS carried out in July 2009 at Ta Saom and Kork Thnong Subprojects in Siem Reap after demarking in the areas required by the subprojects. The DMS team is composed of Provincial, District and Commune Sub-committee in Siem Reap, an Independent Monitoring Agency and a representative from Non-Government Organization (NGO). The DMS of the other 3 subprojects, Don Aov, Canal No1 and Chork Reservoir were conducted pararely from August to September 2009 with the same participations as the first 2 subprojects in Siem Reap.

Questionnaire 14 : Is it necessary for AHs to immediately provide affected land



and demolish affected house or other structures?

Answer : It is not. The provision of affected land and demolition of house and other structures will be hold after providing compensation of those affected assets and other allowance assistance for 15 days and with consultation with AHs.

**Table 1: Entitlement of AHs or AHs for receiving compensation and other assistances**

Type and Level of Impact	Entitlement AHs or AHs	Compensation Policy and Restoration Measurement	Implementation
<b>1. Loss of Land</b>			
a. Temporary affected agricultural or residential land	Legal land owner or holder who has their land temporary affected during construction of the project.	Compensation is based on replacement cost for loss property and pay to land owner or holder to restore to the same condition as before the project or better than.	
b. Loss of land in the right-of-way of the canal, river, stream.	Occupant of agricultural or residential land in the right-of-way of the canal, river, stream..	There is no compensation on land but they can benefit from fixed asset compensation such as structures and trees as well as other restoration measearement.	The land in the right-of-way of the canal, river, stream are the land located on the Embankment of canal, river and stream embankment where it is risk of land slide and erosion.
c. Permanent affected agricultural or residential land in command	Legal land owner or holder registered in the DMS.	As priority: <b>a:</b> Compensation will be through land to land compensation basing on AH selection to get agricultural and residential land which have equal area or productivity. <b>b:</b> Land to cash compensation will be used basing on replacement cost without paying tax, registration fee or transferring fee.	If loss of land is minor or less than 10% of total AH agricultural land, AHs can chose land to cash compensation for their affected land, equaling to replacement cost.
<b>2. Loss of house or other structures</b>			
Affected house, commercial or other private structures	Legal owner registered in DMS.	Cash compensation of part or entire structures will be based on replacement cost of construction materials and labor without considering deprivation of the construction material and remain materials after demolishing the structures.	
<b>3. Loss of annual and perennial crops and tree</b>			
Annual and perennial crops and tree have long life.	Owner or occupant of the crops or tree.	<b>a. Annual crop:</b> AHs will be informed in advance for two month on acquisition of the cropping land and on harvesting dateline of their crop. The compensation of the loss of the crop will be at the replacement cost of annual crop yield. <b>b. Perennial crop and tree:</b> AHs will be compensated on the loss of fruit and tree. The	Compensation shall be before construction by provide sufficient time to AHs to be able to harvest crop or fruit.

Type and Level of Impact	Entitlement AHs or AHs	Compensation Policy and Restoration Measurement	Implementation
		compensation will be calculated basing on annual average yield for the past five years in order to restore AH income at the time from beginning of planting until harvest tree.	
<b>4. Loss of public or community property</b>			
Public or community property	Affected community or relevant government agency.	<b>a.</b> Rehabilitating public or community property. <b>b.</b> Relocate to a new site in consultation with affected community and relevant local authority.	
<b>5. Allowance assistance and relocation</b>			
a. Transportation allowance	It is for AHs who required to move or relocate the structures to unaffected area.	<b>a.</b> Transport allowance from USD 10 to 20 is for commercial stall. <b>b.</b> Transport allowance of USD 40 is for moving house or structure to nearby area. <b>c.</b> Transport allowance of USD 60 is for moving structure to different location in the same village. <b>d.</b> Transport allowance of USD 70 is for moving structure to different location in the same commune.	
b. Living assistance during transition period	It is for AH who is required to move their structure back or to relocate to new site.	<b>a.</b> Assistance is in cash equaling 20Kg of rice per AH per month or USD 25 per AH who has house or structure smaller than 60m <sup>2</sup> from type 1A to 2D type. <b>b.</b> Assistance is in cash equaling 20Kg of rice per AH for 3 months or USD 75 per AH who has concrete or wooden house smaller than 60m <sup>2</sup> from type 2E to 4D. <b>c.</b> Assistance is in cash equaling to 20Kg of rice per AH for 6 months or USD 150 per AH for concrete or wooden house larger than 60m <sup>2</sup> from type 2E to 4D.	
c. Special assistance for severely affected AH	AH loses their agricultural land more than 10% of their agricultural land.	Assistance is in cash equaling 20Kg of rice for each AH for 6 months or USD 150 per AH.	
d. Special assistance for vulnerable AH	Vulnerable AH is: (i) widow household head, (ii) disable household head, (iii) aged household head, (iv) poor household, (v) ethnic minority household.	This is an additional assistance to replacement cost compensation of affected property. Vulnerable AH will get in cash special assistance equaling 20Kg of rice per vulnerable AH for 6 months or USD 150 per vulnerable AH.	

**Appendix 6:**

**REPLACEMENT COST STUDY REPORT**

KINGDOM OF CAMBODIA  
NATION RELIGION KING

**The Inter-Ministry Resettlement Committee**

**North-West Irrigation Sector Project**

**(Loan No. 2035-CAM [SF])**

**FINAL REPORT**

**Replacement Cost Study for  
Ta Saom, Kork Thnong, Don Aov, Canal No. 1  
and Chork Reservoir Sub-Projects**

By: Ung Nareth

November 2009

## TABLE OF CONTENTS

TABLE OF CONTENTS.....	ii
<b>ACRONYMS AND ABBREVIATIONS .....</b>	<b>iv</b>
<b>1. INTRODUCTION .....</b>	<b>2</b>
<b>2. METHODOLOGY .....</b>	<b>2</b>
2.1 Data Gathering Instruments and Procedures.....	2
2.2 Participation of Public in the Survey.....	2
2.3 Processing Data .....	2
<b>3. RESULT OF THE STUDY .....</b>	<b>3</b>
3.1 Ta Saom Subproject .....	3
3.2 Kork Thnong Subproject .....	6
3.3 Don Aov Subproject.....	11
3.4 Canal No. 1 Subproject.....	15
3.5 Chork Reservoir Subproject.....	20

## APPENDICES

Appendix 1	Replacement Cost Study Questionnaires
Appendix 2	Terms of References

## ACRONYMS AND ABBREVIATIONS

ADB	Asian Development Bank
AFD	Agence Française de Développement
AHs	Affected Household(s)
APs	Affected Person(s)
DMS	Detailed Measurement Survey
FGDs	Focused Group Discussions
ha	Hectare
IRC	Inter-ministerial Resettlement Committee
MOWRAM	Ministry of Water Resources and Meteorology
NWISP	North-West Irrigation Sector Project
PDAFF	Provincial Department of Agriculture, Forests and Fisheries
PIU	Project Implementation Unit
RCS	Replacement Cost Study
RP	Resettlement Plan
RU	Resettlement Unit
TOR	Terms of Reference



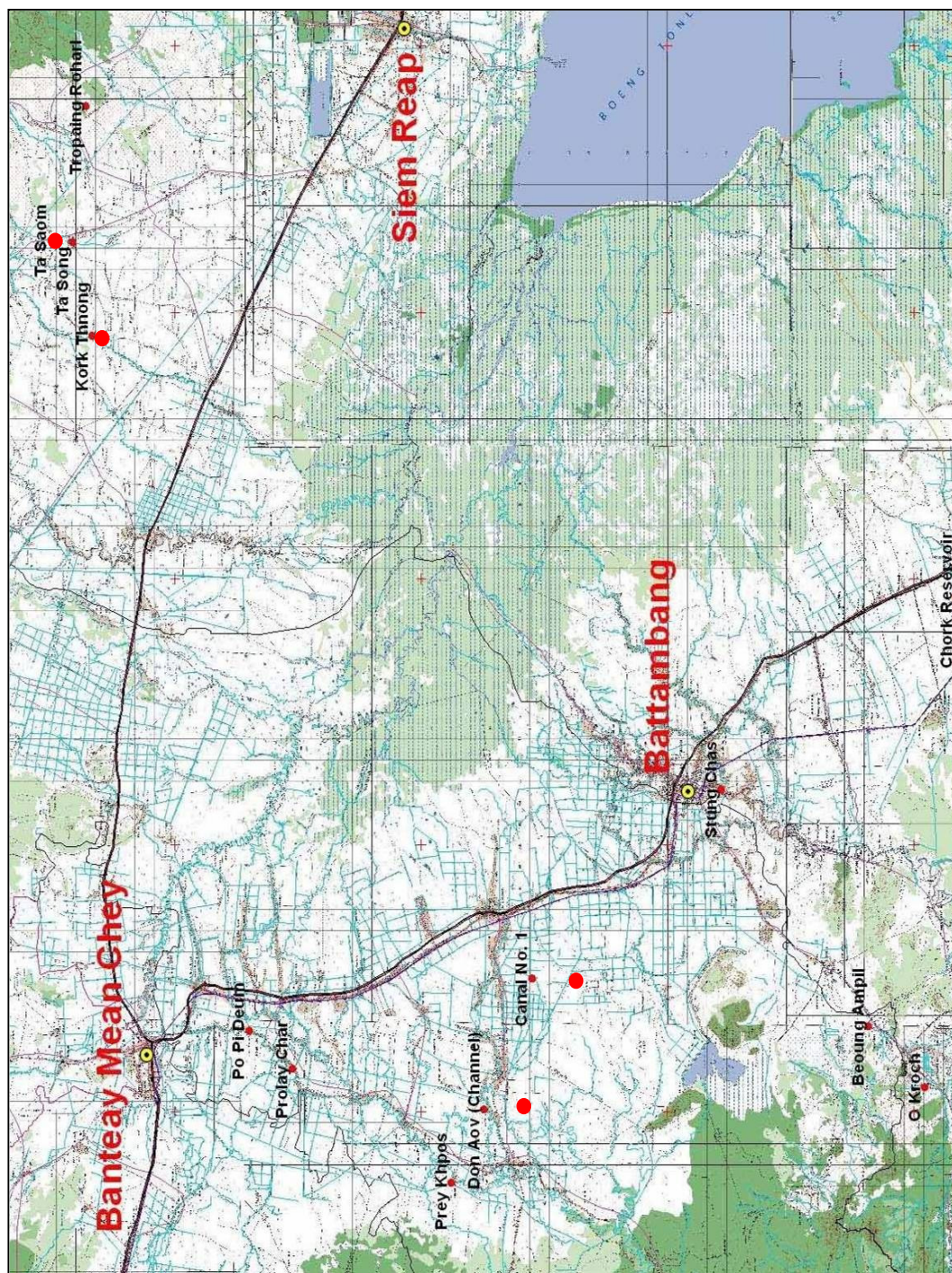


Figure 1-1: Location Map of Ta Saom, Kork Thnong, Don Aov, Canal No. 1 and Chork Reservoir Subprojects

## **1. INTRODUCTION**

The Ta Saom, Kork Thnong, Don Aov, Canal No. 1 and Chork Reservoir subprojects are five of the core subprojects in Northwest Irrigation Sector Project (NWISP), supported by Asian Development Bank (ADB) and Agence Française de Développement (AFD). The subproject sites are located in Seam Reap and Battambang provinces and at the North of National Road No. 6 and at the West of National Road No. 5 (see **Figure 1-1**).

The subprojects involve the reconstruction and improvement of the existing and construction of new schemes and aim to irrigate 4,000ha agricultural land. With this irrigated capacity, the subprojects will construct 107.5km length of main canals, secondary canals, drainages and dams and hundreds of irrigation structures.

The project is required to acquire approximately 73ha agricultural land, 0.4ha residential land, 1,244 tree and perennial crop as well as numbers of other properties such as house, small shop, stall, well, fence etc. Thus, compensation on the losses of those assets at present market price is very vital for Affected Persons (APs).

The objective of this study is to conduct a Replacement Cost Study (RCS) in Ta Saom, Kork Thnong, Don Aov, Canal No. 1 and Chork Reservoir subproject regions in order to study current market price of the affected properties and establish reasonable and up-to-date compensation rate for different types of affected assets in order to calculating the Resettlement Plan (RP) budget of the subprojects.

The study was conducted in September 2009 for Ta Saom and Kork Thong subprojects and in October 2009 for Don Aov, Canal No. 1 and Chork Reservoir subprojects. For each subproject, the study conducted on 30 AHs and non AHs, 4 carpenter groups, 3 shop owners, 2 seeds suppliers, 5 vendors, 3 village leaders and a Focus Group Discussion (FGD) of 3-5 different APs in the affected villages.

## **2. METHODOLOGY**

### **2.1 Data Gathering Instruments and Procedures**

The establishment of replacement costs will be carried out based on information collected from both Desk research and Direct interviews with people in affected area, both those persons who are affected and not affected.

The Desk research will focus on relevant publications, Punley RP of NWISP in 2009, Stung Chinit RP phase I, II and III in Kampong Thom province in 2006, budget estimation of Ta Saang Cham Bok and Kampong Chrey in Svay Reang province in 2008, replacement cost study of ADB Road Improvement Project, NR5 and NR6, in 2005.

The field survey of RCS is conducted in September 2009 for Ta Saom and Kork Thnong subprojects and in October 2009 for Don Aov, Canal No. 1 and Chork Reservoir subprojects. For each subproject, the survey is conducted from 30 AHs and non AHs, 4 carpenter groups, 3 construction material shop owners, 5 vegetable and fruit vendors, 3 village leaders and in Focus Group Discussion (FGD) of 2-4 different AP groups in the affected villages.

### **2.2 Participation of the Public in the Survey**

Members of the Commune Council and village headmen took part in the household RPC survey of APs, and the FGDs. All household interviews and the FGD meetings were conducted with the assistance of the household heads, the village headmen, Inter-ministerial Resettlement Committee (IRC) in the Seam Reap and Battambang provinces and Resettlement Unit (RU) of Ministry of Water Resource and Meteorology (MOWRAM).



## **2.3 Processing of Data**

The data, which is collected from the field survey and secondary data, are processed in MS EXCEL software. The compensation rate calculations of RCS are also made in EXCEL.

## **3. RESULT OF THE STUDY**

### **3.1 Ta Saom Subproject**

Ta Saom subproject is one of the two subprojects of NWISP in Seam Reap province. The subproject is located about 43 km south of Seam Reap provincial town and in Ta Saom commune of Angkor Chum district. The construction of subproject is necessary to acquire, according to DMS data, rice and residential lands and 6 types of tree.

#### **3.1.1 Replacement Costs from Various Groups**

##### ***Agricultural and Residential Land***

The survey indicates that the prices of agricultural and residential land are varied depending on its land use and proximity to village, road and irrigation system and depending on fertility of the land. According to the DMS report of Ta Saom subproject, two villages, Kork Thmei and Kork Chan are affected by the subproject where are located 25km and 29km north of National Road No. 6 and 3.5km from Ta Saom commune center.

Generally, the survey found that the land price of rice land in Ta Saom subproject region is from \$2,000 per ha to \$2,500 per ha in west of Kork Thmei and Kork Chan villages, respectively (See **Figure 3-1**). Thus, the average land price of the two affected villages in the subproject is \$2,300 per ha.

The survey indicates that the residential land price of Kork Thmei where is far from main access road is \$8,000 per ha and the residential land price of Kork Chan where is located on main access road has the price of \$15,000 per ha (See **Figure 3-1**). However, the affected residential land is in Kork Thmei village, so the compensation rate for residential land is \$8,000 per ha.

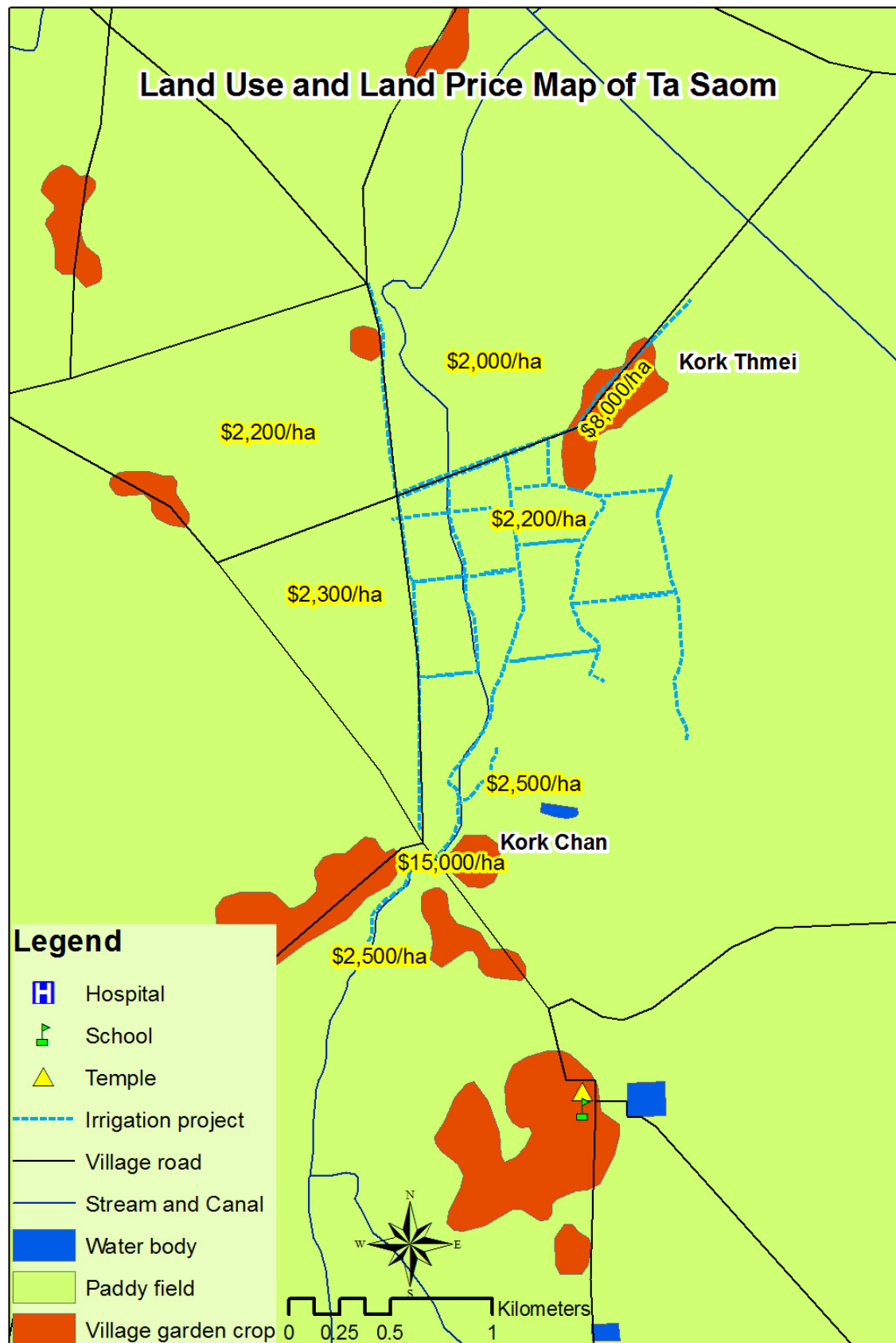


Figure 3-1: Land use and land price map of Ta Saom

### ***Perennial Crop and Tree***

The mango, sugar palm, coconut, papaya, guava, jackfruit, bamboo, jambolan, custard apple, banana, tamarind, Kraseing and other non-fruit trees are the potential affected trees which APs plant in the subproject area. According to the survey, AH and the villagers in the area rarely sell their garden agriculture product to the village vendors, but keeping for family usage and sharing among their neighbors.

The average yield, price and compensation year of each affected trees is described in **Table 3-1-3** as below:

**Table 3-1-3: List of trees, yield, fruit price and compensation year in Ta Saom**

No	Type of tree	QTY	Unit	Yield/ year	Unit	Unit price (\$)	Price/y ear (\$)	Year for Compen sation	Compen sation rate (\$)
1	Mango	1	tree	220	fruit	0.028	6.050	5	30.25
2	Sugar palm	1	tree	-	-	-	-	8	25.00
3	Coconut	1	tree	28	fruit	0.238	6.650	5	33.25
4	Papaya	1	tree	15	fruit	0.250	3.750	1	3.75
5	Guava	1	tree	250	fruit	0.006	1.500	3	4.50
6	Jackfruit	1	tree	7	fruit	1.571	10.997	3	33.00
7	Bamboo	1	thicket	13	shoot	0.250	3.250	3	10.00
8	Jambolan	1	tree	20	can	0.100	2.000	4	8.00
9	Custard apple	1	tree	60	fruit	0.050	3.000	2	6.00
10	Banana	1	tree	6	hand	0.250	1.500	1	1.50
11	Tamarind	1	tree	-	-	-	5.400	5	27.00
12	Kraseing	1	tree	400	fruit	0.008	3.200	3	10.00
13	Others	1	tree	-	-	-	-	-	5.00

Other trees, which do not produce fruit for food, will be compensated for US\$ 5 per tree.

### ***3.1.2 Compensation Rates***

Basing on the **Table 3-1-1** to **Table 3-1-3** and **Figure 3-1** the compensation rate for Po Pi Dem subproject can be concluded as **Table 3-1-4** below:

**Table 3-1-4: Compensation Rate of Affected Asset of Ta Saom**

NO	TYPE OF AFFECTED ASSET	UNIT	UNIT PRICE (US\$)	REMARK
<b>I</b>	<b>Land</b>			
1	Residential land	m <sup>2</sup>	0.80	
2	Rice land	m <sup>2</sup>	0.23	
<b>II</b>	<b>Tree</b>			
1	Mango	tree	30.25	
2	Sugar palm	tree	25.00	
3	Coconut	tree	33.25	
4	Papaya	tree	3.75	
5	Guava	tree	4.50	
6	Jackfruit	tree	33.00	
7	Bamboo	thicket	10.00	
8	Jambolan	tree	8.00	

9	Custard apple	tree	6.00	
10	Banana	tree	1.50	
11	Tamarind	tree	27.00	
12	Kraseing	tree	10.00	
13	Others (non fruit tree)	tree	5.00	

## 3.2 Kork Thnong Subproject

Kork Thnong subproject is second subproject of NWISP in Seam Reap and located about 53km from Seam Reap provincial town and in Cha Chhouk commune of Angkor Chum district. The new scheme is required to acquire rice, Chamkar and residential lands as well as fruit trees.

### 3.2.1 Replacement Costs from Various Groups

#### *Houses and Other Structures*

The survey of the construction materials is conducted on two carpenter groups in Kork Thnong subproject and three construction material shops in Pourk and Angkor Chum district of Seam Reap province. The synthesis of the material prices is reported in the **Table 3-2-1** as below:

**Table 3-2-1: List of relevant construction material of Kork Thnong**

NO	CONSTRUCTION MATERIALS	UNIT	UNIT PRICE (US\$)	REMARK
1	Good timber	m <sup>3</sup>	330.00	(1)
2	Mixed timber	m <sup>3</sup>	280.00	(2)
3	Sub-standard timber	m <sup>3</sup>	210.00	(3)
4	Bamboo (0.11m x 7m)	pole	0.90	
5	Bamboo (0.05m x 6m)	pole	0.58	
6	Bamboo for rafter (Φ3cm x 4m x 20)	bunch	3.50	
7	Splitted bamboo (2mx20 pieces)	bunch	1.43	
8	Wooden window	m <sup>2</sup>	40.00	
9	Wooden door	m <sup>2</sup>	50.00	
10	Round wooden pole for column (Φ15cmx5m)	pole	5.90	
11	Round wooden pole for column (Φ10cmx4m)	pole	4.10	
12	Round wooden pole for column (Φ8cmx4m)	pole	2.60	
13	Round wooden pole for wall & roof (Φ5cmx4m)	pole	2.00	
14	Concrete footing pole (1.2m)	pole	3.10	
15	Roofing thatch from Sbov (1.2m)	sheet	0.13	
16	Roofing thatch from Sleuk Thnort (1.2m)	sheet	0.10	
17	Zinc roofing sheet (0.3mm)	m <sup>2</sup>	2.20	
18	Hollow or solid clay brick	brick	0.04	
19	Cement (Mountain)	bag	3.85	
20	Sand	m <sup>3</sup>	8.50	
21	Stone (4x6cm)	m <sup>3</sup>	18.00	
22	Gravel (1x2cm)	m <sup>3</sup>	23.00	
23	Steel bar	tone	580.00	
24	Steel nail	kg	1.50	
25	Steel wire	kg	1.50	
26	Barbed wire	roll	30.00	

Note:

- (1) : Good timber is typical timber for construction of wooden house and in good shape. This kind of timber is consisted of Trach, Pcheck, Chunlin, Cheu Teal, etc.
- (2) : Mixed timber is construction timber, which don't have good size and mixed with different kind of low quality construction wood such as Cheul Teal, Svay, Phdeak, etc.
- (3) : Sub-standard timber is low quality construction timber without proper size for construction. It is piece of timber with short, curve, broken timber.

The survey shows that the labor cost for carpenter to construct typical wooden house with zinc roof is about US\$ 15 per square meter or approximately 20% of total construction cost. The labor for skilled carpenter is US\$ 6 a day and unskilled labor is US\$ 2.75 a day. The labor cost for simple small house through food for work is ranking from US\$ 1.25 to US\$ 3.25 per square meter or about 7% to 23% of total construction cost, depending on type of the structure. Transportation cost of construction material shares approximately 8% of construction cost depending on construction material type.

Basing on the material prices above and typical structure of houses, vendor stall, chicken pen type, the price per square meter can be estimated as **Table 3-2-2** below:

**Table 3-3-2: List of the estimated price for structure element of Kork Thnong**

NO	STRUCTURE ELEMENT	UNIT	UNIT COST (US\$)
<b>I</b>	<b>Column</b>		
1	Concrete footing pole (1.2m)	pole	3.10
2	Timber column (15cm x 15cm)	m	7.42
3	Timber column (12cm x 12cm)	m	4.75
4	Round wooden column (Φ 15cm)	m	1.18
5	Round wooden column (Φ 10cm)	m	1.03
6	Round wooden column (Φ 8cm)	m	0.65
7	Round wooden column (Φ 5cm)	m	0.50
<b>II</b>	<b>Floor</b>		
1	Wooden board floor and timber beam structure	m <sup>2</sup>	15.00
2	Wooden board floor & timber structure (mixed wood)	m <sup>2</sup>	12.00
3	Bamboo floor	m <sup>2</sup>	3.10
<b>III</b>	<b>Wall</b>		
1	Wooden wall with wooden structure	m <sup>2</sup>	9.00
2	Wooden wall with wooden structure (mixed timber)	m <sup>2</sup>	6.35
3	Thatch wall with wooden structure	m <sup>2</sup>	2.60
<b>IV</b>	<b>Window and door</b>		
1	Wooden door	m <sup>2</sup>	32.00
2	Wooden window	m <sup>2</sup>	35.00
3	Thatch window with bamboo structure	m <sup>2</sup>	2.20
<b>V</b>	<b>Roof</b>		
1	Wooden structure for zinc roof (good timber)	m <sup>2</sup>	9.20
2	Wooden structure for zinc roof (mixed timber)	m <sup>2</sup>	6.60
3	Wooden structure for thatch roof (mixed timber)	m <sup>2</sup>	4.95
4	Wooden structure for thatch roof (mixed timber/bamboo)	m <sup>2</sup>	3.35
5	Wooden structure for small thatch roof (mixed timber/bamboo)	m <sup>2</sup>	1.30
6	Zinc roofing sheet	m <sup>2</sup>	2.10
7	Thatch	m <sup>2</sup>	0.80

Note: The price for the structure element about is excluded labor cost.

***Agricultural and Residential Land***

Affected rice land is located in Ka Trakiet, Kork Thnong and Prey Cheng villages in the remote area of Cha Chhouk commune. The rice land price of the three villages is varied from \$1,800 per ha to \$2,000 per ha, depending on the location of land which can contain flooded and rain water for rice cultivation (See **Figure 3-2**). Thus, the average rice land price to establish compensation rate can be concluded as \$1,900 per ha.

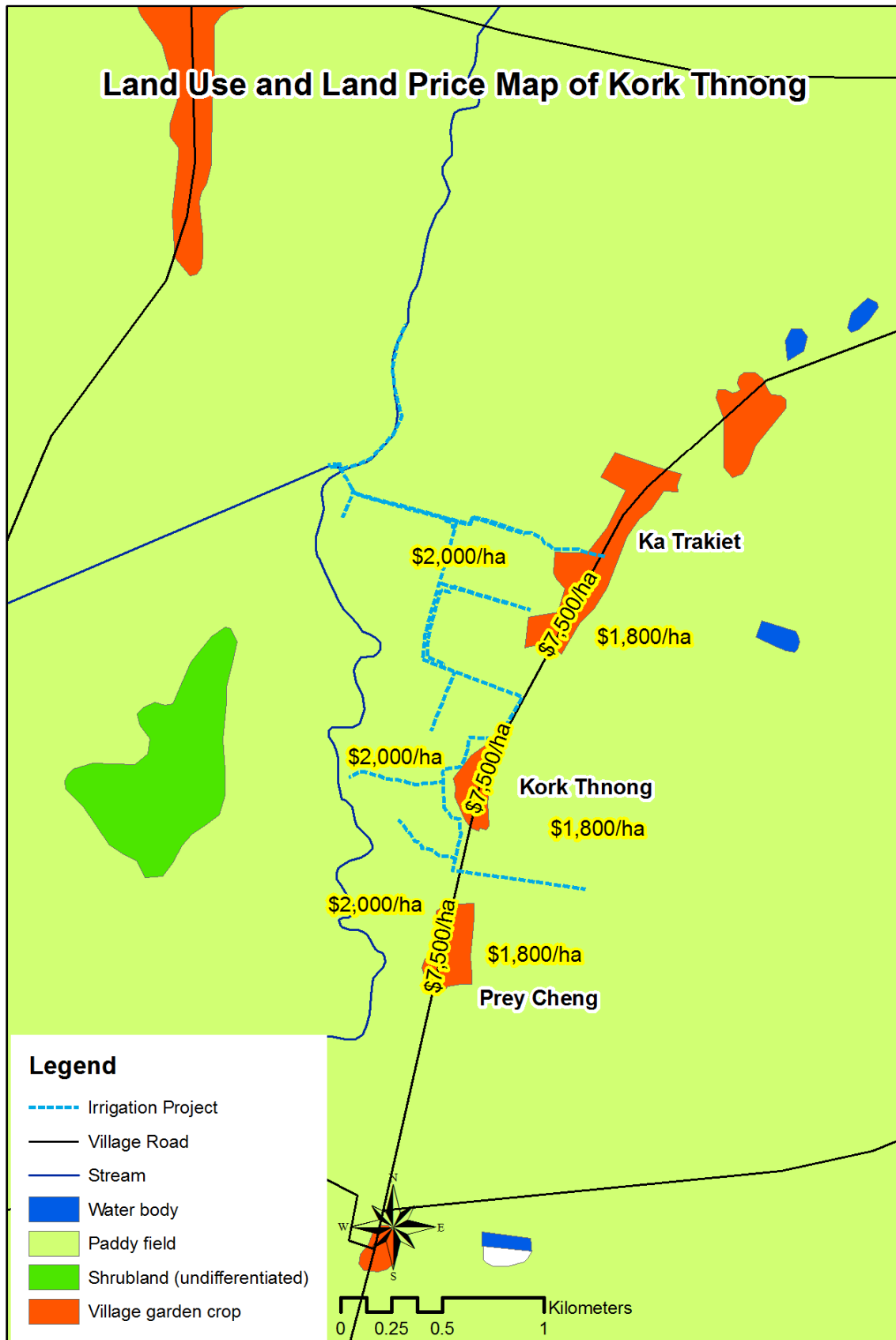


Figure 3-2: Land use and land price map of Kork Thnong

The survey found that the residential land price of the three affected villages is equally at the price of \$7,500 per ha (See **Figure 3-2**). The affected residential land is only in Ka Trakiet village, so the compensation rate for the residential land price is \$7,500 per ha.

The DMS data reports that the construction of Secondary Drain impacts on a lot of affected Chamkar land in Kork Thnong village. The affected Chamkar lands are in undeveloped land behind the residential lot which have the price of \$ 7,500 per ha as above data. AHs use the land for cultivating vegetable and fruit tree and as future residential land. The price of the Chamkar land is \$5,500 per ha.

### ***Perennial Crop and Tree***

Construction of the subproject will affect on 8 types of fruit trees such as sugar palm, guava, bamboo, jambolan, banana, tamarind, Kraseing and others non fruit trees. Palm and bamboo are reported as major affected tree in the DMS.

Among those trees, none of them are planted for commercializing. The fruit trees are for household use and sometime for sharing with neighbors in the village. For palm tree, because of lack of fire wood, villager abandoned sugar production long time ago. Palm juice, fruit and leafs are the only benefit of the tree. The yield, price and compensation year of each affected trees and other potential affected trees are described in **Table 3-2-3** as below:

**Table 3-2-3: List of trees, yield, fruit price and compensation year in Kork Thnong**

No	Type of tree	QTY	Unit	Yield/ year	Unit	Unit price (\$)	Price/y ear (\$)	Year for Compen sation	Compen sation rate (\$)
1	Mango	1	tree	220	fruit	0.028	6.050	5	30.25
2	Sugar palm	1	tree	-	-	-	-	8	25.00
3	Coconut	1	tree	28	fruit	0.238	6.650	5	33.25
4	Papaya	1	tree	15	fruit	0.250	3.750	1	3.75
5	Guava	1	tree	250	fruit	0.006	1.500	3	4.50
6	Jackfruit	1	tree	7	fruit	1.571	10.997	3	33.00
7	Bamboo	1	thicket	13	shoot	0.250	3.250	3	10.00
8	Jambolan	1	tree	20	can	0.100	2.000	4	8.00
9	Custard apple	1	tree	60	fruit	0.050	3.000	2	6.00
10	Banana	1	tree	6	hand	0.250	1.500	1	1.50
11	Tamarind	1	tree	-	-	-	5.400	5	27.00
12	Kraseing	1	tree	400	fruit	0.008	3.200	3	10.00
13	Others	1	tree	-	-	-	-	-	5.00

Other trees, which do not produce fruit for food, will be compensated for US\$ 5 per tree.

### ***3.2.2 Compensation Rates***

Basing on the **Table 3-2-1** to **Table 3-2-3** and **Figure 3-2** the compensation rate for Kork Thnong subproject can be concluded as **Table 3-2-4** below:



**Table 3-2-2: Compensation Rate of Affected Asset of Kork Thnong**

NO.	TYPE OF AFFECTED ASSET	UNIT	UNIT PRICE (US\$)	REMARK
<b>I Main Structure</b>				
1	Residential structure type 1	m <sup>2</sup>	20.50	(1)
2	Residential structure type 2	m <sup>2</sup>	36.00	(2)
3	Residential structure type 3	m <sup>2</sup>	65.00	(3)
<b>II Other Structures</b>				
1	Vendor stall	m <sup>2</sup>	4.45	(4)
2	Wooden fence	m	3.60	(5)
<b>III Land</b>				
1	Rice land	m <sup>2</sup>	0.19	
2	Chamkar land	m <sup>2</sup>	0.55	
3	Residential land	m <sup>2</sup>	0.75	
<b>IV Tree</b>				
1	Mango	tree	30.25	
2	Sugar palm	tree	25.00	
3	Coconut	tree	33.25	
4	Papaya	tree	3.75	
5	Guava	tree	4.50	
6	Jackfruit	tree	33.00	
7	Bamboo	thicket	10.00	
8	Jambolan	tree	8.00	
9	Custard apple	tree	6.00	
10	Banana	tree	1.50	
11	Tamarind	tree	27.00	
12	Kraseing	tree	10.00	
13	Others (non fruit tree)	tree	5.00	

Note:

- (1) : The house is made from round wooden pole, mixed timber in floor and structure, thatch wall and roof and small structure.
- (2) : The house is made from mixed timber in floor, wall and structure and zinc roofing sheet and small structure.
- (3) : The house is made from good timber in floor, wall and structure and zinc roofing sheet and big structure.
- (4) The vendor stall is made from round timber and mixed timber in column and structure with thatch roof.
- (5) : The fence is made from wood (Krak) with 15cm diameter, 1.8m height, 1.5m distance of pole and 5 lines of barbed wire.

### 3.3 Don Aov subproject

Don Aov is one of three subprojects of NWISP in Battambang province. The subproject is located Lovea commune, Bovel district of Battambang province and Seur and Cham Noam commune, Monkul Borey district of Banteay Meanchey province and about 9km west of National Road No. 5. The subproject is estimated to irrigate 1,100ha for supplementary irrigation scheme in the wet season. The new scheme is required to acquire rice, Chamkar and residential lands and fruit trees.

### **3.3.1 Replacement Costs from Various Groups**

#### ***Agricultural Land and Residential***

The survey indicates that the prices of agricultural and residential land are also diverse depending on its proximity to village, road and irrigation as well as fertility of the land. The economic and real estate crisis, at the present, make less demand for land and the land price of the subproject area is sharply fall.

The land price of the rice land in the affected areas is from US\$2,800 to US\$3,500 per ha, depending on the location (See **Figure 3-3**). Chamkar, Ream Sena, Don Aok, Ta Moav, Thnot, Bour, Bos Loak, Plov Damrey Leu, Seur, O Seur, Chour Kchas and Ta Bun villages are the 12 affected villages of the subproject. In Ta Bun village the rice land price is the lowest, \$2,800 per ha, in the affected area, because the land is lack of water for rice cultivation. The highest rice land price, \$3,500 per ha is the rice land along the village road in Chamkar village where is easy to access from the road. The average rice land price of the 12 affected villages can be concluded to \$3,200 per ha.

Chamkar land which is affected by the subproject is only situated in Chour Kchas village and belongs to two AHs. The land is located behind the residential land where a vegetables and fruit trees are grown there and is for future subdivision to be residential land. The Chamkar land price of the Chour Kchas village is \$13,000 per ha.

Affected residential land is located in Chour Kchas village of Cham Noam commune and Ream Sena village of Lovea commune. The survey found that the residential land price of Chour Kchas village is \$22,000 per ha and the residential land price in Ream Sena village and at the affected location (Main Drain) is \$20,000 per ha (See **Figure 3-3**). Therefore, the average residential land price for compensation rate is \$21,000 per ha.

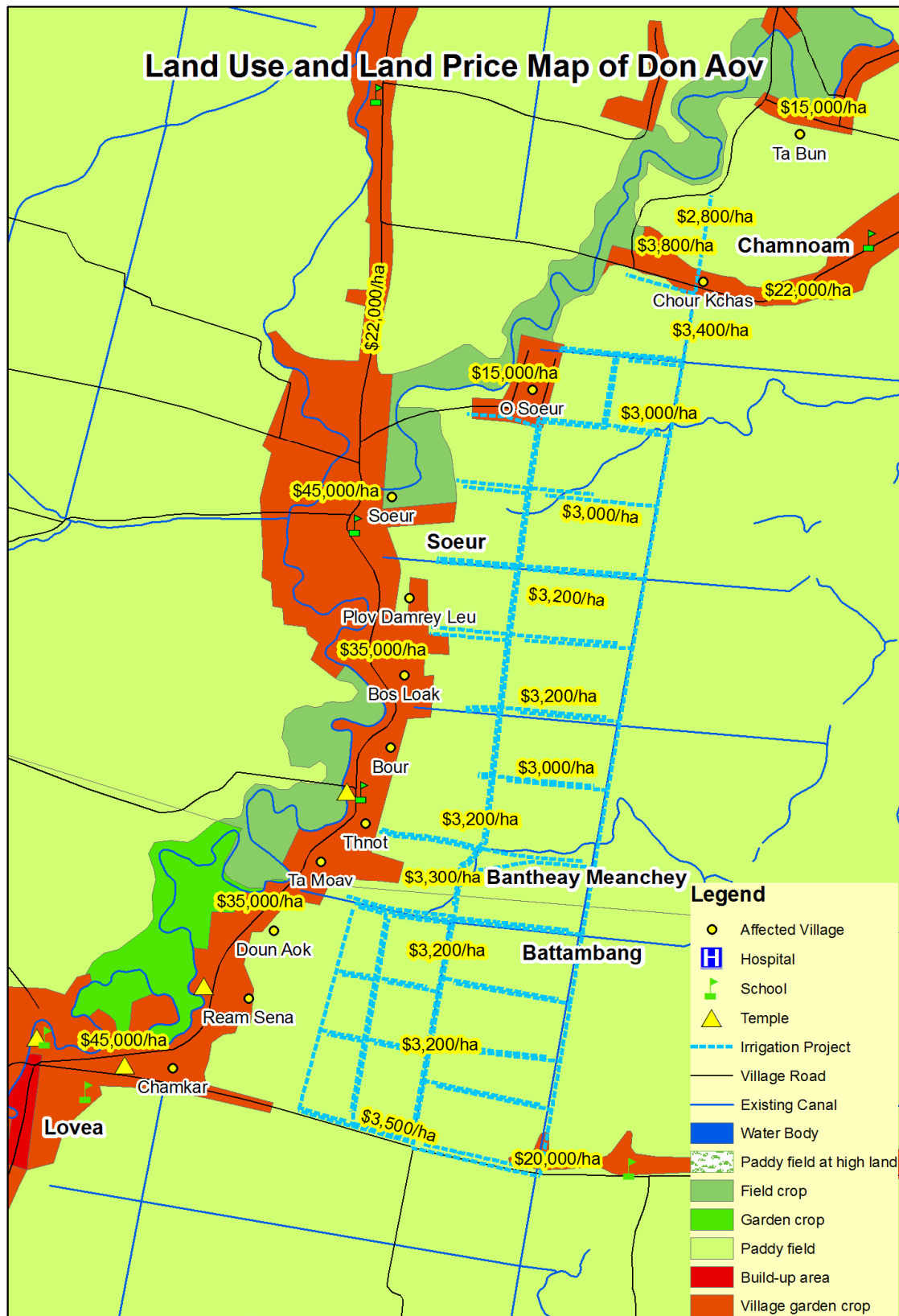


Figure 3-3: Land use and land price map of Don Aov

### Perennial Crop and Tree

The subproject will affect on 15 types of fruit trees such as mango, sugar palm, coconut, Teuk Doh Kor, cashew, papaya, guava, citrus, jackfruit, bamboo, Jambolan, custard apple, banana, tamarind, Krasang and others non fruit trees. Jambolan, mango, coconut, banana, citrus, Teuk Doh Kor and palm are dominant in the DMS record. But the important fruit trees are coconut, Teuk Doh Kor, banana, jackfruit and mango. Most of the trees are affected by Main Canal and Dam in Kab Kralahn and Bakan villages.

Among those trees, none of them are planted for commercializing. The fruit trees are for household use and sometime for sharing with neighbors in the village. For palm tree, because of lack of fire wood, villager abandoned producing sugar. Palm juice, fruit and leafs are the only benefit of the tree. The yield, price and compensation year of each affected trees is described in **Table 3-3-1** as below:

**Table 3-3-1: List of trees, yield, fruit price and compensation year in Don Aov**

No	Type of tree	QTY	Unit	Yield/ year	Unit	Unit price (\$)	Price/year (\$)	Year for Compensation	Compensation rate (\$)
1	Mango	1	tree	240	fruit	0.024	5.700	5	28.50
2	Sugar palm	1	tree	-	-	-	-	8	25.00
3	Coconut	1	tree	28	fruit	0.200	5.600	5	28.00
4	Longan	1	tree	12	kg	0.625	7.500	4	30.00
5	Orange	1	tree	261	fruit	0.023	6.000	5	30.00
6	Papaya	1	tree	20	fruit	0.188	3.750	1	3.75
7	Guava	1	tree	222	fruit	0.006	1.332	3	4.00
8	Jackfruit	1	tree	7	fruit	1.530	10.710	3	32.13
9	Bamboo	1	thicket	16	shoot	0.178	2.840	3	8.52
10	Jambolan	1	tree	20	can	0.100	2.000	4	8.00
11	Custard apple	1	tree	50	fruit	0.050	2.500	2	5.00
12	Banana	1	tree	7	hand	0.215	1.505	1	1.51
13	Tamarind	1	tree	-	-	-	5.000	5	25.00
14	Kraseing	1	tree	400	fruit	0.008	3.200	3	10.00
15	Others	1	tree	-	-	-	-	-	5.00

Other trees, which do not produce fruit for food, will be compensated for US\$ 5 per tree.

### 3.3.2 Compensation Rates

Basing on the **Table 3-3-1** and **Figure 3-3** the compensation rate for Don Aov subproject can be concluded as **Table 3-3-2** below:

**Table 3-3-2: Compensation Rate of Affected Asset of Don Aov**

NO	TYPE OF AFFECTED ASSET	UNIT	UNIT PRICE (US\$)	REMARK
<b>I</b>	<b>Land</b>			
1	Residential land	m <sup>2</sup>	2.10	
2	Chamkar land	m <sup>2</sup>	1.30	
3	Rice land in command area	m <sup>2</sup>	0.32	
<b>II</b>	<b>Tree</b>			
1	Mango	tree	28.50	
2	Sugar palm	tree	25.00	
3	Coconut	tree	28.00	

4	Longan	tree	30.00	
5	Orange	tree	30.00	
6	Papaya	tree	3.75	
7	Guava	tree	4.00	
8	Jackfruit	tree	32.13	
9	Bamboo	thicket	8.52	
10	Jambolan	tree	8.00	
11	Custard apple	tree	5.00	
12	Banana	tree	1.51	
13	Tamarind	tree	25.00	
14	Kraseing	tree	10.00	
15	Others (non fruit tree)	tree	5.00	

### 3.4 Canal No. 1 Subproject

Canal No. 1 is the second subproject of NWISP in Battambang province. The subproject is located about 1.5 km south of National Road No. 157 in Thma Koul and Bovel district of Battambang province and next to Koak Ream market. The subproject is estimated to irrigate 982ha for supplementary irrigation scheme in the wet season and is required to acquire rice and residential lands and fruit trees.

#### 3.4.1 Replacement Costs from Various Groups

##### *Houses and Other Structures*

The survey of the construction materials is conducted on three carpenter groups in Canal No. 1 subproject and four construction material shops in Bovel and Thma Koul district Battambang province. The synthesis of the material prices is reported in the **Table 3-4-1** as below:

**Table 3-4-1: List of relevant construction material of Canal No.1**

NO	CONSTRUCTION MATERIALS	UNIT	UNIT PRICE (US\$)	REMARK
1	Good timber	m <sup>3</sup>	350.00	(1)
2	Mixed timber	m <sup>3</sup>	310.00	(2)
3	Sub-standard timber	m <sup>3</sup>	250.00	(3)
4	Bamboo (0.11m x 7m)	pole	0.70	
5	Bamboo (0.05m x 6m)	pole	0.43	
6	Bamboo for rafter (Φ3cm x 4m x 20)	bunch	3.00	
7	Splitted bamboo (2mx20 pieces)	bunch	1.25	
8	Wooden window	m <sup>2</sup>	48.00	
9	Wooden door	m <sup>2</sup>	60.00	
10	Round wooden pole for column (Φ15cmx5m)	pole	4.60	
11	Round wooden pole for column (Φ10cmx4m)	pole	3.20	
12	Round wooden pole for column (Φ8cmx4m)	pole	2.37	
13	Round wooden pole for wall & roof (Φ5cmx4m)	pole	1.85	
14	Concrete footing pole (1.2m)	pole	3.00	
15	Roofing thatch from Sbov (1.2m)	sheet	0.12	
16	Roofing thatch from Sleuk Thnort (1.2m)	sheet	0.08	
17	Zinc roofing sheet (0.3mm)	m <sup>2</sup>	2.20	
18	Hollow or solid clay brick	brick	0.04	

19	Cement (Mountain)	bag	3.85	
20	Sand	m <sup>3</sup>	8.70	
21	Stone (4x6cm)	m <sup>3</sup>	11.00	
22	Gravel (1x2cm)	m <sup>3</sup>	15.00	
23	Steel bar	tone	630.00	
24	Steel nail	kg	1.50	
25	Steel wire	kg	1.50	
26	Barbed wire	roll	30.00	

Note:

- (1) : Good timber is typical timber for construction of wooden house and in good shape. This kind of timber is consisted of Trach, Pcheck, Chunlin, Cheu Teal, etc.
- (2) : Mixed timber is construction timber, which don't have good size and mixed with different kind of low quality construction wood such as Cheul Teal, Svay, Phdeak, etc.
- (3) : Sub-standard timber is low quality construction timber without proper size for construction. It is piece of timber with short, curve, broken timber.

In the subproject region, the labor cost for carpenter to construct typical wooden house with zinc roof is about US\$ 16 per square meter or approximately 20% of total construction cost. The labor for skilled carpenter is US\$ 6 a day and unskilled labor is US\$ 2.75 a day. The labor cost for simple small house through food for work is ranking from US\$ 1.35 to US\$ 3.5 per square meter or about 7% to 23% of total construction cost, depending on type of the structure. Transportation cost of construction material shares approximately 8.2% of construction cost depending on construction material type.

Basing on the material prices above and typical structure of houses, vendor stall, chicken pen type, the price per square meter can be estimated as **Table 3-4-2** below:

**Table 3-4-2: List of the estimated price for structure element of Canal No. 1**

NO	STRUCTURE ELEMENT	UNIT	UNIT COST (US\$)
<b>I</b>	<b>Column</b>		
1	Reinforce concrete	m <sup>3</sup>	220
2	Concrete footing pole (1.2m)	pole	3.00
3	Timber column (15cm x 15cm)	m	7.88
4	Timber column (12cm x 12cm)	m	5.04
5	Round wooden column (Φ 15cm)	m	0.92
6	Round wooden column (Φ 10cm)	m	0.80
7	Round wooden column (Φ 8cm)	m	0.60
8	Round wooden column (Φ 5cm)	m	0.50
<b>II</b>	<b>Floor</b>		
1	Wooden board floor and timber beam structure	m <sup>2</sup>	16.50
2	Wooden board floor & timber structure (mixed wood)	m <sup>2</sup>	11.20
3	Bamboo floor	m <sup>2</sup>	3.00
<b>III</b>	<b>Wall</b>		
1	Wooden wall with wooden structure	m <sup>2</sup>	9.00
2	Wooden wall with wooden structure (mixed timber)	m <sup>2</sup>	6.35
3	Thatch wall with wooden structure	m <sup>2</sup>	2.60
<b>IV</b>	<b>Window and door</b>		
1	Wooden door	m <sup>2</sup>	60.00
2	Wooden window	m <sup>2</sup>	40.00
3	Thatch window with bamboo structure	m <sup>2</sup>	2.00
<b>V</b>	<b>Roof</b>		
1	Wooden structure for zinc roof (good timber)	m <sup>2</sup>	10.00

2	Wooden structure for zinc roof (mixed timber)	m <sup>2</sup>	7.20
3	Wooden structure for thatch roof (mixed timber)	m <sup>2</sup>	4.90
4	Wooden structure for thatch roof (mixed timber/bamboo)	m <sup>2</sup>	3.32
5	Wooden structure for small thatch roof (mixed timber/bamboo)	m <sup>2</sup>	1.25
6	Zinc roofing sheet	m <sup>2</sup>	2.10
7	Thatch	m <sup>2</sup>	0.65

Note: The price for the structure element about is excluded labor cost.

### ***Agricultural and Residential Land***

The survey indicates that the prices of agricultural and residential land are also varied from one village to another in subproject area and the collapse of real-estate market affected on the property price in the region.

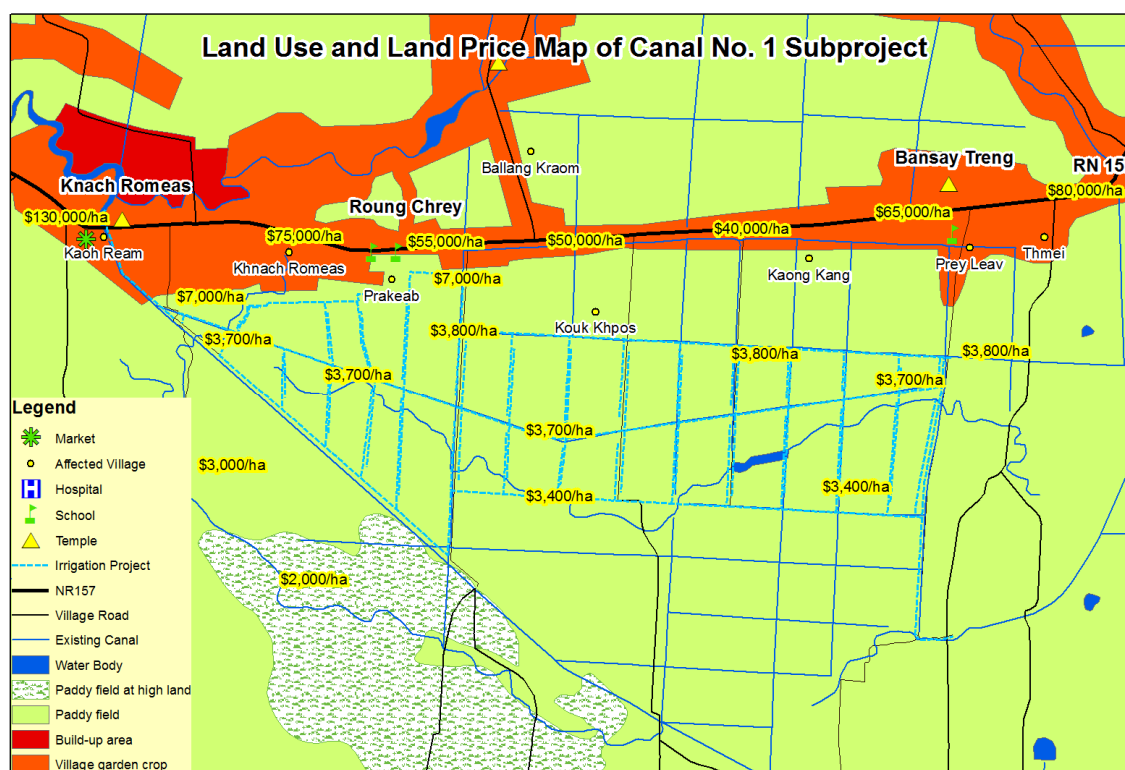
The land use of command area of the subproject is covered majority by paddy field, Chamkar and residential land. At the east and next to Main Canal is Koah Ream market and at the north of the market is the high density settlement. Along the National Road No. 157 is village settlement of the 8 affected villages. At the south of the command area are covered by paddy field at the high land

The agriculture land price of command area of the subproject is varied from \$3,400 to \$3,800 per ha, depending on the location of the land which is proximity to the village RN 157, village road, existing canal, low land with sufficient rain water for rice cultivation and fertility of the land (See **Figure 3-4**). The lands which proximity to Svay A canal and Canal No. 1 are good for rice cultivation because of being able to collect enough water for rice growing. That are the rice lands price are \$3,700 per ha. The rice land which close to village settlement cost more with the price of \$3,800 per ha, because the land is more accessible. The land at the south end of the command area is cheaper with the price of \$3,400 per ha, since it is far from village, difficult to access and lack of water for rice cultivation. The average land price of the affected area is \$3,700 per ha.

The survey found that the residential land price of the affected villages is from US\$40,000 per ha in Koang Kang village to US\$130,000 per ha in Koah Ream village (See **Figure 3-4**). The rehabilitation of RN 157 which is under construction affect on, particularly, residential land price, because of increasing the accessibility of the land. Koah Ream market and urban settlement in Knach Romeas also make the land price of its surrounding higher than the others. In this case, the residential land price of the land along RN 157 and within 100m from Koah Ream market is the highest residential land price of the subproject area, \$130,000 per ha. Since the residential land price is largely different, it could be devised into two type of residential land: 1. Residential land along the RN 157 and next to Koah Ream market and 2. the residential land at the south of RN 157.

The residential land type 1 is close to the market and along the RN 157 has the price of \$130,000 per ha and the residential land type 2 which is at the south of RN 157 is calculated in average of three affected residential land prices of Knach Romeas, Prakeab and Thmei villages at the affected location, north of RN 157, with the price of \$35,000 per ha.

Basing on DMS report, affected Chamkar land is found in Knach Romeas and Prakeab villages. The land is located at the south of RN 157 and behind residential lot of the two affected villages. Generally, the lands are under developed and used as field land for growing vegetables and fruit trees for affected households and also are able to subdivided to be future residential land in the future. The average Chamkar land price for compensation is \$7,000 per ha.



**Figure 3-4: Land use and land price map of Canal No. 1**

### ***Perennial Crop and Tree***

The subproject will affect on 12 types of fruit trees such as mango, sugar palm, coconut, Teuk Doh Kor, papaya, citrus, bamboo, Jambolan, custard apple, banana, tamarind, Krasang, and others non fruit trees. Jambolan, mango, sugar palm and bamboo are dominant in the DMS record. But the important fruit trees are coconut, Teuk Doh Kor, banana, bamboo and mango.

Among those trees, none of them are planted for commercializing. The fruit trees are for household use and sometime for sharing with neighbors in the village. For palm tree, because of lack of fire wood, villager abandoned producing sugar. Palm juice, fruit and leafs are the only benefit of the tree. The yield, price and compensation year of each affected trees is described in **Table 3-4-3** as below:



**Table 3-4-3: List of trees, yield, fruit price and compensation year in Canal No. 1**

No	Type of tree	QTY	Unit	Yield/ year	Unit	Unit price (\$)	Price/year (\$)	Year for Compensation	Compensation rate (\$)
1	Mango	1	tree	228	fruit	0.025	5.700	5	28.50
2	Sugar palm	1	tree	-	-	-	-	8	25.00
3	Coconut	1	tree	30	fruit	0.200	6.000	5	30.00
4	Teuk Doh Kor	1	tree	147	fruit	0.038	5.586	5	28.00
5	Orange	1	tree	243	fruit	0.023	5.590	5	28.00
6	Papaya	1	tree	17	fruit	0.200	3.400	1	3.40
7	Guava	1	tree	222	fruit	0.006	1.332	3	4.00
8	Jackfruit	1	tree	7	fruit	1.530	10.710	3	32.13
9	Bamboo	1	thicket	15	shoot	0.190	2.850	3	8.55
10	Jambolan	1	tree	20	can	0.100	2.000	4	8.00
11	Custard apple	1	tree	50	fruit	0.050	2.500	2	5.00
12	Banana	1	tree	8	hand	0.250	2.000	1	2.00
13	Tamarind	1	tree	-	-	-	5.000	5	25.00
14	Kraseing	1	tree	400	fruit	0.008	3.200	3	10.00
15	Others	1	tree	-	-	-	-	-	5.00

Other trees, which do not produce fruit for food, will be compensated for US\$ 5 per tree.

### 3.4.2 Compensation Rates

Basing on the **Table 3-4-1** to **Table 3-4-3** and **Figure 3-4** the compensation rate for Canal No. 1 subproject can be concluded as **Table 3-4-4** below:

**Table 3-4-4: Compensation Rate of Affected Asset of Canal No. 1**

NO	TYPE OF AFFECTED ASSET	UNIT	UNIT PRICE (US\$)	REMARK
<b>I</b>	<b>Main Structure</b>			
1	Residential type 1	m <sup>2</sup>	20.00	(1)
2	Residential type 2	m <sup>2</sup>	35.00	(2)
3	Residential type 3	m <sup>2</sup>	60.00	(3)
4	Residential type 4	m <sup>2</sup>	79.00	(4)
<b>II</b>	<b>Other Structures</b>			
1	Kitchen	m <sup>2</sup>	20.00	(5)
2	Toilette (concrete slab, brick wall and zinc roof)	m <sup>2</sup>	35.00	(6)
3	Workshop, Shop, and Rice bin	m <sup>2</sup>	28.00	(7)
4	Stall	m <sup>2</sup>	5.00	(8)
5	Stable for cattle, Chicken and pig pen	m <sup>2</sup>	6.00	(9)
6	Wooden fence	m	3.80	(10)
7	Pump well	m	800.00	
8	Open well	m	420.00	
<b>I</b>	<b>Land</b>			
1	Residential land type 1	m <sup>2</sup>	13.00	
2	Residential land type 2	m <sup>2</sup>	3.50	
3	Chamkar land	m <sup>2</sup>	0.70	
4	Rice land	m <sup>2</sup>	0.30	
<b>II</b>	<b>Tree</b>			
1	Mango	tree	28.50	

2	Sugar palm	tree	25.00	
3	Coconut	tree	30.00	
4	Teuk Doh Kor	tree	28.00	
5	Orange	tree	28.00	
6	Papaya	tree	3.40	
7	Guava	tree	4.00	
8	Jackfruit	tree	32.13	
9	Bamboo	thicket	8.55	
10	Jambolan	tree	8.00	
11	Custard apple	tree	5.00	
12	Banana	tree	2.00	
13	Tamarind	tree	25.00	
14	Kraseing	tree	10.00	
15	Others	tree	5.00	

Note:

- (1) : The house is made from round wooden pole, mixed timber in floor and structure, thatch wall and roof and small structure.
- (2) : The house is made from mixed timber in floor, wall and structure and zinc roofing sheet and small structure.
- (3) : The house is made from good timber in floor, wall and structure and zinc roofing sheet and big structure.
- (4) : The house is made from concrete in building structure, brick in wall, tile in floor and timber in roof structure and zinc in roof.
- (5) : The kitchen is made from round wooden pole, mixed timber in floor and structure, thatch wall and roof and small structure.
- (6) : The toilette is made from concrete in slab, column and beam, brick in wall and zinc in roof.
- (7) : The buildings is made from mixed timber in building structure and zinc in roof, build attaching to the ground.
- (8) : The vendor stall is made from round timber and mixed timber in column and structure with thatch roof.
- (9) : Stable for cattle, chicken and pig pen is made from round timber and mixed timber in column and structure with thatch roof.
- (10) : The fence is made from wood (Krak) with 15cm diameter, 1.8m height, 1.5m distance of pole and 5 lines of barbed wire.

### 3.5 Chork Reservoir Subproject

Chork Reservoir is the third subproject of NWISP in Battambang province. The subproject is located in Prey Touch and Kakoah communes of Mong Rusey district and about 15km from Mong Rusey district center and within few kilometers at the west of RN 5. The subproject is estimated to irrigate 1,500ha for supplementary irrigation scheme in the wet season. The new scheme is required to acquire agricultural and residential lands, structures and fruit trees.

#### 3.5.1 Replacement Costs from Various Groups

##### *Houses and Other Structures*

The survey of the construction materials is conducted on four carpenter groups in Chork Reservoir subproject and three construction material shops in Mong Rusey district and Battambang provincial town. The synthesis of the material prices is reported in the **Table 3-5-1** as below:

**Table 3-5-1: List of relevant construction material of Chork Reservoir**

NO	CONSTRUCTION MATERIALS	UNIT	UNIT PRICE (US\$)	REMARK
1	Good timber	m <sup>3</sup>	350.00	(1)
2	Mixed timber	m <sup>3</sup>	310.00	(2)
3	Sub-standard timber	m <sup>3</sup>	250.00	(3)
4	Bamboo (0.11m x 7m)	pole	0.70	
5	Bamboo (0.05m x 6m)	pole	0.43	
6	Bamboo for rafter (Φ3cm x 4m x 20)	bunch	3.00	
7	Splitted bamboo (2mx20 pieces)	bunch	1.25	
8	Wooden window	m <sup>2</sup>	48.00	
9	Wooden door	m <sup>2</sup>	60.00	
10	Round wooden pole for column (Φ15cmx5m)	pole	4.60	
11	Round wooden pole for column (Φ10cmx4m)	pole	3.20	
12	Round wooden pole for column (Φ8cmx4m)	pole	2.37	
13	Round wooden pole for wall & roof (Φ5cmx4m)	pole	1.85	
14	Concrete footing pole (1.2m)	pole	3.00	
15	Roofing thatch from Sbov (1.2m)	sheet	0.12	
16	Roofing thatch from Sleuk Thnort (1.2m)	sheet	0.08	
17	Zinc roofing sheet (0.3mm)	m <sup>2</sup>	2.10	
18	Hollow or solid clay brick	brick	0.04	
19	Cement (Mountain)	bag	3.85	
20	Sand	m <sup>3</sup>	8.50	
21	Stone (4x6cm)	m <sup>3</sup>	11.00	
22	Gravel (1x2cm)	m <sup>3</sup>	15.00	
23	Steel bar	tone	630.00	
24	Steel nail	kg	1.50	
25	Steel wire	kg	1.50	
26	Barbed wire	roll	30.00	

Note:

- (1) : Good timber is typical timber for construction of wooden house and in good shape. This kind of timber is consisted of Trach, Pcheck, Chunlin, Cheu Teal, etc.
- (2) : Mixed timber is construction timber, which don't have good size and mixed with different kind of low quality construction wood such as Cheul Teal, Svay, Phdeak, etc.
- (3) : Sub-standard timber is low quality construction timber without proper size for construction. It is piece of timber with short, curve, broken timber.

The labor cost for carpenter to construct typical wooden house with zinc roof is about US\$ 15 per square meter or approximately 20% of total construction cost. The labor for skilled carpenter is US\$ 6 a day and unskilled labor is US\$ 2.75 a day. The labor cost for simple small house through food for work is ranking from US\$ 1.35 to US\$ 3.50 per square meter or about 8.5% of total construction cost, depending on type of the structure.

Transportation cost of construction material shares approximately 8% of construction cost depending on construction material type. That is because the subproject is located far from Battambang provincial town.

Basing on the material prices above and typical structure of houses, vendor stall, chicken pen type, the price per square meter can be estimated as **Table 3-5-2** below:

**Table 3-5-2: List of the estimated price for structure element of Chork Reservoir**

NO	STRUCTURE ELEMENT	UNIT	UNIT COST (US\$)
<b>I</b>	<b>Column</b>		
1	Concrete column and beam	m <sup>3</sup>	220.00
2	Concrete footing pole (1.2m)	pole	3.00
3	Timber column (15cm x 15cm)	m	6.75
4	Timber column (12cm x 12cm)	m	4.32
5	Round wooden column (Φ 15cm)	m	1.18
6	Round wooden column (Φ 10cm)	m	1.00
7	Round wooden column (Φ 8cm)	m	0.77
8	Round wooden column (Φ 5cm)	m	0.40
<b>II</b>	<b>Floor</b>		
1	Wooden board floor and timber beam structure	m <sup>2</sup>	14.55
2	Wooden board floor & timber structure (mixed wood)	m <sup>2</sup>	11.00
3	Bamboo floor	m <sup>2</sup>	3.15
4	Cement mortar slab	m <sup>2</sup>	9.00
<b>III</b>	<b>Wall</b>		
1	Brick wall with plaster and paint (10cm thickness)	m <sup>2</sup>	15.80
2	Wooden wall with wooden structure	m <sup>2</sup>	7.32
3	Wooden wall with wooden structure (mixed timber)	m <sup>2</sup>	5.18
4	Bamboo-plastic wall with wooden structure	m <sup>2</sup>	1.95
5	Thatch wall with wooden structure	m <sup>2</sup>	1.50
<b>IV</b>	<b>Window and door</b>		
1	Wooden door	m <sup>2</sup>	32.00
2	Wooden window	m <sup>2</sup>	40.00
3	Thatch window with bamboo structure	m <sup>2</sup>	1.55
<b>V</b>	<b>Roof</b>		
1	Tile roof with wooden structure	m <sup>2</sup>	28.65
2	Wooden structure for zinc roof (good timber)	m <sup>2</sup>	7.78
3	Wooden structure for zinc roof (mixed timber)	m <sup>2</sup>	5.73
4	Wooden structure for thatch roof (mixed timber)	m <sup>2</sup>	4.81
5	Wooden structure for thatch roof (mixed timber/bamboo)	m <sup>2</sup>	3.10
6	Wooden structure for small thatch roof (mixed timber/bamboo)	m <sup>2</sup>	1.10
7	Zinc roofing sheet	m <sup>2</sup>	2.10
8	Thatch	m <sup>2</sup>	0.95

Note: The price for the structure element about is excluded labor cost.

### ***Agricultural and Residential Land***

According to DMS report the affected rice land is only in command area. The price of rice land of in affected region is from \$2,200 per ha to \$3,800 per ha depending on its proximity to road, irrigation, village center, topography and fertility of the land (See **Figure 3-5**). The affected land between Chork Touch and Chork Thum has a price of \$2,200 per ha that is because the land is in higher level with difficulty to contain raining water for rice cultivation and far from RN 5. The highest rice land price of affected area, \$3,800 per ha is the price of affected land which is proximity to RN 5. To calculate the compensation rate of rice land price, the average of affected village land price is taken into account and the price is \$3,100 per ha.

Residential land which is affected by the subproject is located in Prean Nil of Prey Touch commune and Chork Thum of Kakoah commune. The survey found that the residential land price of Prean Nill village is from \$10,000 per ha and Chork Thum village is \$11,500 per ha (See **Figure 3-5**). Therefore, the average rice land price for compensation is \$10,800 per ha.

Chamkar land also affected by the subproject and it is also placed in Prean Nil and Chork Thum villages. The Chamkar land is the land behind and next to residential lot and used for vegetables and fruit tree cultivation as well as future subdivision to be residential land. The survey indicates that the Chamkar land price is \$6,000 and \$7,000 per ha in Prean Nil, so the average Chamkar land price is \$6,500 per ha.

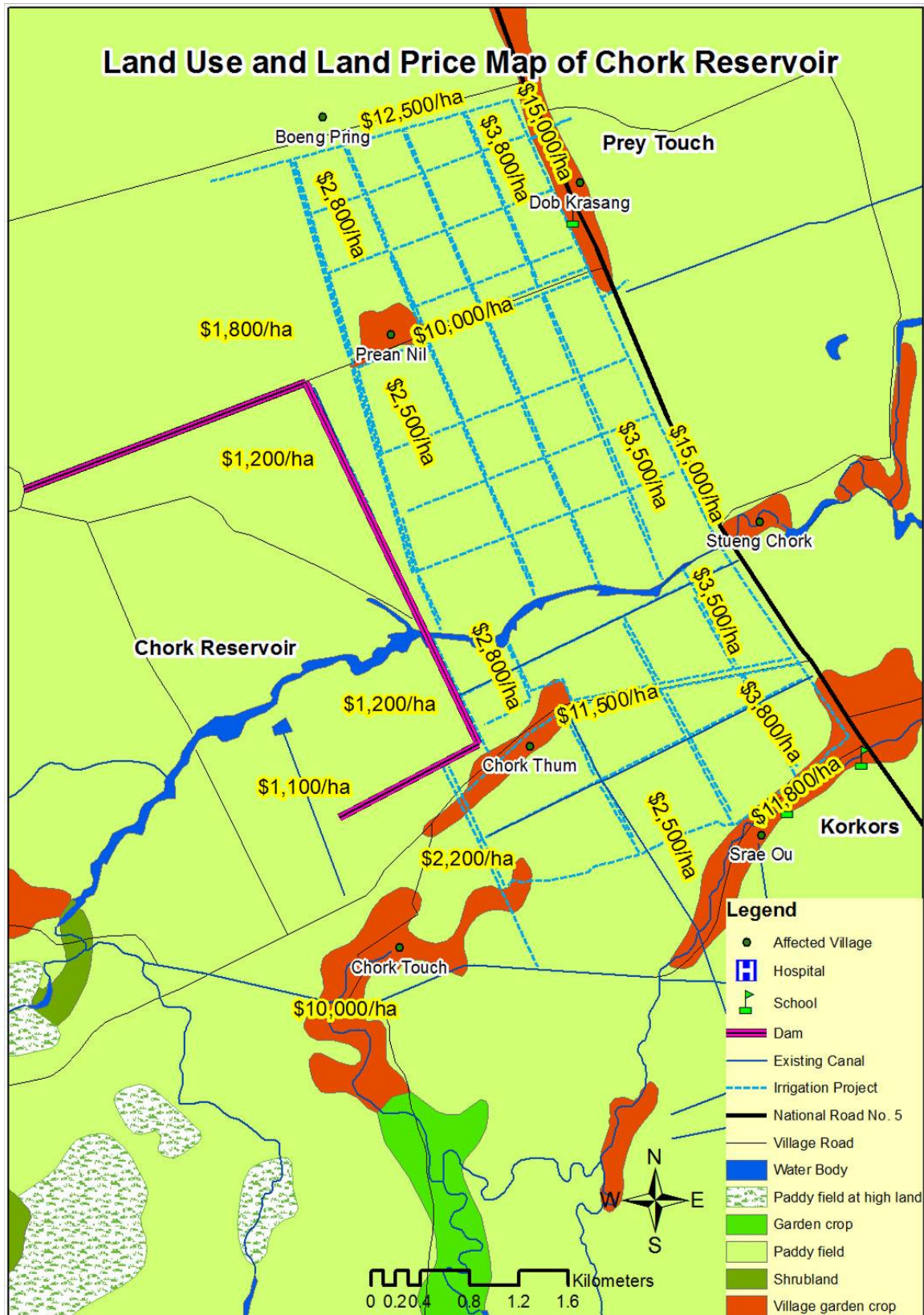


Figure 3-5: Land use and land price map of Chork Reservoir

### Perennial Crop and Tree

The subproject will affect on 12 types of fruit trees such as mango, sugar palm, coconut, cashew, papaya, guava, grapefruit, bamboo, jambolan, tamarind, Krasing and others non fruit trees. Sugar palm, bamboo and Jambolan are dominant affected trees in the DMS record.

For palm tree, no sugar production is made in that affected area because the villager doesn't have culture to produce palm sugar. Palm juice, fruit and leaf are the only benefit of the tree. The yield, price and compensation year of each affected trees is described in **Table 3-5-3** as below:

**Table 3-5-3: List of trees, yield, fruit price and compensation year in Chork Reservoir**

No	Type of tree	QTY	Unit	Yield/ year	Unit	Unit price (\$)	Price/year (\$)	Year for Compensation	Compensation rate (\$)
1	Mango	1	tree	160	fruit	0.036	5.720	5	28.60
2	Sugar palm	1	tree	-	-	-	-	8	25.00
3	Coconut	1	tree	27	fruit	0.200	5.400	5	27.00
4	Cashew	1	tree	8	kg	0.375	3.000	3	9.00
5	Grapefruit	1	tree	48	fruit	0.118	5.640	5	28.20
6	Papaya	1	tree	20	fruit	0.200	4.000	1	4.00
7	Guava	1	tree	200	fruit	0.006	1.200	3	3.60
8	Jackfruit	1	tree	6	fruit	1.500	9.000	3	27.00
9	Bamboo	1	thicket	15	shoot	0.180	2.700	3	8.10
10	Jambolan	1	tree	20	can	0.088	1.750	4	7.00
11	Custard apple	1	tree	50	fruit	0.050	2.500	2	5.00
12	Banana	1	tree	7	hand	0.225	1.575	1	1.58
13	Tamarind	1	tree	-	-	-	5.000	5	25.00
14	Krasing	1	tree	400	fruit	0.008	3.200	3	10.00

Other trees, which do not produce fruit for food, will be compensated for \$ 5 per tree.

### 3.5.2 Compensation Rates

Basing on the **Table 3-5-1** to **Table 3-5-3** and **Figure 3-5** the compensation rate for Chork Reservoir subproject can be concluded as **Table 3-5-4** below:

**Table 3-5-4: Compensation Rate of Affected Asset of Chork Reservoir**

NO	TYPE OF AFFECTED ASSET	UNIT	UNIT PRICE (US\$)	REMARK
<b>I</b>	<b>Main Structure</b>			
1	Residential type 1	m <sup>2</sup>	20.00	(1)
2	Residential type 2	m <sup>2</sup>	35.00	(2)
3	Residential type 3	m <sup>2</sup>	60.00	(3)
<b>II</b>	<b>Other Structures</b>			
1	Kitchen	m <sup>2</sup>	20.00	(4)
2	Concrete slab	m <sup>2</sup>	10.00	
3	Workshop, shop, and rice bin	m <sup>2</sup>	28.00	(5)
4	Stall	m <sup>2</sup>	5.00	(6)

5	Stable for cattle, chicken and pig pen	m <sup>2</sup>	6.00	(7)
6	Wooden fence	m	3.80	(8)
7	Pump well	m	800.00	
8	Open well	m	420.00	
<b>I</b>	<b>Land</b>			
1	Residential land	m <sup>2</sup>	1.08	
2	Chamkar land	m <sup>2</sup>	0.65	
3	Rice land	m <sup>2</sup>	0.31	
<b>II</b>	<b>Tree</b>			
1	Mango	tree	28.60	
2	Sugar palm	tree	25.00	
3	Coconut	tree	27.00	
4	Cashew	tree	9.00	
5	Grapefruit	tree	28.20	
6	Papaya	tree	4.00	
7	Guava	tree	3.60	
8	Jackfruit	tree	27.00	
9	Bamboo	thicket	8.10	
10	Jambolan	tree	7.00	
11	Custard apple	tree	5.00	
12	Banana	tree	1.58	
13	Tamarind	tree	25.00	
14	Kraseing	tree	10.00	
15	Others	tree	5.00	

## Note:

- (1) : The house is made from round wooden pole, mixed timber in floor and structure, thatch wall and roof and small structure.
- (2) : The house is made from mixed timber in floor, wall and structure and zinc roofing sheet and small structure.
- (3) : The house is made from good timber in floor, wall and structure and zinc roofing sheet and big structure.
- (4) : The kitchen is made from round wooden pole, mixed timber in floor and structure, thatch wall and roof and small structure.
- (5) : The buildings is made from mixed timber in building structure and zinc in roof, build attaching to the ground.
- (6) : The vendor stall is made from round timber and mixed timber in column and structure with thatch roof.
- (7) : Stable for cattle, chicken and pig pen is made from round timber and mixed timber in column and structure with thatch roof.
- (8) : The fence is made from wood (Krak) with 15cm diameter, 1.8m height, 1.5m distance of pole and 5 lines of barbed wire.