

Coastal Adaptation and Resilience Planning Component

Outputs from Training Programme on Integrating Climate Change Considerations into Commune Development Planning



Cambodia Climate Change Alliance (CCA)

Implemented by: Supported by:



Ministry of Environment



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Acronyms and Abbreviations

CARP	Coastal Adaptation and Resilience Planning Component
CC	Climate Change
CCCA	Cambodia Climate Change Alliance
CDP	Commune/Sangkat Development Plan
CIP	Commune/Sangkat Investment Program
DRM	Disaster Risk Management
NTFP	Non-Timber Forest Products
SLR	Sea Level Rise
SMS	Short Message Service
TWG	Technical Working Group

Outputs from Training based on Integrating Climate Change Considerations into Commune Development Planning (CDP)

Introduction

The training program to integrate climate change considerations into Commune Development Planning (CDP) is part of a well established and continuing Coastal Adaptation and Resilience Planning Component (CARP) project association with members of the individual Communes which has also included support for agriculture/livestock initiatives, as well as implementing small scale water supply related projects proposed by the Communes themselves. This has meant that several discussions regarding Climate Change (CC) and its implications took place in advance and that Commune representatives were familiar with identifying issues and potential adaptation solutions in their individual areas prior to the formal Training Workshop.

This formal training was based on using a Guidelines/Working Training Manual¹, the contents of which were presented at a Training Workshop held in Sihanoukville from 2nd – 3rd December 2013, which was attended by representatives from the Provincial Technical Working Groups (TWG) of both Koh Kong and Preah Sihanouk and all 8 selected Communes². The Training Workshop was held to provide a better understanding of the various elements of CC involved in CDP and how these can be analysed and incorporated into the planning processes by the individual Communes with the assistance of the TWGs.

Many of the required outputs from the training were achieved during the workshop in group sessions with assistance from the CARP team and members of the TWGs. However, the Commune teams also needed time to review maps and check data which was undertaken on their return home. The Commune teams were visited by local CARP consultants to assist in finalising their inputs. The individual responses from each Commune/Training Group to each specific question in the Manual are included below.

Feedback on Commune Responses, Lessons Learnt and Recommendations

The following consists of observations, lessons learnt and recommendations from the CARP team based on the workshop proceedings and responses from the Communes. Specific comments to individual Chapter responses which relate to CDP preparation are contained in the tables below.

- Overall, it seems as if there is a need for some clarifications to the manual (both English and Khmer) to make the contents easier to use. There also should be a review over the timing of the workshop, preparation by CARP and TWGs and briefing of Communes in advance of the training session.
- Commune responses to some chapters seem to indicate that there was confusion as to requirements. This is natural considering it was the first presentation with completely new material. For future such events the CARP team and TWGs should review the manual in advance to ensure full comprehension and to see if there needs to be improvements to the text, the PowerPoint, the presentation/translation and/or follow-up assistance provided to

¹ Two Guidelines/Manuals (in both English and Khmer) have been produced by CARP. The first one dated December 2013 was specifically designed for use by the 8 Communes during the training programme. Following donor feedback, a second version dated January 2014 was produced. The latter is intended for use throughout Cambodia: it identifies the data which should be collected for each Commune prior to the training program commencing.

² Peam Krasoab and Tuol Kokir (Mondol Seima District, Koh Kong Province); Ou Okhna Heng, Prey Nob, Sameakki, Tuek L'ak, Tuek Thla and Tuol Totueng (Prey Nob District, Sihanoukville Province).

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groups when they do their group work. There may also be a case for investigating whether there should be a Trainer of Trainers programme within the project or if necessary through the hire of outside expertise.

- It should always be made clear throughout that a standalone output is not expected. The Communes are being assisted to incorporate CC considerations into their CDPs. The results will be maps, potential projects and answers to questions that they can use for their CDP preparations when they next occur. So the benefits of the training may only become apparent once the Communes produce their next CDPs. That then suggests that future training should, where possible, be linked to the timing of the CDP preparation for maximum benefit. Alternatively, perhaps a follow-up session could be arranged with Communes at the time of CDP preparation.
- The amount of work required from the Communes at the workshop was ambitious in the time given. It was hard work for the representatives although they worked enthusiastically throughout. Ideally, as much as possible of this work should be done in the workshop rather than in their Communes where there is less incentive and lots of distractions. The 1.5 days was insufficient: an increase of an extra day would be better if logistics/finance permit.
- It was important that the Communes had already previously engaged with CARP (discussions, map making, other schemes, project implementations, etc). The CARP team put in a lot of preparatory time which ensured that there was good familiarity between all which contributed to an informal training atmosphere. It would be extremely difficult to try to do the training without such an introduction.
- The size of group was manageable with about 40 persons and that should be noted as a maximum for future such events. There is a need to review each proposed training location in future, especially in locations smaller than Sihanoukville, as there will have to be room to split into groups as well as for overall presentations. Where possible interaction between groups has to be managed to ensure dynamic thought processes but to avoid collusion over answers which may actually not apply to each commune.
- In Chapter 2: Planning Context, there was some confusion. The intention was for existing higher level (National/Provincial) projects/policies/plans which are known to the TWGs and which will/may have an impact on the future planning of the Commune. The responses were more of a wish list of projects that could be important but which don't yet have detailed planning or budgets. This needs to be clarified better in future.
- The responses suggest that the TWGs did not contribute much in the way of strategic projects/plans (Chapter 2). It seems as if each Commune was provided with a compilation of projects which were assessed to be relevant to that Commune. It would be valuable for the Communes to be able to see and contribute to the overall strategic planning at Provincial level which affects all Communes. It is important that CARP should engage with each TWG more in advance to ensure that they are fully prepared to provide the necessary information to the Communes. If the TWG don't have the information then the central level can be involved to see how this can be resolved.
- Some topics are completely foreign to the Commune representatives, i.e. anything relating to data analysis (Chapter 3). This is perfectly understandable but future training could be used to improve skills here, especially when doing this for the whole coastal area. This is to ensure that the Communes are able to question data (which may often contain anomalies) and also to comprehend what may be occurring in their area based on statistical evidence.
- In Chapter 4: Population, the initial responses show unfamiliarity with data. Perhaps the issue is with group working as the answers are very similar for all Communes despite them having different characteristics. We might need to reconsider how we do feedback. But this is quite complex when the representatives may have difficulty imagining why other Communes are more/less attractive than their areas. More clarifications in the presentations may need to be considered.

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- In Chapter 5: Economy, the responses from all Communes were much stronger and focused. These are subjects that they understand well. For the whole coastal zone perhaps this topic is one that can be developed more.
- In Chapter 6: Housing and Utilities, all Communes are familiar with the geography of their areas as well as the specific locations of utilities such as water supply.
- For Chapter 7: Accessibility, most of the information is contained on maps but overall there is a good understanding of the potential impact of CC in each Commune.
- In Chapter 9: Land Use Planning & Climate Change Adaptation, Communes were introduced to the potential of a Sea Level Rise (SLR) of 150 cm. Responses suggested that those who do possess high land have already considered the possibility of relocation and the need to reconsider viable occupations.
- Comments from all Communes with regard to Disaster Risk Management (DRM) in Chapter 10 suggest that current procedures for such eventualities are quite informal and have potential for more sophistication. It is recommended that capacity building programmes on DRM could be developed as part of further CC work in the coastal zone. Ideally such capacity building would be linked to identification (including community inputs) and implementation of small projects, e.g. building of “climate proofed” raised community building or construction/repair of evacuation route.
- All Communes have produced comprehensive lists of CDP projects. However, lists of projects were available prior to the Workshop as part of their previous CDP processes. It is not certain whether any revisions have been made to the lists as a result of the Workshop or whether any such changes would be kept until the next CDP review in 2015.

Commune/Group Responses and CDP Relevance

The following tables contain:

- Firstly, the Group Response (English translation from Khmer) from each of the Commune/Training Groups which was required as part of the Training Workshop held in Sihanoukville from 2nd – 3rd December 2013. The questions (**in Bold**) are taken directly from the Training Manual. This feedback is then assessed as to its relevance for Commune Development Planning in future, in particular with relation to Climate Change; and
- Secondly, information (including details of their respective costs) from each Commune for their Climate Change and CDP related projects for proposed inclusion into Commune Investment Plans (CIP) for 2014. This information sets a baseline for 2015, at which time it can be checked as to which projects were implemented, which still remain as priorities and whether any CC related projects are to be included in the CIP in 2015.

Mapping

Maps are also attached for cross-referencing with Commune/Group responses and for identification of issues and potential projects:

- Issues/Problems for: Prey Nob (South West) and (North East); and Mondol Seima
- Topography for: Prey Nob (South West) and (North East); and Mondol Seima
- Proposed Projects for: Prey Nob (South West) and (North East); Peam Krasoab and Tuol Kokir

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Group 1: Koh Kong Province, Mondol Seima District: Peam Krasop and Toul Korkei Communes

Chap.	Group Response	Relevance for CDP
2	<p>Planning Context</p> <ul style="list-style-type: none"> Which plans, projects and/or policies have the potential to have a major impact upon Development Planning in your Commune; and Assess whether the Commune Development Planning should be revised to incorporate such higher level proposals. <p>The commune investment plan is the integrated planning amount of all other agencies and institutions. It is reviewed and revised every year. The Department of Planning is the institution which collects relative plans from line departments and other organizations in the province and brings them to the commune level for discussion and then to an integration workshop at district level. The communes select which plans have the most relevance and highest priority for commune development. Following approval they can make bilateral agreement to implement the project. The commune itself can propose five projects using the commune's budget allocation include in CIP</p>	<p>Need to identify existing higher level (National/ Provincial) projects/ policies/ plans which are known to the TWGs and which will/may have an impact on the future planning of the Commune. This should not be a wish list. The process follows a logical top-down approach with the Central and Provincial levels (which have responsibility for translating overall strategies into local impacts) providing the relevance of higher level projects to the Communes.</p> <p>However, there seems to be some potential to allow Communes more scope to promote bottom-up ideas and projects for inclusion in Provincial strategies.</p>
3	<p>Use of Statistics</p> <ul style="list-style-type: none"> Review the statistics provided for your Commune for 2006 – 12 and determine: If there are individual numbers which need to be reviewed and reconsidered; and Whether the statistics generally describe the situation in your Commune for the given years. <p>There are some numbers which have been reconsidered and revised. However the data generally describes the situation in communes. (data accuracy is about 60-80%)</p>	<p>There are data anomalies in all the Communes. These may be due to genuine errors, misinterpretation or correct non-trend data which has a logical explanation.</p> <p>Future training could be used to improve skills here, especially when doing this for the whole coastal area. This is to ensure that the Communes are able to question data (which may often contain anomalies) and also to comprehend what may be occurring in their area based on statistical evidence.</p>

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Chap.	Group Response	Relevance for CDP
4	<p>Population</p> <p>Peam Krasop</p> <ul style="list-style-type: none"> • Has your Commune’s population (2006 – 12) grown slower or faster than the Provincial average? Population grew slowly during the last few years because new families migrated for jobs after being married (some younger persons study outside and then marry). The province grew faster. • What do you think is the reason for this difference in growth rates? The younger persons have better educations and want more comfortable jobs, whereas older families still live in commune on their own land and work in primary jobs such as fishing and ecotourism • Is there any way to reverse the outward migration of people, especially women? If there are better opportunities in fish culture, livestock and rice cultivation due to improved infrastructure, especially roads. • Do you think any of these reasons for faster/slower population growth relates to climate change or extreme weather events? If so, what reasons. Decreases can be because of Climate Change such as agriculture and fish yields decrease affect on occupation due to unusual weather • Which events caused the “Victims of natural disasters” given in the statistics? Storms, increased temperature, sea level rise, lack of water supply and no water source <p>Toul Korki</p> <ul style="list-style-type: none"> • Has your Commune’s population (2006 – 12) grown slower or faster than the Provincial average? In 2007, it increased due to land property increases and in-migration. It grows faster compared to provincial average. • What do you think is the reason for this difference in growth rates? New roads construction, people building new houses and better quality houses, as well as more doing rice cultivation and fishing • Is there any way to reverse the outward migration of people, especially women? Provide knowledge on agriculture (rice cultivation, cropping, livestock, fish raising and fish processing). Improve infrastructure • Do you think any of these reasons for faster/slower population growth relates to climate change or extreme weather events? If so, what reasons. Reasons similar to Peam Krasop commune • Which events caused the “Victims of natural disasters” given in the statistics? Strong rain, thunderstorms, increased temperature, drought and some villages lack water supply 	<p>Proximity of Peam Krasop to Koh Kong provides opportunities to develop a more mixed local economy with new jobs in services such as tourism. Those currently engaged in fishing have useful knowledge for use as tourist guides.</p> <p>Recent building of new road to Koh Chak has improved accessibility for the fishing village. Future CC issues of SLR may require extra support or consider relocation.</p>
5	<p>Economy</p> <p>Peam Krasop</p> <ul style="list-style-type: none"> • Has your Commune’s employment (2006 – 12) in each of the following: rice, fish and non-agricultural jobs, increased or decreased? Rice cultivation has a very low increase, fishing decrease, non-agriculture increase • Why do you think these increases/declines have occurred? Rice cultivation: due to no land. Fishing decrease due to extreme weather and frequent storm events. Family fishing increases (prawn 	<p>Increased attractiveness of Koh Kong, on border and as centre for tourism should provide sufficient varied occupations for the commune.</p>

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	<p>nets, crap traps, bivalve in mud). Raising fish decreases (lack technique). Non-agriculture increase (ecotourism: boats take tourists, motorbike and tuk tuk, business, Cleaners), Construct workers and fishing workers</p> <ul style="list-style-type: none"> • Is there potential to increase the areas (hectares/m2) or season (weeks/months) allocated to either rice or shrimp farming? No land allocated • Do you expect a change in the proportion of people employed in rice, fish and services in future? If so, why? The positive impact conclusion: fishing and services can be increase due to population increase, natural resources provide good opportunity, improved livelihoods and good markets. • Do you think any of these reasons for previous changes in types of employment relates to climate change or extreme weather events? If so, what reasons. Some occupations have been changed are related to climate change, because we didn't prepare to adapt to climate change. • Do you expect climate change and/or extreme weather events to influence employment in future? It is believed that Climate Change will impact on occupations <p>Toul Korki</p> <ul style="list-style-type: none"> • Has your Commune's employment (2006 – 12) in each of the following: rice, fish and non-agricultural jobs, increased or decreased? Rice cultivation has increased, fishing decreased and non-agriculture decreased • Why do you think these increases/declines have occurred? Rice cultivation increased due to agriculture land expansion (Industrial crops, rice fields and rice price increase, have market) farmers involve in agriculture training and there is some irrigation. Fishing decreased due to fish yield decrease. Non-agriculture decreased as there is no business opportunity in commune • Is there potential to increase the areas (hectares/m2) or season (weeks/months) allocated to either rice or shrimp farming? Still have land for rice farming, but no capacity to improve/restore land such as no dike to protect rice field. • Do you expect a change in the proportion of people employed in rice, fish and services in future? If so, why? Farmers can be increased because the commune has opportunity to increase new rice land (High price in market, good agriculture equipment, water source for rice farming can be available in dry season and wet season, rice seed give high yield, people interested in industrial crops and fruit crop). • Do you think any of these reasons for previous changes in types of employment relates to climate change or extreme weather events? If so, what reasons. Some occupations have been changed are related to climate change, because we didn't prepare to adapt to climate change. • Do you expect climate change and/or extreme weather events to influence employment in future? It is believed that Climate Change will impact on occupation 	<p>The Commune is split between land based and fishing occupations. The former has good road access and potential for new water supplies during the dry season. The latter may struggle to survive extended dry seasons and/or several extreme weather events.</p>
6	<p>Housing & Utilities</p> <p>Peam Krasop</p> <ul style="list-style-type: none"> • Compare changes in population and housing in your Commune (2006 – 12). Have they changed at similar rates or is there now a housing shortage or surplus? 	<p>Both Communes have identified need for improved electricity supply, communal water and landfill areas</p>

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Chap.	Group Response	Relevance for CDP
	<p>House and population increase at a similar rate</p> <ul style="list-style-type: none"> • Has the quality of housing generally improved since 2006? <p>Increase quality house from wood to concrete and from thatched to fibro roof</p> <ul style="list-style-type: none"> • Is the electricity supply mostly reliable or do people still need to rely on batteries/generators when there are power cuts? <p>Not enough electricity supply, rely on battery and generator</p> <ul style="list-style-type: none"> • Are there any major communal or shared water supply sources, especially for the dry season? Please locate them on the map and describe what sort of facility (e.g. piped, well, tank, lake). <p>Shared water supply sources are mapped: there is no water supply source in commune</p> <ul style="list-style-type: none"> • Which areas tend to have problems with water supply (quality, amounts), especially during the dry season? Please locate them on the map. <p>Locations mapped.</p> <ul style="list-style-type: none"> • Is there any potential to create a centralised water supply system which can collect water and serve the whole Commune? <p>No capacity to supply water use for whole commune, except connectivity from provincial town's water source</p> <ul style="list-style-type: none"> • Is there a solid waste disposal site in the Commune? If no, where do people dispose of their waste? If yes, is it a controlled site? <p>No land for landfill (waste from community houses is collected with small amount of total waste; some are disposed on abandoned land, in canals and water)</p> <ul style="list-style-type: none"> • When housing is improved or newly built do the owners/builders include any provision for climate change in the designs? <p>House built higher than before, foundation is stronger, concrete columns, set up rain water harvesting system</p> <ul style="list-style-type: none"> • Do any buildings utilise renewable forms of energy?, e.g. solar/photovoltaic panels or wind. <p>Two houses use solar system</p> <ul style="list-style-type: none"> • Are public buildings designed to take account of any unstable/weak soils in low lying areas (e.g. through piling or minimising weight of structures)? <p>Not yet considered (community meeting room and selling ticket office); but school and commune police office considered.</p> <ul style="list-style-type: none"> • Have Dry Season safe water supplies been increasing or decreasing (number, quality) in recent years? If supplies have been decreasing is it due to climate change or to an increase in the population and demand for water? <p>Lack of water supply in dry season, no water source, most people buy water</p> <p>Toul Korki</p> <ul style="list-style-type: none"> • Compare changes in population and housing in your Commune (2006 – 12). Have they changed at similar rates or is there now a housing shortage or surplus? <p>As per Peam Krasop</p> <ul style="list-style-type: none"> • Has the quality of housing generally improved since 2006? <p>As per Peam Krasop</p> <ul style="list-style-type: none"> • Is the electricity supply mostly reliable or do people still need to rely on batteries/generators when there are power cuts? <p>As per Peam Krasop</p> <ul style="list-style-type: none"> • Are there any major communal or shared water supply sources, especially for the dry season? Please locate them on the 	

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Chap.	Group Response	Relevance for CDP
	<p>map and describe what sort of facility (e.g. piped, well, tank, lake). Shared water supply sources are mapped</p> <ul style="list-style-type: none"> Which areas tend to have problems with water supply (quality, amounts), especially during the dry season? Please locate them on the map. Locations mapped. Is there any potential to create a centralised water supply system which can collect water and serve the whole Commune? Have water source, but lack of budget to connect to households Is there a solid waste disposal site in the Commune? If no, where do people dispose of their waste? If yes, is it a controlled site? No landfill (waste is burned and buried by households) When housing is improved or newly built do the owners/builders include any provision for climate change in the designs? As per Peam Krasop Do any buildings utilise renewable forms of energy?, e.g. solar/photovoltaic panels or wind. Three houses and one pagoda use solar system <p>Are public buildings designed to take account of any unstable/weak soils in low lying areas (e.g. through piling or minimising weight of structures)? Some are considered such as school and pagoda</p> <ul style="list-style-type: none"> Have Dry Season safe water supplies been increasing or decreasing (number, quality) in recent years? If supplies have been decreasing is it due to climate change or to an increase in the population and demand for water? Toul Koki Krom and Koh Chak villages have no water supply and water source in dry season, pond and well infiltrated by sea water 	
7	<p>Accessibility</p> <p>Note: this Chapter requires the mapping of infrastructure and services including status, proposals. Refer to maps for details.</p> <p>Peam Krasop</p> <ul style="list-style-type: none"> If you want to sell/buy goods do you go to this Market or elsewhere? If elsewhere, where and how far away (Km/Minutes)? Market in provincial town with about 7 km Indicate on the map any new/improved routes (earth or non-earth) which would improve peoples' accessibility the map any new/improved routes: There is a plan for new road in 2014 of about 200m For those with water access, locate any existing jetties. Indicate on the map any new/improved jetties/moorings which would improve peoples' accessibility. There were some improvements of jetties/mooring in commune from 2006, but no capacity to improve more Has accessibility within the Commune increased since 2006? Yes Can accessibility be improved more? If yes, how? Yes, such as changing from temporary to permanent jetties and from earth to concrete roads. 	<p>The situation in Peam Krasop is linked to that of Koh Kong city which is extending south into this Commune.</p>

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Chap.	Group Response	Relevance for CDP
	<ul style="list-style-type: none"> If the Commune was to experience a SLR of 100 cm which routes would be affected? Would the whole Commune still be able to gain access to a main (National/Provincial/District) road The mapped area will flood if SLR 100cm and most of the commune area will also be flooded. Do all your road/bridge/culvert project proposals include an allowance for possible Climate Change or extreme weather events We have never considered about CC, but afterward we will consider If road proposals are for higher elevations, do they consider the impact of the raised road on drainage patterns, especially the potential for inadvertently retaining flood waters after heavy rains? The commune proposes to construct road in high elevation but there is no budget. <p>Toul Korki</p> <ul style="list-style-type: none"> If you want to sell/buy goods do you go to this Market or elsewhere? If elsewhere, where and how far away (Km/Minutes)? Market in provincial town with about 22 km (0.5 hrs) Indicate on the map any new/improved routes (earth or non-earth) which would improve peoples' accessibility the map any new/improved routes: No new proposed road For those with water access, locate any existing jetties. Indicate on the map any new/improved jetties/moorings which would improve peoples' accessibility. There are some improvements of jetties/mooring in commune mostly in Koh Chak and Prek Kdouch for tourists Has accessibility within the Commune increased since 2006? Yes Can accessibility be improved more? If yes, how? Yes, such as changing from temporary to permanent jetties and from earth to concrete roads. If the Commune was to experience a SLR of 100 cm which routes would be affected? Would the whole Commune still be able to gain access to a main (National/Provincial/District) road Koh Chak village would be flooded, other places still accessible. Do all your road/bridge/culvert project proposals include an allowance for possible Climate Change or extreme weather events We have never considered about CC, but afterward we will consider If road proposals are for higher elevations, do they consider the impact of the raised road on drainage patterns, especially the potential for inadvertently retaining flood waters after heavy rains? The commune propose to construct road in high elevation but there is no budget. 	<p>For Toul Kokir, access is mostly by road. There is however an opportunity to investigate building a jetty in Koh Chak which together with the new earth road (upgrade to more permanent materials and proper drainage) would give improved access to Koh Kong.</p>
8	<p>Identified Issues</p> <p>Note: this Chapter requires the mapping of issues and a review based on training outputs. Refer to maps for details.</p>	
9	<p>Land Use Planning & Climate Change Adaptation</p>	

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Chap.	Group Response	Relevance for CDP
	<p>Note: this Chapter requires the mapping of the impact of an average SLR of 150 cm. Refer to maps for details.</p> <p>Peam Krasop</p> <ul style="list-style-type: none"> • Locate all land remaining above the 150 cm contour. If the SLR 150cm, the commune has no function • Decide which populations may have to adapt or be resettled. All people need to move to other communes. • What would be required for populations to adapt and not be resettled? Only fishing and small scale aquaculture • Identify which land may be suitable and available for resettlement. No opportunity for this commune • Identify which schools, clinics, markets may need to be relocated. All • Suggest viable livelihoods for those living in the Commune in such circumstances Fishing and aquaculture are available for those living in commune <p>Toul Kokir</p> <ul style="list-style-type: none"> • Locate all land remaining above the 150 cm contour. Koh Chak and Toul Kokir Krom will have no function if SLR 150cm • Decide which populations may have to adapt or be resettled. People in these communes need to move to the mountain sites, but Toul Koki Leu can be adapted <p>What would be required for populations to adapt and not be resettled? Toul Koki Leu can adapt to fishery and aquaculture as well</p> <ul style="list-style-type: none"> • Identify which land may be suitable and available for resettlement. There is upland near mountain available • Identify which schools, clinics, markets may need to be relocated. There is upland near mountain available • Suggest viable livelihoods for those living in the Commune in such circumstances Crop farming, fishing and aquaculture . 	<p>Both Communes would be severely impacted by a SLR of 150 cm. High land in Toul Kokir might provide the best opportunity for relocation and continued links with the existing road system.</p>
10	<p>Disaster Risk Management (DRM)</p> <p>Peam Krasop</p> <ul style="list-style-type: none"> • What are the procedures for the Commune to receive warnings about expected extreme weather events (e.g. siren, mobile phone, SMS)? Meeting announcement, distribution from one person to another by phone call. • How does the Commune leadership pass on any warnings to the people? 	<p>Both Communes have systems established for warnings in advance of potential disasters. These are likely to be storms with severe rain and wind which can</p>

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Chap.	Group Response	Relevance for CDP
	<p>Commune councils distribute message to people</p> <ul style="list-style-type: none"> • What actions do any early warning plans/training propose in the event of any impending event (e.g. escape route, nominated safe buildings, rendezvous points, responsibilities for evacuation)? <p>Boats, motorbikes and trucks (Koyon) take people to safe places</p> <ul style="list-style-type: none"> • Could the current system be improved, and if so, how? <p>No reserve land by commune, but at school and pagoda</p> <ul style="list-style-type: none"> • Do any infrastructure/facilities need to be improved specifically for addressing potential extreme weather events? <p>Prepare water system and sanitation at public buildings</p> <p>Toul Korki</p> <ul style="list-style-type: none"> • What are the procedures for the Commune to receive warnings about expected extreme weather events (e.g. siren, mobile phone, SMS)? <p>Meeting announcement, distribution from one person to another by phone call.</p> <ul style="list-style-type: none"> • How does the Commune leadership pass on any warnings to the people? <p>Commune councils distribute message to people</p> <ul style="list-style-type: none"> • What actions do any early warning plans/training propose in the event of any impending event (e.g. escape route, nominated safe buildings, rendezvous points, responsibilities for evacuation)? <p>At Koh Chak and Toul Korki Krom villages have boats, motorbikes and trucks to take people to safe places; and Ta Chak and Toul Korki Leu are near mountain, so can walk up mountain</p> <ul style="list-style-type: none"> • Could the current system be improved, and if so, how? <p>No reserve land by commune, but at school and pagoda</p> <ul style="list-style-type: none"> • Do any infrastructure/facilities need to be improved specifically for addressing potential extreme weather events? <p>Build roads connect to safe places, improve safe places and prepare water system and sanitation at public buildings</p>	<p>usually be predicted days in advance to allow time for relocation or other preparations if needed.</p>

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Group 2: Sihanoukville Province, Prey Nob District, Toul Toteung, Prey Nob and Ou Oknhaheng Communes

Chap.	Group Response	Relevance for CDP
4	<p>Population</p> <p>Ou Oknhaheng</p> <ul style="list-style-type: none"> • Has your Commune’s population (2006 – 12) grown slower or faster than the Provincial average? Population grew slower than average population of province • What do you think is the reason for this difference in growth rates? Migration into the commune is low, growth depends on births and low migration. The commune is not far from Sihanoukville, so some workers can commute daily. • Is there any way to reverse the outward migration of people, especially women? Increase occupation especially factories and help people in agricultural techniques • Do you think any of these reasons for faster/slower population growth relates to climate change or extreme weather events? If so, what reasons. No • Which events caused the “Victims of natural disasters” given in the statistics? Storm destroyed rice and crop production, sea water intrusion destroyed rice field along canals, heavy rain damaged rice seeds, pests destroyed rice and crop. <p>Prey Nob and Tuol Toteung</p> <ul style="list-style-type: none"> • Has your Commune’s population (2006 – 12) grown slower or faster than the Provincial average? Population is increasing and it grows similar to the provincial population • What do you think is the reason for this difference in growth rates? There is some migration in and out, growth depends on births and business opportunities. • Is there any way to reverse the outward migration of people, especially women? Increase occupation especially factories and help people in agricultural techniques • Do you think any of these reasons for faster/slower population growth relates to climate change or extreme weather events? If so, what reasons. No • Which events caused the “Victims of natural disasters” given in the statistics? Storms destroyed rice and crop production, sea water intrusion destroyed rice field, pest destroyed rice and crop 	<p>All 3 Communes are located on the main Phnom Penh – Sihanoukville road. This allows for easy migration to and from other areas. Populations are likely to vary according to the relative attractiveness of Commune occupations compared to those in nearby urban areas. Decision makers need to decide how much investment is to be made into the area to realise its potential for increasing agricultural yields, livestock and fishing.</p>
5	<p>Economy</p> <p>Ou Oknhaheng</p> <ul style="list-style-type: none"> • Has your Commune’s employment (2006 – 12) in each of the following: rice, fish and non-agricultural jobs, increased or decreased? 	<p>All Communes have potential to develop current economic activities. Much will depend on improving</p>

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Chap.	Group Response	Relevance for CDP
	<p>Rice cultivation has increased, fishing activity has decreased and non-agriculture increased</p> <ul style="list-style-type: none"> • Why do you think these increases/declines have occurred? <p>Rice cultivation increased due to rice cultivation technique improvement, increase yields and rice price increase. Fishing activity decreases due to reduction in use of some illegal fishing equipment. Non-agriculture increase due to business opportunity in commune</p> <ul style="list-style-type: none"> • Is there potential to increase the areas (hectares/m²) or season (weeks/months) allocated to either rice or shrimp farming? <p>No</p> <ul style="list-style-type: none"> • Do you expect a change in the proportion of people employed in rice, fish and services in future? If so, why? <p>Farming may decrease due to no potential land and farmers unable to increase agriculture yields. Fishing/aquaculture activities can increase, if people can learn those skills. Non-agriculture can increase because there is potential space for economic development</p> <ul style="list-style-type: none"> • Do you think any of these reasons for previous changes in types of employment relates to climate change or extreme weather events? If so, what reasons. <p>Change can be related to CC such as decrease of fishery due to forest degradation and other natural disasters, storm or strong wind; pest destroy rice production; sea water intrusion</p> <ul style="list-style-type: none"> • Do you expect climate change and/or extreme weather events to influence employment in future? <p>Yes, CC and weather will influence employment in future</p> <p>Prey Nob and Tuol Toteung</p> <ul style="list-style-type: none"> • Has your Commune's employment (2006 – 12) in each of the following: rice, fish and non-agricultural jobs, increased or decreased? <p>Rice cultivation has increased, fishing is increasing slowly and non-agriculture also increased</p> <ul style="list-style-type: none"> • Why do you think these increases/declines have occurred? <p>Rice cultivation increased due to rice cultivation technique improvement, increased yields and rice price increase. Fishing activity increases due to demand. Non-agriculture increase due to business opportunity such as factories, constructions, motorbike and tuk-tuk</p> <ul style="list-style-type: none"> • Is there potential to increase the areas (hectares/m²) or season (weeks/months) allocated to either rice or shrimp farming? <p>No</p> <ul style="list-style-type: none"> • Do you expect a change in the proportion of people employed in rice, fish and services in future? If so, why? <p>Farmers may increase if farmers are able to increase agriculture yields. Fishing/aquaculture activities can increase, if people can learn those skills. Non-agriculture can increase because there is potential space for economic development</p> <ul style="list-style-type: none"> • Do you think any of these reasons for previous changes in types of employment relates to climate change or extreme weather events? If so, what reasons. <p>Change can be related to CC such as decrease of fishery due to forest degradation and other natural disasters, storm or strong wind; pest destroy rice production; sea water intrusion</p> <ul style="list-style-type: none"> • Do you expect climate change and/or extreme weather events to influence employment in future? <p>Yes, CC and weather will influence employment in future</p>	<p>water management from the hills in the west to serve the rest of the areas, especially occupants in the polder</p>
6	<p>Housing & Utilities</p> <p>Ou Oknhaheng</p>	<p>There is a wide range of housing available in the Communes, from the</p>

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Chap.	Group Response	Relevance for CDP
	<ul style="list-style-type: none"> • Compare changes in population and housing in your Commune (2006 – 12). Have they changed at similar rates or is there now a housing shortage or surplus? Families growth rate is higher than for houses as some families don't own their own house • Has the quality of housing generally improved since 2006? Quality of houses are increasing: number of houses with thatched roof decreased significantly • Is the electricity supply mostly reliable or do people still need to rely on batteries/generators when there are power cuts? Electricity provision is reliable, but people unable to pay for connection and still rely on batteries and generators • Are there any major communal or shared water supply sources, especially for the dry season? Please locate them on the map and describe what sort of facility (e.g. piped, well, tank, lake). There is one public water supply source (reservoir) • Which areas tend to have problems with water supply (quality, amounts), especially during the dry season? Please locate them on the map. Bat Korki and O Tapang • Is there any potential to create a centralised water supply system which can collect water and serve the whole Commune? Bat Korki reservoir is a potential water supply source to create a centralised water supply system for the whole Commune • Is there a solid waste disposal site in the Commune? If no, where do people dispose of their waste? If yes, is it a controlled site? There is one big landfill for solid waste in O Tasek village to cater for Sihanoukville's waste, but this site is badly managed. However, within the commune the waste is burned and buried by households. • When housing is improved or newly built do the owners/builders include any provision for climate change in the designs? Have considered CC such as storm: high foundation, set up gutter and water system harvesting (but only a small proportion) • Do any buildings utilise renewable forms of energy?, e.g. solar/photovoltaic panels or wind. Solar energy available in health centre. • Are public buildings designed to take account of any unstable/weak soils in low lying areas (e.g. through piling or minimising weight of structures)? Public buildings designed considering natural disaster (most of buildings constructed along Road No. 4) • Have Dry Season safe water supplies been increasing or decreasing (number, quality) in recent years? If supplies have been decreasing is it due to climate change or to an increase in the population and demand for water? Safe water in dry season is limited, but it is not decreasing <p>Prey Nob</p> <ul style="list-style-type: none"> • Compare changes in population and housing in your Commune (2006 – 12). Have they changed at similar rates or is there now a housing shortage or surplus? Number of families and houses change at different rate. Lack of housing • Has the quality of housing generally improved since 2006? Quality of houses are increasing: number of houses with thatched roof decreased significantly • Is the electricity supply mostly reliable or do people still need to rely on batteries/generators when there are power cuts? 	<p>extremely simple to large reinforced concrete structures.</p> <p>Scope for improving solid waste disposal in communes, perhaps using one consolidated facility to start with to save money.</p>

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Chap.	Group Response	Relevance for CDP
	<p>Electricity provision is reliable, but people unable to pay for connection and still rely on batteries and generators</p> <ul style="list-style-type: none"> • Are there any major communal or shared water supply sources, especially for the dry season? Please locate them on the map and describe what sort of facility (e.g. piped, well, tank, lake). <p>There is one public water supply source, (reservoir in Prey Nob Pagoda). There is one private water supply system, but it is unusable in dry season</p> <ul style="list-style-type: none"> • Which areas tend to have problems with water supply (quality, amounts), especially during the dry season? Please locate them on the map. <p>Bak Krang village</p> <ul style="list-style-type: none"> • Is there any potential to create a centralised water supply system which can collect water and serve the whole Commune? <p>Prey Nob reservoir is a potential water supply source to create a centralised water supply system which can collect water and serve the whole Commune include Chumpou Khmao village of Tuol Toteung as well</p> <ul style="list-style-type: none"> • Is there a solid waste disposal site in the Commune? If no, where do people dispose of their waste? If yes, is it a controlled site? <p>No landfill (waste is burned and buried by households)</p> <ul style="list-style-type: none"> • When housing is improved or newly built do the owners/builders include any provision for climate change in the designs? <p>Some people construct big house considering CC by making strong foundation, tying up columns to make strong to protect against strong wind and set up gutter and water system harvesting</p> <ul style="list-style-type: none"> • Do any buildings utilise renewable forms of energy?, e.g. solar/photovoltaic panels or wind. <p>No</p> <ul style="list-style-type: none"> • Are public buildings designed to take account of any unstable/weak soils in low lying areas (e.g. through piling or minimising weight of structures)? <p>Public buildings designed considering natural disaster.</p> <ul style="list-style-type: none"> • Have Dry Season safe water supplies been increasing or decreasing (number, quality) in recent years? If supplies have been decreasing is it due to climate change or to an increase in the population and demand for water? <p>Safe water in dry season is limited.</p> <p>Tuol Toteung</p> <ul style="list-style-type: none"> • Compare changes in population and housing in your Commune (2006 – 12). Have they changed at similar rates or is there now a housing shortage or surplus? <p>Similar rate</p> <ul style="list-style-type: none"> • Has the quality of housing generally improved since 2006? <p>Quality of houses are increasing: number of houses with thatched roof decreased significantly</p> <ul style="list-style-type: none"> • Is the electricity supply mostly reliable or do people still need to rely on batteries/generators when there are power cuts? <p>Electricity provision is not reliable, so people still rely on batteries and generators</p> <ul style="list-style-type: none"> • Are there any major communal or shared water supply sources, especially for the dry season? Please locate them on the map and describe what sort of facility (e.g. piped, well, tank, lake). <p>No</p>	

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Chap.	Group Response	Relevance for CDP
	<ul style="list-style-type: none"> • Which areas tend to have problems with water supply (quality, amounts), especially during the dry season? Please locate them on the map. Chumpou Khmao village • Is there any potential to create a centralised water supply system which can collect water and serve the whole Commune? No • Is there a solid waste disposal site in the Commune? If no, where do people dispose of their waste? If yes, is it a controlled site? No landfill (waste is burned and buried by households) • When housing is improved or newly built do the owners/builders include any provision for climate change in the designs? Some people construct big house considering CC by making strong foundation, tying up columns to make strong to protect against strong wind and set up gutter and water system harvesting • Do any buildings utilise renewable forms of energy?, e.g. solar/photovoltaic panels or wind. No • Are public buildings designed to take account of any unstable/weak soils in low lying areas (e.g. through piling or minimising weight of structures)? Public buildings designed considering natural disaster. • Have Dry Season safe water supplies been increasing or decreasing (number, quality) in recent years? If supplies have been decreasing is it due to climate change or to an increase in the population and demand for water? Safe water in dry season is limited. 	
7	<p>Accessibility</p> <p>Note: this Chapter requires the mapping of infrastructure and services including status, proposals. Refer to maps for details.</p> <p>Ou Oknhaheng</p> <ul style="list-style-type: none"> • If you want to sell/buy goods do you go to this Market or elsewhere? If elsewhere, where and how far away (Km/Minutes)? Sell/buy goods in Ou Oknhaheng but nearest Market at Veal Renh (14 km) • Indicate on the map any new/improved routes (earth or non-earth) which would improve peoples' accessibility the map any new/improved routes: There are no plans for new routes • For those with water access, locate any existing jetties. Indicate on the map any new/improved jetties/moorings which would improve peoples' accessibility. Shown on map • Has accessibility within the Commune increased since 2006? Yes • Can accessibility be improved more? If yes, how? Yes, such as changing from temporary to permanent jetties and from earth to concrete roads. • If the Commune was to experience a SLR of 100 cm which routes would be affected? Would the whole Commune still be 	<p>Veal Renh is the nearest large thriving market for all Communes. It is situated at the junction of the Phnom Penh – Sihanoukville road with that running east to Kampot. It also provides a crossing point for the Phnom Penh – Sihanoukville railway. There is much potential for the further growth of this town. It will continue to provide a local market and also a variety of economic</p>

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Chap.	Group Response	Relevance for CDP
	<p>able to gain access to a main (National/Provincial/District) road No impact. Have polder dykes to protect</p> <ul style="list-style-type: none"> • Do all your road/bridge/culvert project proposals include an allowance for possible Climate Change or extreme weather events <p>Yes</p> <ul style="list-style-type: none"> • If road proposals are for higher elevations, do they consider the impact of the raised road on drainage patterns, especially the potential for inadvertently retaining flood waters after heavy rains? <p>No</p> <p>Prey Nob</p> <ul style="list-style-type: none"> • If you want to sell/buy goods do you go to this Market or elsewhere? If elsewhere, where and how far away (Km/Minutes)? Sell/buy goods locally but nearest Market at Veal Renh (10 km) • Indicate on the map any new/improved routes (earth or non-earth) which would improve peoples' accessibility the map any new/improved routes: <p>No new proposed road</p> <ul style="list-style-type: none"> • For those with water access, locate any existing jetties. Indicate on the map any new/improved jetties/moorings which would improve peoples' accessibility. <p>Shown on map</p> <ul style="list-style-type: none"> • Has accessibility within the Commune increased since 2006? <p>Yes</p> <ul style="list-style-type: none"> • Can accessibility be improved more? If yes, how? Yes, such as changing from temporary to permanent jetties and from earth to concrete roads. • If the Commune was to experience a SLR of 100 cm which routes would be affected? Would the whole Commune still be able to gain access to a main (National/Provincial/District) road <p>No impact. Have polder dykes to protect</p> <ul style="list-style-type: none"> • Do all your road/bridge/culvert project proposals include an allowance for possible Climate Change or extreme weather events <p>Yes</p> <ul style="list-style-type: none"> • If road proposals are for higher elevations, do they consider the impact of the raised road on drainage patterns, especially the potential for inadvertently retaining flood waters after heavy rains? <p>No</p> <p>Tuol Toteung</p> <ul style="list-style-type: none"> • If you want to sell/buy goods do you go to this Market or elsewhere? If elsewhere, where and how far away (Km/Minutes)? Market at Veal Renh (7 km) • Indicate on the map any new/improved routes (earth or non-earth) which would improve peoples' accessibility the map any new/improved routes: 	<p>opportunities for those living in the 3 Communes.</p>

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Chap.	Group Response	Relevance for CDP
	<p>No new proposed road</p> <ul style="list-style-type: none"> • For those with water access, locate any existing jetties. Indicate on the map any new/improved jetties/moorings which would improve peoples' accessibility. <p>Shown on map</p> <ul style="list-style-type: none"> • Has accessibility within the Commune increased since 2006? <p>Yes</p> <ul style="list-style-type: none"> • Can accessibility be improved more? If yes, how? <p>Yes, such as changing from temporary to permanent jetties and from earth to concrete roads.</p> <ul style="list-style-type: none"> • If the Commune was to experience a SLR of 100 cm which routes would be affected? Would the whole Commune still be able to gain access to a main (National/Provincial/District) road <p>No impact. Have polder dykes to protect</p> <ul style="list-style-type: none"> • Do all your road/bridge/culvert project proposals include an allowance for possible Climate Change or extreme weather events <p>Yes</p> <ul style="list-style-type: none"> • If road proposals are for higher elevations, do they consider the impact of the raised road on drainage patterns, especially the potential for inadvertently retaining flood waters after heavy rains? <p>No</p>	
8	<p>Identified Issues</p> <p>Note: this Chapter requires the mapping of issues and a review based on training outputs. Refer to maps for details.</p>	
9	<p>Land Use Planning & Climate Change Adaptation</p> <p>Note: this Chapter requires the mapping of the impact of an average SLR of 150 cm. Refer to maps for details.</p> <p>Ou Oknhaheng and Prey Nob</p> <ul style="list-style-type: none"> • Locate all land remaining above the 150 cm contour. <p>Most villages in lower parts up to the road would be flooded</p> <ul style="list-style-type: none"> • Decide which populations may have to adapt or be resettled. <p>People in these village need to move to higher sites</p> <ul style="list-style-type: none"> • What would be required for populations to adapt and not be resettled? <p>People living on lower part would need to learn fishery and aquaculture, but the people on upper part can do agriculture and livestock</p> <ul style="list-style-type: none"> • Identify which land may be suitable and available for resettlement. <p>Higher land</p> <ul style="list-style-type: none"> • Identify which schools, clinics, markets may need to be relocated. <p>Primary schools in Bek Krang ville need to be relocated (See map)</p> <ul style="list-style-type: none"> • Suggest viable livelihoods for those living in the Commune in such circumstances 	<p>A major SLR increase of 150 cm would inundate all land up to the Phnom Penh – Sihanoukville road. Much of the community already lives along this road. There is land available for resettling those living in the polder if necessary but land tenure issues would also need to be considered prior to such planning.</p>

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Chap.	Group Response	Relevance for CDP
	<p>Change from rice farming to crop farming livestock and services</p> <p>Toul Toteung</p> <ul style="list-style-type: none"> • Locate all land remaining above the 150 cm contour. Chumpou Khmao village will be flooded. Chong Khsach, Toul Totung 1, 2 and 3 will also be flooded • Decide which populations may have to adapt or be resettled. People in these village need to move to higher sites, especially Chumpou Khmao village • What would be required for populations to adapt and not be resettled? People living on lower part would need to learn fishery and aquaculture, but the people on upper part can do agriculture and livestock • Identify which land may be suitable and available for resettlement. Higher land • Identify which schools, clinics, markets may need to be relocated. School in Chumpou Khmao village needs to be relocated (See map) • Suggest viable livelihoods for those living in the Commune in such circumstances <p>Change from rice farming to crop farming livestock and services</p>	
10	<p>Disaster Risk Management (DRM)</p> <p>Ou Oknhaheng, Prey Nob and Toul Toteung</p> <ul style="list-style-type: none"> • What are the procedures for the Commune to receive warnings about expected extreme weather events (e.g. siren, mobile phone, SMS)? Meeting announcement, distribution from one person to another by phone call, siren and loudspeaker. • How does the Commune leadership pass on any warnings to the people? Commune chief distributes message to commune councils, to village chiefs and then to people • What actions do any early warning plans/training propose in the event of any impending event (e.g. escape route, nominated safe buildings, rendezvous points, responsibilities for evacuation)? Hillside safe places allocated, food prepared and logistics checked including facilities - boats, motorbikes and trucks (Koyon). Provide training on emergency procedures • Could the current system be improved, and if so, how? Rehabilitate/restore access, especially polder dykes and put up sign board • Do any infrastructure/facilities need to be improved specifically for addressing potential extreme weather events? Prepare water system and sanitation at public buildings 	<p>All Communes have systems established for warnings in advance of potential disasters. These are likely to be storms with severe rain, wind and storm surges in the polder areas which can usually be predicted days in advance to allow time for relocation or other preparations if needed. There is only one road access to the area but it is the main Phnom Penh – Sihanoukville road which should remain open and ensure that flight and rescue are organised efficiently</p>

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Group 3: Sihanoukville Province, Prey Nob District, Samaki, Teok Laok and Teok Thla Communes

Chap.	Group Response	Relevance for CDP
4	<p>Population</p> <p>Samaki</p> <ul style="list-style-type: none"> • Has your Commune’s population (2006 – 12) grown slower or faster than the Provincial average? Population grew slower than average population of province • What do you think is the reason for this difference in growth rates? Before 2008, people migrated to the commune to claim the land and collect timber and Non-Timber Forest Products (NTFP), but they migrated back after then (because property is sold and timber and NTFP declined) • Is there any way to reverse the outward migration of people, especially women? Increase occupation such as livestock and cropping, help farmers in development of subsistence planning and find market for selling products • Do you think any of these reasons for faster/slower population growth relates to climate change or extreme weather events? If so, what reasons. Pop decrease can be related to CC such as storms destroying rice fields and crop; and also work outside can have better benefits • Which events caused the “Victims of natural disasters” given in the statistics? Storm destroyed rice and crop production, sea water intrusion destroyed rice field along canals, heavy rain damaged rice seeds, pests destroyed rice and crop. <p>Teok Laok</p> <ul style="list-style-type: none"> • Has your Commune’s population (2006 – 12) grown slower or faster than the Provincial average? Population is increasing and it grows faster than provincial population • What do you think is the reason for this difference in growth rates? There is no migration in and out, growth depends on births (migration just for work outside but return during holiday and celebration) • Is there any way to reverse the outward migration of people, especially women? Increase occupations (sewing clothes in family scale), raising animals and cropping, help farmers in development of subsistence planning and find market for selling products • Do you think any of these reasons for faster/slower population growth relates to climate change or extreme weather events? If so, what reasons. There are CC issues in commune • Which events caused the “Victims of natural disasters” given in the statistics? Storms destroyed rice and crop production, sea water intrusion destroyed rice field, pest destroyed rice and crop <p>Teok Thla</p> <ul style="list-style-type: none"> • Has your Commune’s population (2006 – 12) grown slower or faster than the Provincial average? 	<p>Both Teok Laok and Teok Thla have extremely high growth rates for the period whereas Samaki has rates below the provincial average, even though it is closer to the market at Veal Renh. This anomaly should be studied to see if there is potential for Samaki to grow faster.</p>

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Chap.	Group Response	Relevance for CDP
	<p>Population is increasing and it grows faster than provincial population</p> <ul style="list-style-type: none"> • What do you think is the reason for this difference in growth rates? <p>There is no migration in and out, growth depends on births (migration just for work outside but return during holiday and celebration). No job opportunity in commune.</p> <ul style="list-style-type: none"> • Is there any way to reverse the outward migration of people, especially women? <p>Increase occupations (sewing clothes in family scale), raising animals and cropping, help farmers in development of subsistence planning and find market for selling products</p> <ul style="list-style-type: none"> • Do you think any of these reasons for faster/slower population growth relates to climate change or extreme weather events? If so, what reasons. <p>There are CC issues in commune</p> <ul style="list-style-type: none"> • Which events caused the “Victims of natural disasters” given in the statistics? <p>Storms destroyed rice and crop production, sea water intrusion destroyed rice field, pest destroyed rice and crop</p>	
5	<p>Economy</p> <p>Samaki</p> <ul style="list-style-type: none"> • Has your Commune’s employment (2006 – 12) in each of the following: rice, fish and non-agricultural jobs, increased or decreased? <p>Rice cultivation has increased, No fishing activity in commune and non-agriculture slowly decrease</p> <ul style="list-style-type: none"> • Why do you think these increases/declines have occurred? <p>Rice cultivation: due to rice price increase and cultivation technique improvement (farmer increase but proportion of land owned can decrease), No people involved in fishery, non-agriculture decrease due to no business opportunity in commune</p> <ul style="list-style-type: none"> • Is there potential to increase the areas (hectares/m2) or season (weeks/months) allocated to either rice or shrimp farming? <p>There is an island (about 700ha, rice field and shrimp farm) but it is affected by sea water</p> <ul style="list-style-type: none"> • Do you expect a change in the proportion of people employed in rice, fish and services in future? If so, why? <p>Farmer can decrease due to land potential declines and agriculture production can’t support families, no people interested in fishery, non-agriculture can increase because there is potential area for economic activities including ecotourism</p> <ul style="list-style-type: none"> • Do you think any of these reasons for previous changes in types of employment relates to climate change or extreme weather events? If so, what reasons. <p>No</p> <ul style="list-style-type: none"> • Do you expect climate change and/or extreme weather events to influence employment in future? <p>CC and weather will influence employment in future</p> <p>Teok Laok</p> <ul style="list-style-type: none"> • Has your Commune’s employment (2006 – 12) in each of the following: rice, fish and non-agricultural jobs, increased or decreased? <p>Rice cultivation has increased, fishing is constant and non-agriculture increased</p> <ul style="list-style-type: none"> • Why do you think these increases/declines have occurred? 	<p>Sea water intrusion into rice fields has been identified as a major issue for all Communes. Since the dyke does not extend into this area the farmers are more affected by tides, storms and SLR. The river/estuary serving the area is presumably becoming more saline in the dry season due to SLR and is only flushed out during the wet season. Whether a barrage of other form of water control is possible would require further investigation.</p>

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Chap.	Group Response	Relevance for CDP
	<p>Rice cultivation increased due rice price increase and cultivation technique improvement (farmer increase but proportion of land owned can decrease), No change in fishery, non-agriculture increased as there is some business in commune (factory workers)</p> <ul style="list-style-type: none"> • Is there potential to increase the areas (hectares/m2) or season (weeks/months) allocated to either rice or shrimp farming? Yes if sea water dike constructed • Do you expect a change in the proportion of people employed in rice, fish and services in future? If so, why? Farmers may decrease due to land potential in decline and agriculture production can't support families, Fishery can increase if people understand CC adaptation, non-agriculture can increase because there is economic opportunity in the area • Do you think any of these reasons for previous changes in types of employment relates to climate change or extreme weather events? If so, what reasons. No. • Do you expect climate change and/or extreme weather events to influence employment in future? CC and weather will influence employment in future <p>Teok Thla</p> <ul style="list-style-type: none"> • Has your Commune's employment (2006 – 12) in each of the following: rice, fish and non-agricultural jobs, increased or decreased? Rice cultivation has increased, fishing increased and non-agriculture decreased • Why do you think these increases/declines have occurred? Rice cultivation increased due rice price increase and cultivation technique improvement, Fishing activity increased due to culture for these people (Muslim), non-agriculture decreased due to no business opportunities. • Is there potential to increase the areas (hectares/m2) or season (weeks/months) allocated to either rice or shrimp farming? Yes if sea water dike constructed (about 300 ha) • Do you expect a change in the proportion of people employed in rice, fish and services in future? If so, why? Farmers may decrease due to land potential in decline and agriculture production can't support families, Fishery can increase if as this is local culture/skill, non-agriculture can increase because there is economic opportunity in the area • Do you think any of these reasons for previous changes in types of employment relates to climate change or extreme weather events? If so, what reasons. No. • Do you expect climate change and/or extreme weather events to influence employment in future? CC and weather will influence employment in future 	
6	<p>Housing & Utilities</p> <p>Samaki</p> <ul style="list-style-type: none"> • Compare changes in population and housing in your Commune (2006 – 12). Have they changed at similar rates or is there now a housing shortage or surplus? House and population increase at a similar rate • Has the quality of housing generally improved since 2006? 	In terms of roofing these 3 Communes have improved dramatically over the period from much higher levels of

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Chap.	Group Response	Relevance for CDP
	<p>Number of houses with thatched roof still high but quality of houses are increasing (family income increases)</p> <ul style="list-style-type: none"> • Is the electricity supply mostly reliable or do people still need to rely on batteries/generators when there are power cuts? <p>Electricity provision is reliable, but people unable to pay for connection and still rely on batteries and generators</p> <ul style="list-style-type: none"> • Are there any major communal or shared water supply sources, especially for the dry season? Please locate them on the map and describe what sort of facility (e.g. piped, well, tank, lake). <p>No large scale public water supply source, especially in dry season</p> <ul style="list-style-type: none"> • Which areas tend to have problems with water supply (quality, amounts), especially during the dry season? Please locate them on the map. <p>All places in commune have problem with water supply in dry season</p> <ul style="list-style-type: none"> • Is there any potential to create a centralised water supply system which can collect water and serve the whole Commune? <p>There are available water supply sources in dry season in two villages. If pond restored (Beong Trav) a water line could be connected</p> <ul style="list-style-type: none"> • Is there a solid waste disposal site in the Commune? If no, where do people dispose of their waste? If yes, is it a controlled site? <p>No landfill for solid waste, most waste is burned and buried by households and some use as fertilizer</p> <ul style="list-style-type: none"> • When housing is improved or newly built do the owners/builders include any provision for climate change in the designs? <p>Have considered CC such as storm: tie column and make strong to protect against strong wind, set up gutter and water system harvesting (but only a small proportion)</p> <ul style="list-style-type: none"> • Do any buildings utilise renewable forms of energy?, e.g. solar/photovoltaic panels or wind. <p>Solar energy used to be available, but now all broken</p> <ul style="list-style-type: none"> • Are public buildings designed to take account of any unstable/weak soils in low lying areas (e.g. through piling or minimising weight of structures)? <p>Yes but technique still limited.</p> <ul style="list-style-type: none"> • Have Dry Season safe water supplies been increasing or decreasing (number, quality) in recent years? If supplies have been decreasing is it due to climate change or to an increase in the population and demand for water? <p>Safe water in dry season is limited, but it is not decreasing</p> <p>Teok Laok</p> <ul style="list-style-type: none"> • Compare changes in population and housing in your Commune (2006 – 12). Have they changed at similar rates or is there now a housing shortage or surplus? <p>Number of families and houses change at different rate. Lack of housing</p> <ul style="list-style-type: none"> • Has the quality of housing generally improved since 2006? <p>Quality of houses are increasing (family income increases)</p> <ul style="list-style-type: none"> • Is the electricity supply mostly reliable or do people still need to rely on batteries/generators when there are power cuts? <p>Electricity provision is reliable, but people unable to pay for connection and still rely on batteries and generators</p> <ul style="list-style-type: none"> • Are there any major communal or shared water supply sources, especially for the dry season? Please locate them on the map and describe what sort of facility (e.g. piped, well, tank, lake). <p>No large scale public water supply source, especially in dry season (all canals and ponds dry up)</p>	<p>thatched roofs than other Communes in Prey Nob. However, they still have a larger proportion of such temporary roofs which perhaps their relative remoteness and lack of water management (no sea dyke).</p> <p>All Communes identified a problem with dry season water. There is some potential for communal water provision. There are significant flows of water from the Bokor hills which could be tapped</p>

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Chap.	Group Response	Relevance for CDP
	<ul style="list-style-type: none"> • Which areas tend to have problems with water supply (quality, amounts), especially during the dry season? Please locate them on the map. All places in commune have problem with water supply in dry season • Is there any potential to create a centralised water supply system which can collect water and serve the whole Commune? Shown on map • Is there a solid waste disposal site in the Commune? If no, where do people dispose of their waste? If yes, is it a controlled site? No landfill (waste is burned and buried by households) • When housing is improved or newly built do the owners/builders include any provision for climate change in the designs? Have considered CC such as storm: tie column and make strong to protect against strong wind, set up gutter and water system harvesting (but only a small proportion) • Do any buildings utilise renewable forms of energy?, e.g. solar/photovoltaic panels or wind. No • Are public buildings designed to take account of any unstable/weak soils in low lying areas (e.g. through piling or minimising weight of structures)? Public buildings designed considering natural disaster especially on any unstable/weak soils in low lying areas • Have Dry Season safe water supplies been increasing or decreasing (number, quality) in recent years? If supplies have been decreasing is it due to climate change or to an increase in the population and demand for water? Safe water in dry season is decreasing because population growing <p>Teok Thla</p> <ul style="list-style-type: none"> • Compare changes in population and housing in your Commune (2006 – 12). Have they changed at similar rates or is there now a housing shortage or surplus? Number of families and houses change at different rate. Lack of housing • Has the quality of housing generally improved since 2006? Quality of houses are increasing (family income increases) • Is the electricity supply mostly reliable or do people still need to rely on batteries/generators when there are power cuts? Electricity provision is reliable, but people unable to pay for connection and still rely on batteries and generators • Are there any major communal or shared water supply sources, especially for the dry season? Please locate them on the map and describe what sort of facility (e.g. piped, well, tank, lake). There are large scale of public water supply source, but need to restore (in Prek Pras and Kampong Chen villages) • Which areas tend to have problems with water supply (quality, amounts), especially during the dry season? Please locate them on the map. All places in commune have problem with water supply in dry season • Is there any potential to create a centralised water supply system which can collect water and serve the whole Commune? Shown on map • Is there a solid waste disposal site in the Commune? If no, where do people dispose of their waste? If yes, is it a controlled 	

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Chap.	Group Response	Relevance for CDP
	<p>site? No landfill (waste is burned and buried by households)</p> <ul style="list-style-type: none"> • When housing is improved or newly built do the owners/builders include any provision for climate change in the designs? Have considered CC such as storm: tie column and make strong to protect against strong wind, set up gutter and water system harvesting (but only a small proportion) • Do any buildings utilise renewable forms of energy?, e.g. solar/photovoltaic panels or wind. No • Are public buildings designed to take account of any unstable/weak soils in low lying areas (e.g. through piling or minimising weight of structures)? Public buildings designed considering natural disaster but limited technique. • Have Dry Season safe water supplies been increasing or decreasing (number, quality) in recent years? If supplies have been decreasing is it due to climate change or to an increase in the population and demand for water? Safe water in dry season is unchanged. 	
7	<p>Accessibility</p> <p>Note: this Chapter requires the mapping of infrastructure and services including status, proposals. Refer to maps for details.</p> <p>Samaki</p> <ul style="list-style-type: none"> • If you want to sell/buy goods do you go to this Market or elsewhere? If elsewhere, where and how far away (Km/Minutes)? Market at Veal Renh (7 km) • Indicate on the map any new/improved routes (earth or non-earth) which would improve peoples' accessibility the map any new/improved routes: There are no plans for new routes • For those with water access, locate any existing jetties. Indicate on the map any new/improved jetties/moorings which would improve peoples' accessibility. Shown on map • Has accessibility within the Commune increased since 2006? No • Can accessibility be improved more? If yes, how? Yes, such as changing from temporary to permanent jetties and from earth to concrete roads. • If the Commune was to experience a SLR of 100 cm which routes would be affected? Would the whole Commune still be able to gain access to a main (National/Provincial/District) road No impact • Do all your road/bridge/culvert project proposals include an allowance for possible Climate Change or extreme weather events We have never considered about CC, but afterward we will consider • If road proposals are for higher elevations, do they consider the impact of the raised road on drainage patterns, especially 	<p>All Communes are located on the recently renovated Veal Reng to Kampot road.</p>

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Chap.	Group Response	Relevance for CDP
	<p>the potential for inadvertently retaining flood waters after heavy rains? Road proposals are at higher elevations but need to consider the impact of the raised road on drainage patterns. For dykes or jetties never consider CC.</p> <p>Teok Laok</p> <ul style="list-style-type: none"> • If you want to sell/buy goods do you go to this Market or elsewhere? If elsewhere, where and how far away (Km/Minutes)? Market at Veal Renh (11 km) • Indicate on the map any new/improved routes (earth or non-earth) which would improve peoples' accessibility the map any new/improved routes: No new proposed road • For those with water access, locate any existing jetties. Indicate on the map any new/improved jetties/moorings which would improve peoples' accessibility. Shown on map • Has accessibility within the Commune increased since 2006? No • Can accessibility be improved more? If yes, how? Yes, such as changing from temporary to permanent jetties and from earth to concrete roads. • If the Commune was to experience a SLR of 100 cm which routes would be affected? Would the whole Commune still be able to gain access to a main (National/Provincial/District) road No impact • Do all your road/bridge/culvert project proposals include an allowance for possible Climate Change or extreme weather events We have never considered about CC, but afterward we will consider • If road proposals are for higher elevations, do they consider the impact of the raised road on drainage patterns, especially the potential for inadvertently retaining flood waters after heavy rains? Road proposals are at higher elevations but need to consider the impact of the raised road on drainage patterns. For dykes or jetties never consider CC. <p>Teok Thla</p> <ul style="list-style-type: none"> • If you want to sell/buy goods do you go to this Market or elsewhere? If elsewhere, where and how far away (Km/Minutes)? Market at Trapang Ropov (300 metres) • Indicate on the map any new/improved routes (earth or non-earth) which would improve peoples' accessibility the map any new/improved routes: No new proposed road • For those with water access, locate any existing jetties. Indicate on the map any new/improved jetties/moorings which would improve peoples' accessibility. Shown on map 	

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Chap.	Group Response	Relevance for CDP
	<ul style="list-style-type: none"> • Has accessibility within the Commune increased since 2006? No • Can accessibility be improved more? If yes, how? Yes, such as changing from temporary to permanent jetties and from earth to concrete roads. • If the Commune was to experience a SLR of 100 cm which routes would be affected? Would the whole Commune still be able to gain access to a main (National/Provincial/District) road No impact • Do all your road/bridge/culvert project proposals include an allowance for possible Climate Change or extreme weather events We have never considered about CC, but afterward we will consider • If road proposals are for higher elevations, do they consider the impact of the raised road on drainage patterns, especially the potential for inadvertently retaining flood waters after heavy rains? Road proposals are at higher elevations but need to consider the impact of the raised road on drainage patterns. For dykes or jetties never consider CC. 	
8	<p>Identified Issues</p> <p>Note: this Chapter requires the mapping of issues and a review based on training outputs. Refer to maps for details.</p>	
9	<p>Land Use Planning & Climate Change Adaptation</p> <p>Note: this Chapter requires the mapping of the impact of an average SLR of 150 cm. Refer to maps for details.</p> <p>Samaki, Teok Laok and Teok Thla</p> <ul style="list-style-type: none"> • Locate all land remaining above the 150 cm contour. If the SLR 150cm, all villages on the lower part of road No. 3 and villages near lower streams will mostly be flooded • Decide which populations may have to adapt or be resettled. People in these villages need to move to the mountain sites, but upper sites can be adapted • What would be required for populations to adapt and not be resettled? People living on lower part difficult to adapt, they would need to learn fishery and aquaculture, but the people on upper part can do agriculture and livestock • Identify which land may be suitable and available for resettlement. The uplands of Bokor mountain • Identify which schools, clinics, markets may need to be relocated. See map • Suggest viable livelihoods for those living in the Commune in such circumstances Change from rice farming to crop farming livestock and services 	<p>Much of all 3 Communes would be inundated if there was a 150 cm SLR. However, the logical relocation area (Bokor) is a national park and also has very steep slopes on its margins so locating suitable sites would require survey and discussion with relevant agencies.</p>
10	<p>Disaster Risk Management (DRM)</p>	<p>All Communes have</p>

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Chap.	Group Response	Relevance for CDP
	<p>Samaki, Teok Laok and Teok Thla</p> <ul style="list-style-type: none"> • What are the procedures for the Commune to receive warnings about expected extreme weather events (e.g. siren, mobile phone, SMS)? Meeting announcement, distribution from one person to another by phone call. • How does the Commune leadership pass on any warnings to the people? Commune chief distributes message to commune councils, to village chief and then to people • What actions do any early warning plans/training propose in the event of any impending event (e.g. escape route, nominated safe buildings, rendezvous points, responsibilities for evacuation)? Hillside safe places allocated, food prepared and logistics checked including facilities - boats, motorbikes and trucks (Koyon). Establish disaster management mechanism • Could the current system be improved, and if so, how? Rehabilitate/restore access and put up sign board • Do any infrastructure/facilities need to be improved specifically for addressing potential extreme weather events? Prepare water system and sanitation at public buildings 	<p>systems established for warnings in advance of potential disasters. These are likely to be storms with severe rain and wind which can usually be predicted days in advance to allow time for relocation or other preparations if needed.</p> <p>There is also potential for severe flooding and landslides related events from the Bokor hills.</p>

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Proposed Investment Projects

The following contains information (including details of their respective costs) from the various Communes for Climate Change and CDP related projects for their proposed inclusion into Commune Investment Plans (CIP) for 2014. This information sets a baseline for 2015, at which time it can be checked as to which projects were implemented, which still remain as priorities and whether any CC related projects are to be included in the CIP in 2015.

Peam Krasob

No.	Name of Project or Activity	Commune Priority	Location	Estimated cost (m riels)	Beneficiaries		Resource (if external)
					Total	Female	
1	Renovate school		Village 1	12,000	190	100	
2	Provide sanitary facilities	✓	Village 1 and 2	7,000	70	35	
3	Build two buildings of kindergarten	✓	Village 1 and 2	900	1,322	645	Education
4	Provide accommodation close to school for students from remote villages.		Village 1	900	1,322	645	Education
5	Build facility for protecting bank from erosion	✓	Village 1 and 2	124,000	1,322	645	
6	Repair concrete road with base	✓	Village 1 and 2	9,000	1,322	645	
7	Restore red soil road		Village 1 and 2	9,000	1,322	645	
8	Construct concrete road		Village 1 and 2	321,000	1,322	645	
9	Construct concrete bridge with pole at tourist sites		Village 2	123,000	1,322	645	
10	Renovation of sea dyke to protect sea water intrusion into house holds		Village 1 and 2	976,500	1,322	645	
11	Renovate area of ticket selling	✓	Village 2	5,000	1,322	645	
12	Renovate souvenir shops		Village 2	39,000	1,322	645	
13	Build sanitary WC in all households	✓	Village 1 and 2	22,230	342	145	
14	Provide materials to build Sanitary WC	✓	Village 1 and 2	22,230	122	64	
15	Buy waste bin for town and families		Village 1 and 2	4,800	1,322	645	
16	Provide budget for clean team to clean environment at tourist sites	✓	Village 1 and 2	1,200	6	4	
17	Request electricity connection and public water supply for all households		Village 1 and 2		1,022	245	
18	Request solar systems		Village 2 Koh	105,000	350	180	

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No.	Name of Project or Activity	Commune Priority	Location	Estimated cost (m riels)	Beneficiaries		Resource (if external)
					Total	Female	
			(Kang village)				
19	Improve natural coast of Peam Krasob		Village 1	60,000	1,322	645	
20	Training on integrated farming (raising pig, cattle, goat, poultry, frog, fish, crabs, mushrooms etc.	✓	village 1 and 2	5,000	300	180	
21	Vocational Training (garment, electricity, small machine repairing, man/woman haircut	✓	Village 1 and 2	8,500	60	20	
22	Provide loan with low interest to support the choice of implementation in order to earn their livings		Village 1 and 2	600,000	567	361	
23	Construct water gate		Village 1 and 2	78,000	1,322	645	
24	Equip pipes across the road		Village 1 and 2	15,000	1,322	645	
25	Construct concrete road		Village 1 and 2	215,000	1,322	645	
26	Repair concrete bridge at tourist sites		Village 2	8,000	1,322	645	
27	Construct concrete shed at tourist areas		Village 2	226,000	1,322	645	
28	Improve parking area by top up soil at tourist areas	✓	Village 2	12,000	1,322	645	
29	Repair, improve flying bridge	✓	Village 2	215,000	1,322	645	
30	Training on technique of livestock raising by feeding naturally		Village 1 and 2	5,000	250	150	
31	Provide good animal species such as pigs, ducks & goats	✓	Village 1 and 2	15,000	60	20	
32	Replanting mangrove	✓	Village 1 and 2	54	1,322	645	CCCA/BCCP
33	Support environmentally aquaculture (raising of crab, shrimp, shells, snail)	✓	Village 1 and 2	50,000	715	337	
34	Circulate education and training on Environment and Climate Change	✓	Peam Krasob village		1,322	645	CCCA/BCCP
35	Promote program of community livelihood	✓	Peam Krasob commune		1,322	645	CCCA/BCCP
36	Demonstrate Integrated Framing and Climate Change	✓	Village 1 and 2	9,000	1,322	645	CCCA/BCCP
37	Improve and extend eco-tourist actions in community	✓	Throughout commune	9,000	1,322	645	BCCP
38	Provide budget to patrol team of natural resource community	✓	Whole commune	6,000	1,322	645	CCCA/BCCP

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No.	Name of Project or Activity	Commune Priority	Location	Estimated cost (m riels)	Beneficiaries		Resource (if external)
					Total	Female	
39	Establish area for tree seedling	✓	Village 2				CCCA/BCCP
40	Demarking of community of natural zone	✓	Whole commune	6,000	1,322	645	BCCP
41	Mapping commune administration zone		Peam Krasob commune	6,000	1,322	645	
42	Construct commune office		Village 1	45,000	1,322	645	
43	Provide land titles to people using legally		Peam Krasob commune	8,000	1,322	645	
44	Provide land title to commune		Whole commune	600	1,322	645	
45	Issue permission letters to construct other constructions to people legally		Peam Krasob commune	16,000	1,322	645	
46	Circulate the ownership and using land titles		Peam Krasob commune	16,000	1,322	645	Land management

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Toul Kokir

No	Name of Project or Activity	Location	Estimated Cost Riels (000)	Beneficiaries		Resource (if external)
				Total	Female	
1	Construct red soil road	Toul Kokir leu village and Toul Kokir Krom village	57,000	1, 207	597	
2	Restore natural pond in Toul Kokir	Toul Kokir leu village and Toul Kokir Krom village	473,792	1, 207	597	CARP/CCCA
3	Demonstration of agriculture protocol and short term variety of seed	Toul Kokir leu village and Toul Kokir Krom village	22,000	1, 207	597	CARP/CCCA
4	Intervention of animal vaccination and treatment	4 villages/whole commune	800	210	105	DoAFF
5	Digging pipe wells	Tachat , Koh Chak	14,000	477	228	CARP/CCCA
6	Create state kindergarten in primary school	Tachat village	1,500	25	13	DoEd
7	Circulate the sanitary in 3 livings	4 villages/whole commune	480	150	80	
8	Provide clean water tank to poor people	4 villages/whole commune	1,530	120	60	
9	Disseminate health of breeding for youths.	4 villages/whole commune	270	68	45	
10	Educate and training on Environment	4 villages/whole commune	25,000	100	50	DoE CARP/CCCA
11	Demonstrate Integrated Farming and climate change	4 villages/whole commune	142,000	100	50	CARP/CCCA
12	Intervention of destroy pest from crops	4 villages/whole commune	1,200	324	162	DoAFF

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Teok Thla

No	Project Title	Location	Description	Why is it needed?	Estimated Cost (\$)
1	Construct dug well	All villages	20 wells	Lack of clean water	10,000
2	Construct drilled well	1 village	1 well, Kampong Chen village	Increase depth of ground water	60,000
3	Rain water collection pond	All villages	4 ponds	Water source is not testy	16,000
4	Water diversion dam	1 location	Kampong Chen village	Supply water for animal and crop	8,500
5	Salt water protection dam	All villages	Length 17 km	Salt water intrusion	350,000
6	Provide livestock	All villages	Chickens, pigs, cows, 100 HH	Diversify job, adapt to CC	25,000
7	Training on animal feeding	All villages	4 courses, 100 farmers	Increase awareness	1,000
8	Provide crop variety	All villages	100 households	Diversify job	1,000
9	Training on cropping	All villages	4 courses, 100 farmers	Increase awareness	1,000
10	Multiple agriculture	All villages	8 sites	Increase awareness, professional	16,000
11	Farmer field school	All villages	4 sites	Transfer awareness	6,000
12	Training on disaster risk reduction	All villages	2 courses, 100 farmers	Protect disaster	1,000
13	Disseminate environmental awareness	All villages	4 courses, 100 farmers	Lack of clean water	1,000
14	Construct hygienic toilet	All villages	20 Toilets	Impact environment	10,000
15	Disaster tool/ information	All villages	5 sets	Provide disaster information	2,500
16	Plant mangrove	All villages	10,000 trees	Protect erosion and storm	30,000
17	Support and create community	2 villages	2 communities	Reduce natural resource damage	30,000

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Teok Laok

No	Project Title	Location	Description	Why is it needed?	Estimated Cost (\$)
1	Construct dug well	All villages	30 wells	Lack of clean water	10,000
2	Construct drilled well	4 village	4 wells	Increase depth of ground water	2,400
3	Rain water collection pond	1 village	2 ponds	Water source is not testy	8,000
4	Water diversion structures	1 area	Chrolong village	Supply water for animal and crops	8,500
5	Salt water protection dam	All villages	Length 22 km	Salt water intrusion	400,000
6	Provide livestock	All villages	Chickens, pigs, cows, 120 HH	Diversify job, adapt to CC	27,000
7	Training on animal feeding	All villages	4 courses, 100 farmers	Increase awareness	1,000
8	Provide crop variety	All villages	100 households	Diversify job	1,000
9	Training on cropping	All villages	4 courses, 100 farmers	Increase awareness	1,000
10	Multiple agriculture	All village	8 sites	Increase awareness, professional	16,000
11	Farmer field school	All villages	4 sites	Transfer awareness	6,000
12	Training on disaster risk reduction	All villages	2 courses, 100 farmers	Protect disaster	1,000
13	Disseminate environmental awareness	All villages	4 courses, 100 farmers	Lack of clean water	1,000
14	Construct hygienic toilet	All villages	20 Toilets	Impact environment	10,000
15	Disaster tool/ information	All villages	5 sets	Provide disaster information	2,500
16	Plant mangrove	All villages	10,000 trees	Protect erosion and storm	30,000
17	Support and create community	2 villages	2 communities	Reduce environmental damage	30,000
18	Rehabilitate pond	1 village	size 120mx30m	Lack of water consumption	15,000
19	Rehabilitate canal	2 villages	4,200m	Lack of water consumption	15,000
20	Connect water pipe	1 village	3,000m	Water is not tasty	20,000

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Samaki

No	Project Title	Location	Description	Why is it needed?	Estimated Cost (\$)
1	Construct dug well	All villages	30 wells	Lack of clean water	15,000
2	Construct drilled well	4 village	4 wells	Increase depth of ground water	2,400
3	Rain water collection pond	1 village	2 ponds	Water source is not testy	8,000
4	Multiple agriculture	All villages	3 sites	Increase awareness, professional	6,000
5	Provide livestock	All villages	Chickens, pigs, cows, 120HH	Increase awareness, adapt to CC	27,000
6	Rehabilitate lake protection dam	1 village	Ta Aong Thom, used by 2 villages	Maintain water use	25,000
7	Salt water protection dam	All villages	Length 17 km	Salt water intrusion	350,000
8	Training on animal feeding	All villages	4 courses, 100 farmers	Increase awareness	1,000
9	Provide crop variety	All villages	100 households	Increase professional	1,000
10	Training on cropping	All villages	4 courses, 100 farmers	Increase awareness	1,000
11	Farmer field school	All villages	4 sites	Transfer awareness	6,000
12	Training on disaster risk reduction	All villages	2 courses, 100 farmers	Protect disaster	1,000
13	Environmental awareness	All villages	4 courses, 100 farmers	Lack of clean water	1,000
14	Construct hygienic toilet	All villages	20 Toilets	Impact environment	10,000
15	Disaster tool/ information	All villages	5 sets	Disseminate disaster information	2,500
16	Plant mangrove	All villages	10,000 trees	Protect erosion and storm	30,000
17	Support and create community	2 villages	2 communities	Reduce environmental damage	30,000
18	Rehabilitate pond	1 village	size 120mx30m	Lack of water use	15,000
19	Rehabilitate canal	2 villages	4,200m	Lack of water use	15,000
20	Connect water pipe	1 village	3,000m	Water is not tasty	20,000

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Tuol Toteung

No	Project Title	Location	Description	Why is it needed?	Estimated Cost (\$)
1.	Train on rice cropping technology	Toul Toteung 1, 2,3 and Chum Poul Khmao village	People are better educated	Low rice yield Need high yield	1,500
2.	Vaccinate livestock	Toul Toteung 1, 2,3 village	Animal get diseases	Protect and reduce baby animal death	500
3.	Rehabilitate tertiary canal	Toul Toteung 1, 2 village	Canal damaged	Need	8,000
4.	Multiple agriculture	Toul Toteung 1, 2,3 and Chum Poul Khmao village	Limited multiple agriculture technology	Need awareness	12,000
5.	water storage/reservoir	Toul Toteung 2 village	Lack water for domestic use and farming	Need water for domestic use and farming	20,000
6.	Construct sand connect clean water pipe	Toul Toteung 1, 2,3 and Chum Poul Khmao village	Lack of clean water	Provide sufficient use of clean water	62,500
7.	Disseminate information on climate change	Toul Toteung 1, 2,3 and Chum Poul Khmao village	Irregular Weather	Adapt to climate change	1,000
8.	Strengthen community fishery	Chum Poul Khmao village	Protect fisheries resources	Adapt to climate change	2,000
9.	Plant mangrove	Chum Poul Khmao village		Adapt to climate change	1,500
10.	Control mangroves	Chum Poul Khmao village		Adapt to climate change	1,000
11.	Disseminate fisheries and forestry law	Toul Toteung 1, 2,3 and Chum Poul Khmao village		Adapt to climate change	1,500
12.	Install posters	Chum Poul Khmao village		Adapt to climate change	2,000
13.	Educate environmental awareness and law	Toul Toteung 1, 2,3 and Chum Poul Khmao village		Adapt to climate change	1,000

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Prey Nob

No	Project Title	Location	Description	Why is it needed?	Estimated Cost (\$)
1.	Train on rice cropping technology	All villages (5 villages)	People's knowledge is still limited	Important employment/job and better livelihoods	2,000
2.	Vaccinate livestock	5 villages	5 courses	Animal health	2,000
3.	Rehabilitate tertiary canal	5 villages	4mx2500m	Irrigated water	20,000
4.	Multiple agriculture	5 villages	5 courses	Road	2,000
5.	Water storage/reservoir	Prey Nob 2 Village	Rehabilitate reservoir	Increase fisheries	15,000
6.	Construct and connect clean water pipe	Prey Nob 1 village	7000m	Increase people's awareness on agriculture	15,000
7.	Disseminate information on climate change	Bek Krang village	5 courses	People's need	2,000
8.	Strengthen community fishery	5 villages	Regularly	People's need	1,000
9.	Plant mangrove	Bek Krang village	2 courses	People's awareness is still limited	6,000
10.	Control mangroves	Bek Krang village (20ha)	Regularly	Adapt to climate change	1,000
11.	Disseminate fisheries and forestry law	Bek Krang village	5 courses	Adapt to climate change	2,000
12.	Install posters	5 villages	3 posters	Adapt to climate change	600
13.	Educate environmental awareness and law	Bek Krang village	5 courses	Adapt to climate change	2,000

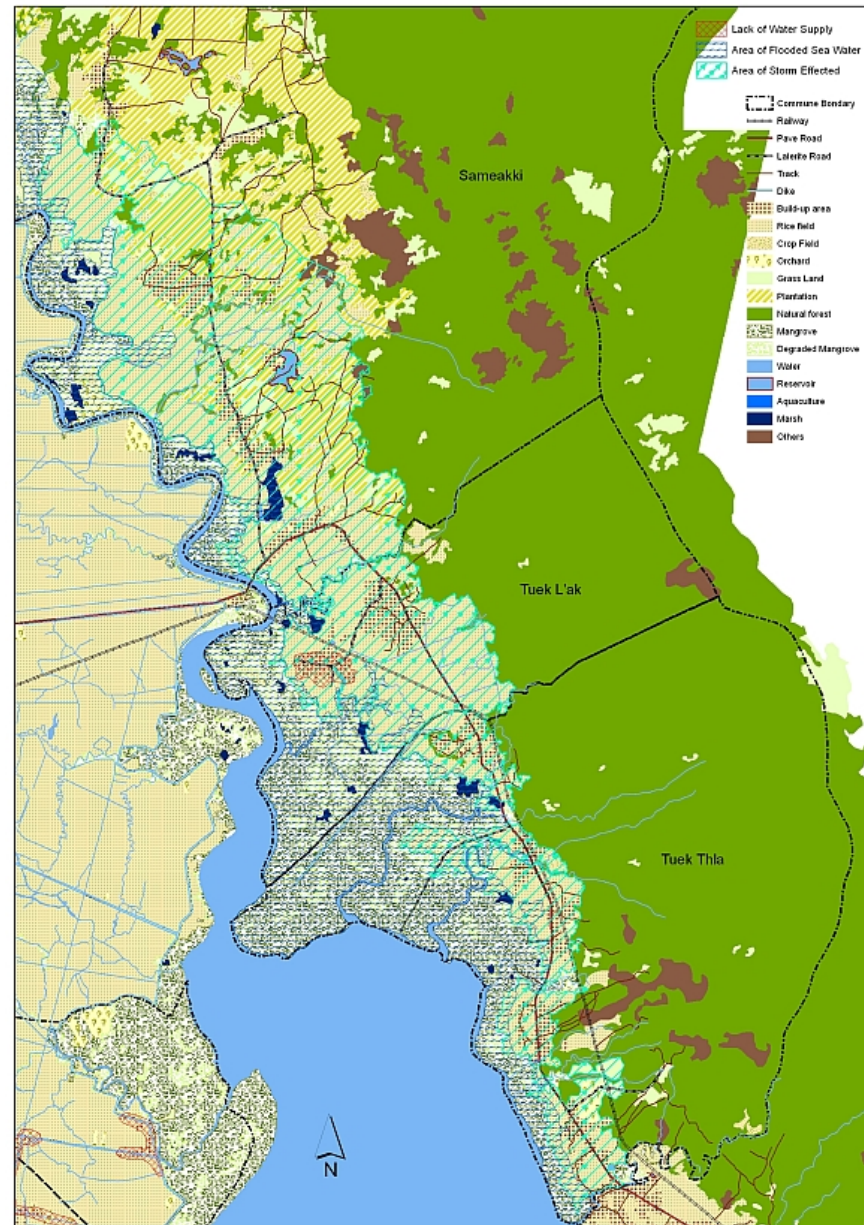
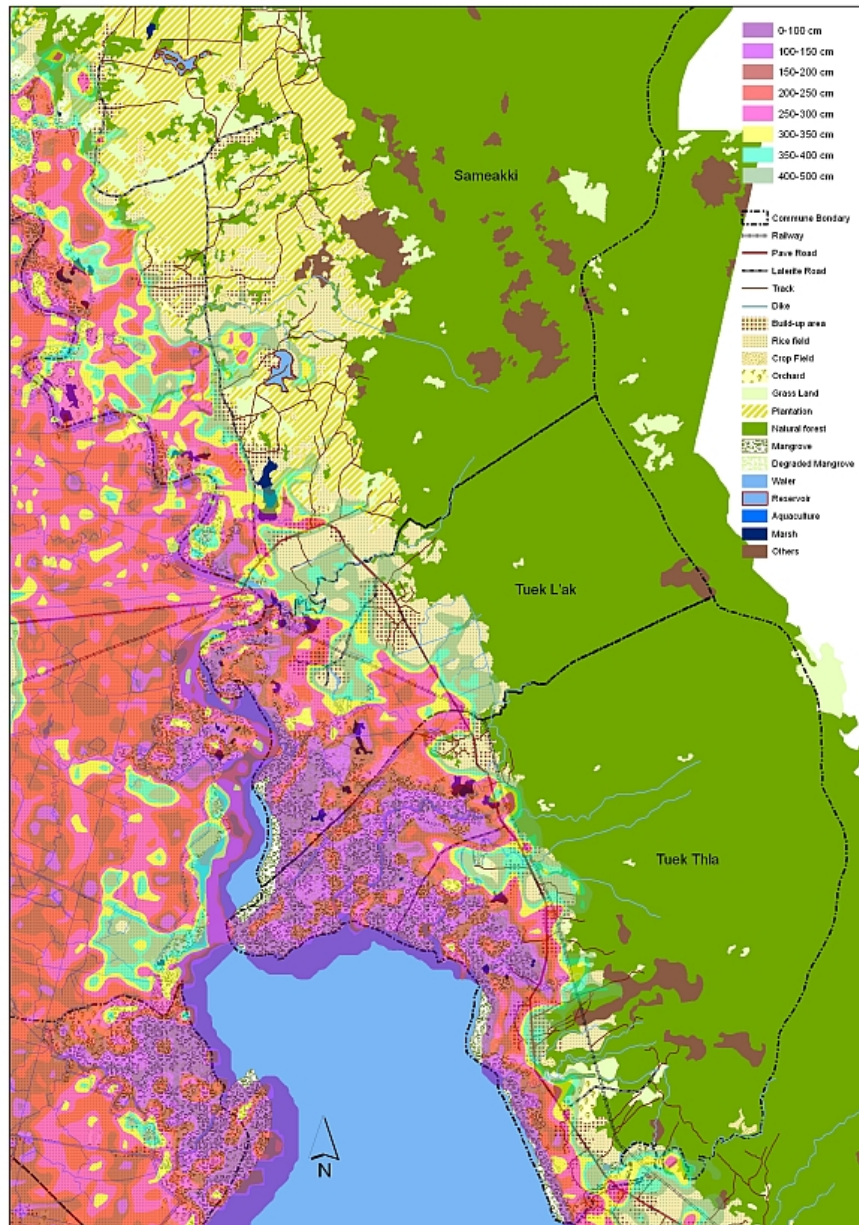
Outputs from Training Programme: Integrating Climate Change Considerations into CDP

Ou Oknhaheng

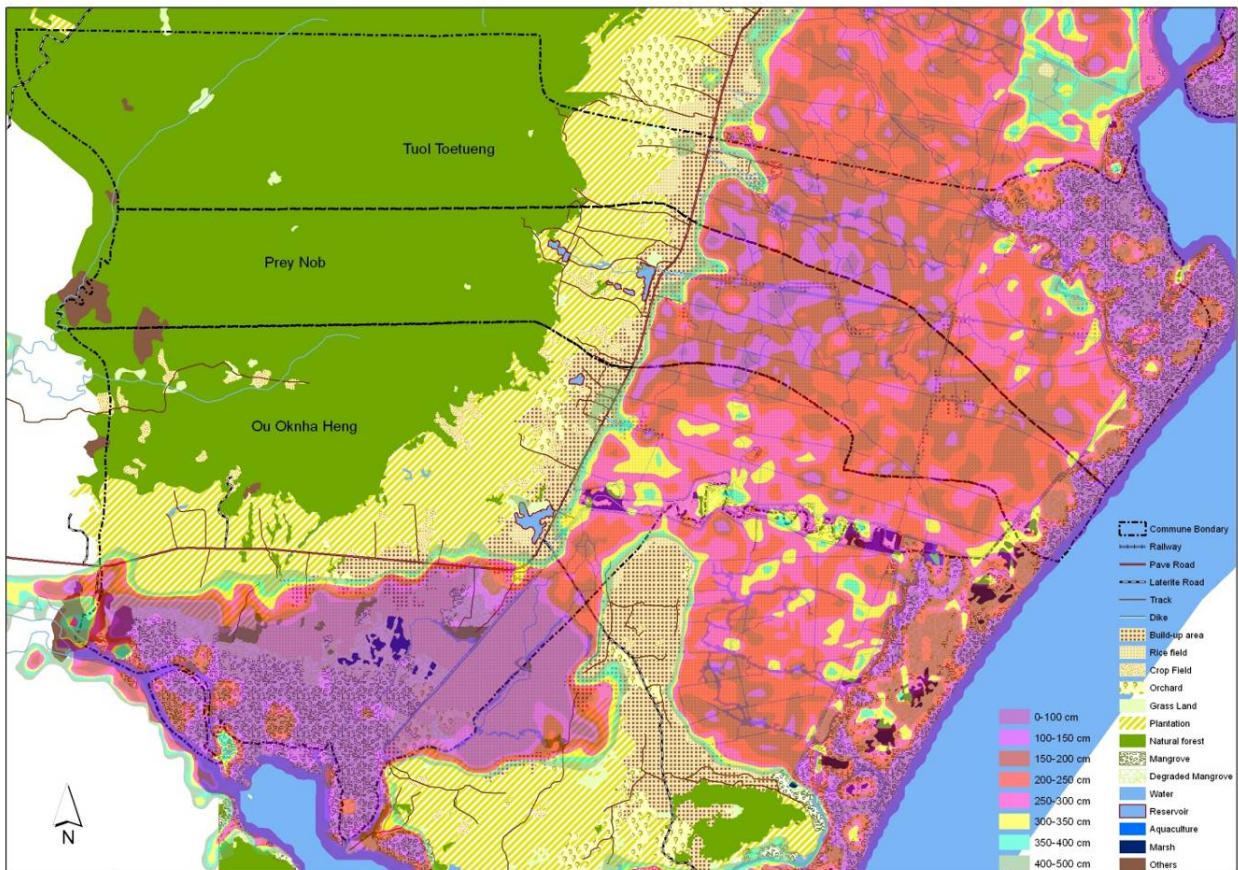
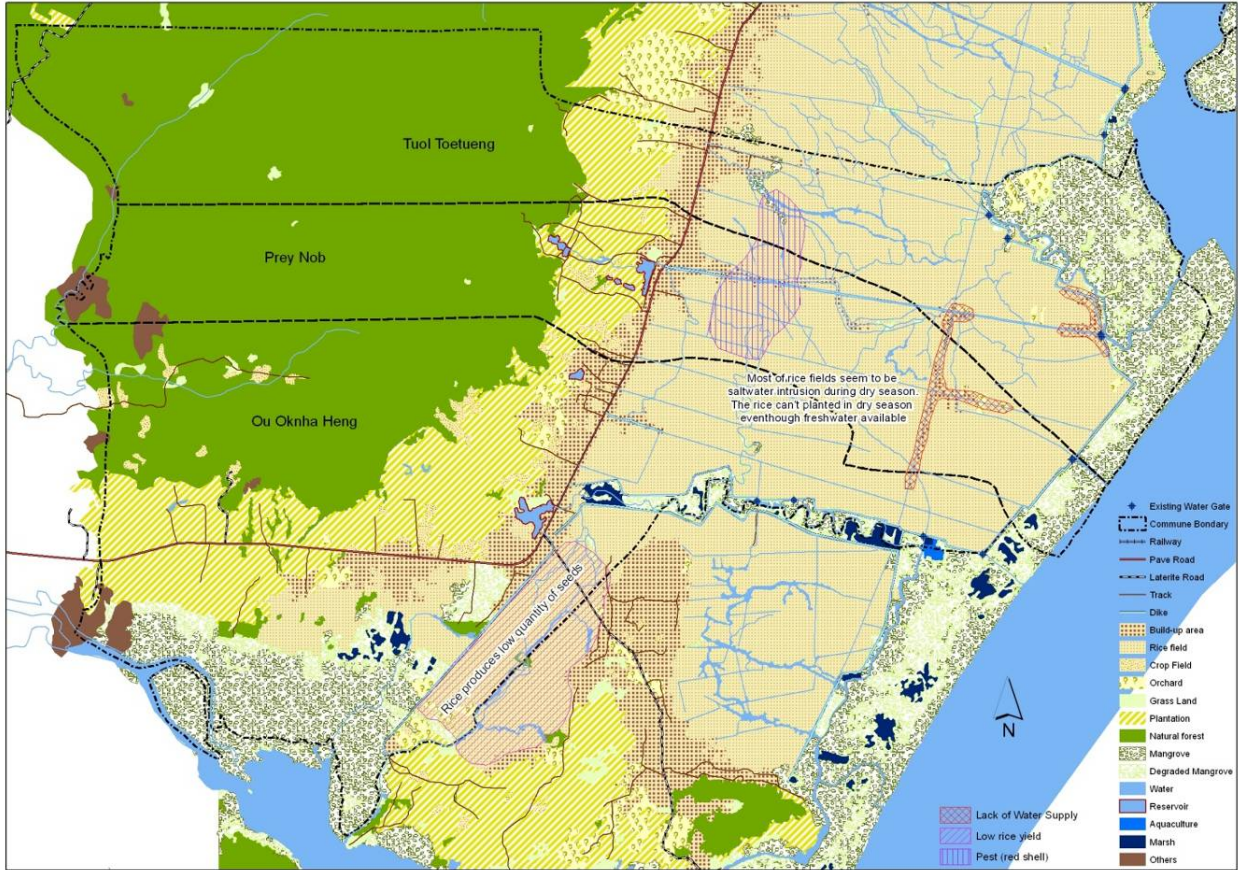
No	Project Title	Location	Description	Why is it needed?	Estimated Cost (\$)
1.	Train on rice cropping technology	All village (5 villages)	People's awareness is still limited	Yield of 6 tons/ ha	1,500
2.	Vaccinate livestock	All village (5 villages)	Animal get sick	Adapt to CC	700
3.	Rehabilitate tertiary canal	O Tapang	Canals get shallow	Climate change	15,000
4.	Multiple agriculture	O Chamnar	People's awareness is still limited	Climate change	1,500
5.	Water storage/reservoir	Bot Koki	Reservoirs get shallow	Climate change	20,000
6.	Construct and connect clean water pipe	5 villages	Lack of clean water	Climate change	10,000
7.	Disseminate information on climate change	Bot Koki	People are aware of climate change	Climate change	1,000
8.	Strengthen community fishery	Cham Pear coast	People are aware of community by-law	Climate change	1,000
9.	Plant mangrove	5 villages	Protect salt water intrusion and fish habitat	Climate change	5,000
10.	Control mangroves	Bot Koki	Protect mangrove destruction	Climate change	2,500
11.	Disseminate fisheries and forestry law	5 villages	People are aware of forestry law	Climate change	1,500
12.	Install posters	5 villages	People are aware of prohibition areas	Climate change	2,000
13.	Educate environmental awareness and law	5 villages	People are aware of environmental law	Climate change	1,000

Outputs from Training Programme: Integrating Climate Change Considerations into CDP

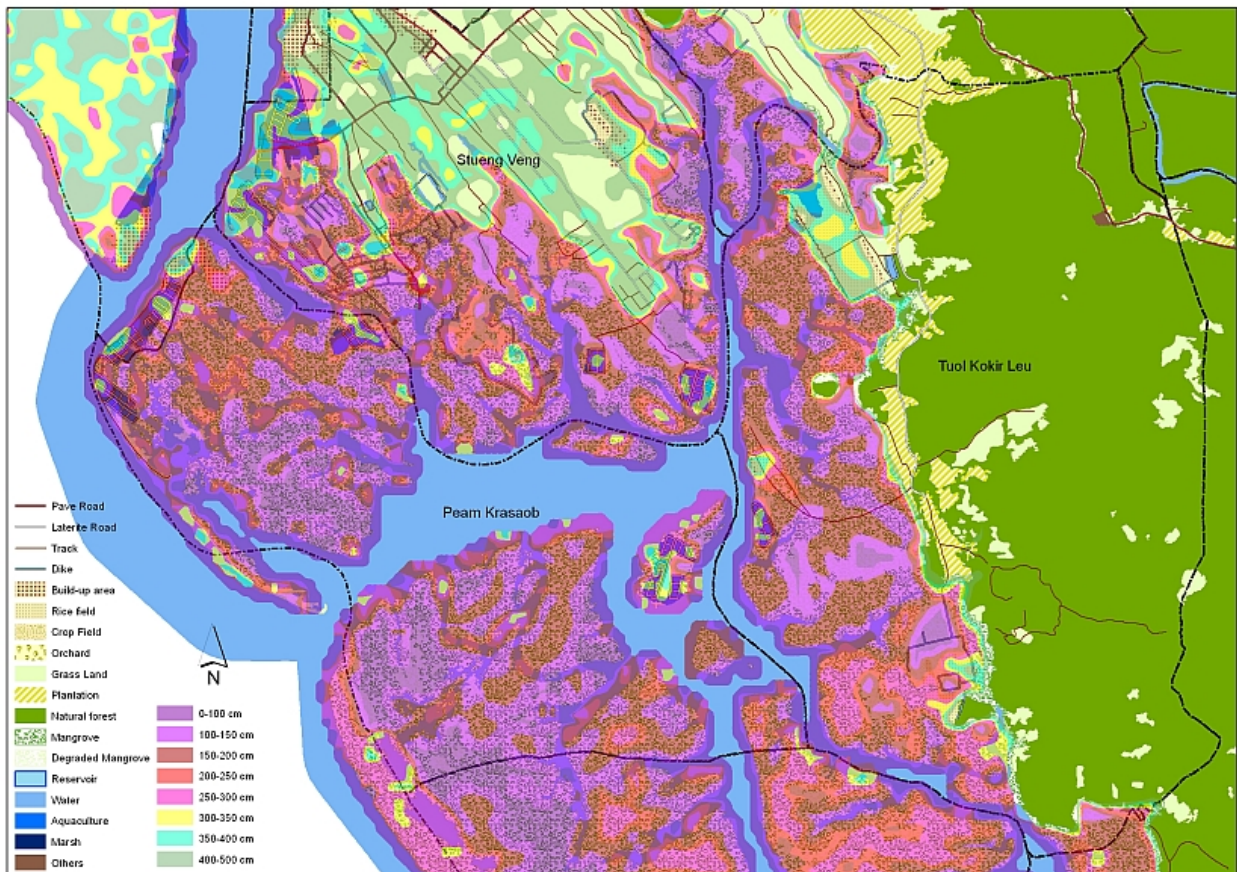
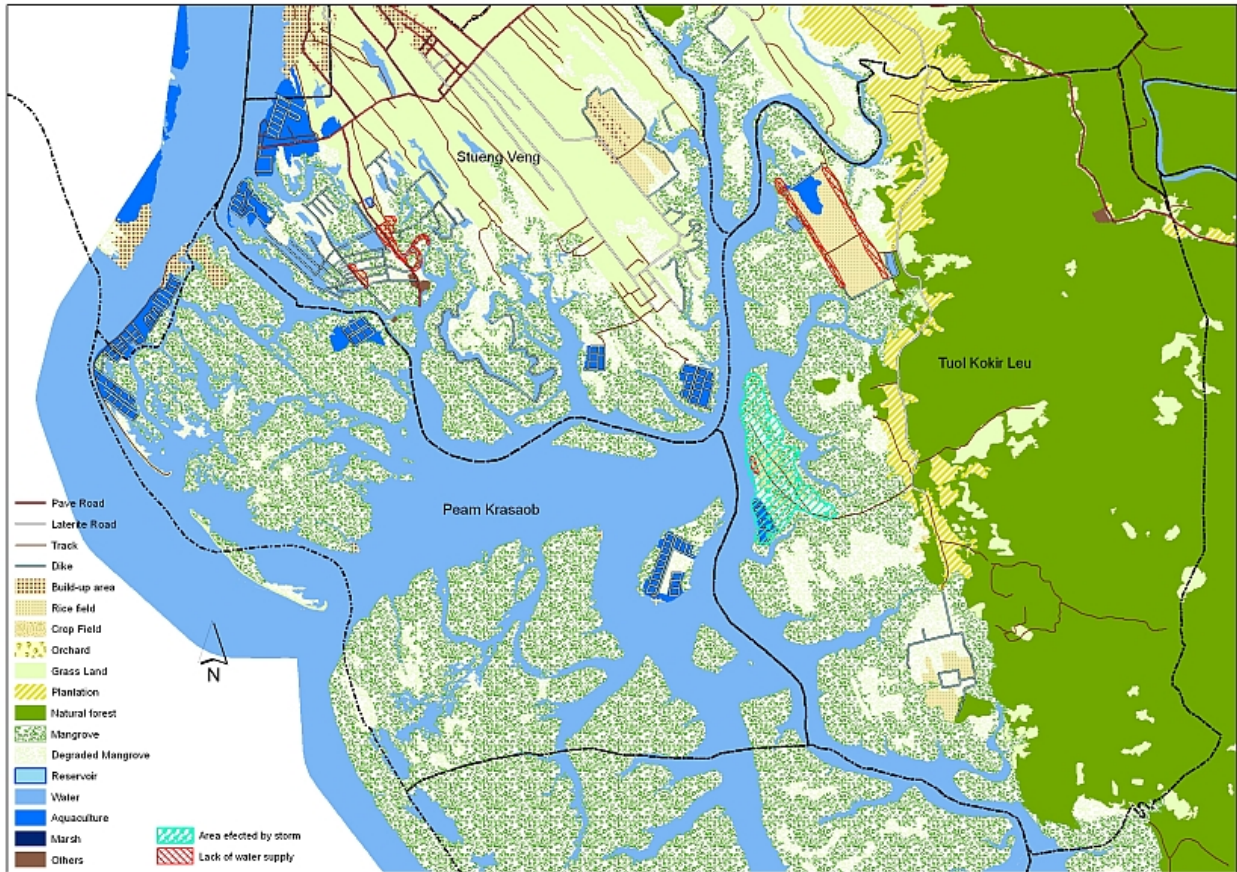
Prey Nob Commune (North East) Issues and Topography



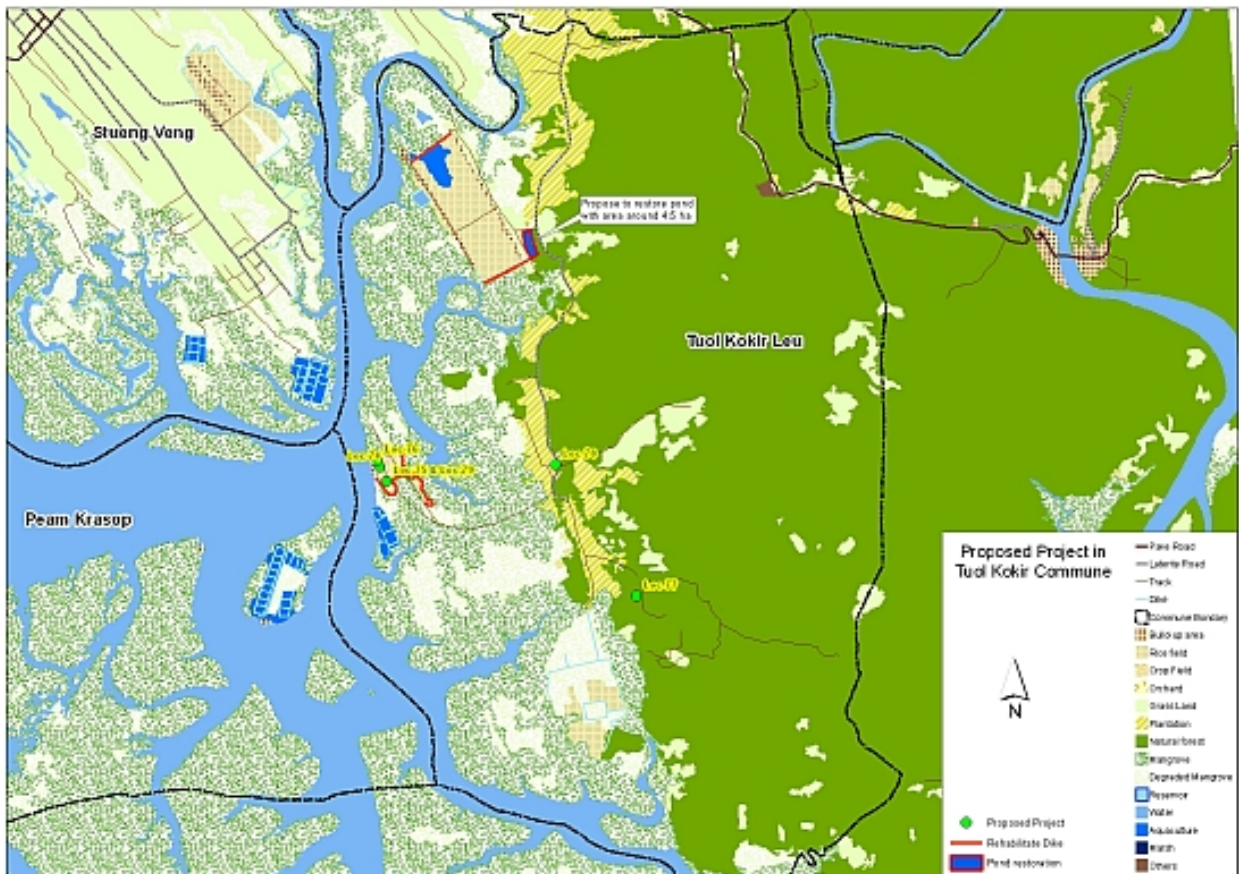
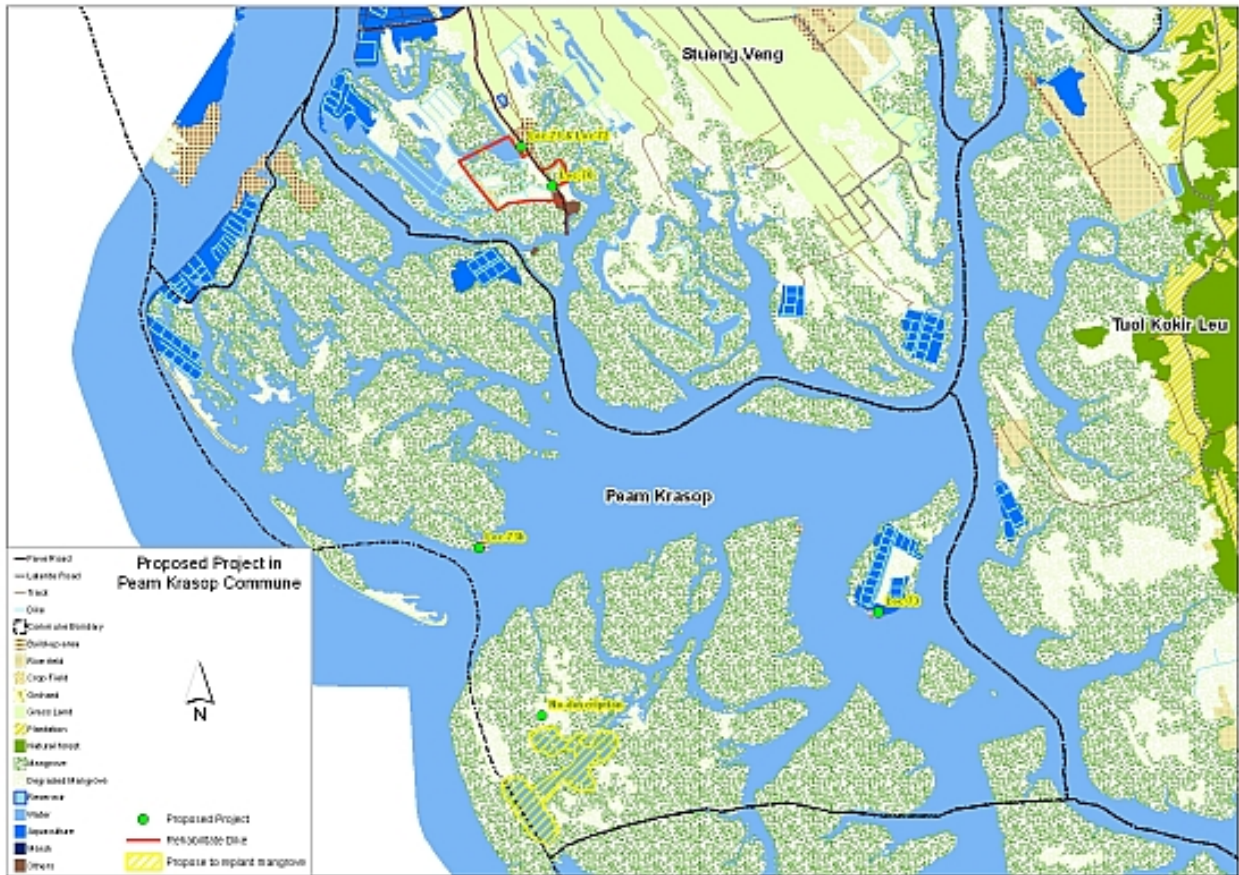
Prey Nob Commune (South West) Issues and Topography



Mondol Seima: Issues and Topography



Proposed Projects: Peam Krasop and Tuol Kokir Communes



Proposed Projects: Prey Nob (South West and North East)

