

Evaluation Report

Civic Engagement for Climate Change Adaptation Project

Preliminary Findings 9 Nov 2012

OUTLINE

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Abbreviations and Acronyms

ART Advanced Research Consultant Team

ASEAN Association of South-East Asian Nations

CBOs Community-Based Organizations

CC Commune Council

CCA Common Country Assessment

CDB Commune Database

CDHS Cambodia Demographic and Health Survey

CDP Commune Development Plan

CIP Commune Investment Plan

CMDG Cambodian Millennium Development Goal

CSES Cambodia Socio-Economic Survey

GDP Gross Domestic Product

JMP Joint Measurement Programme

MoE Ministry of Environment

MoP Ministry of Planning

NGOs Non Governmental Organization

NSDP National Strategic Development Plan

PDP People Center for Development and Peace

UNDP United Nation Development Program

UNICEF United Nation Children Fund

WDI World Development Index

WHO World Health Organization

Acknowledgements

This report provides findings; recommendations and conclusion of the evaluation of project, 'Civic Engagement for Climate Change Adaptation'. On behalf of the People Center for Development and Peace (PDP), I would like to thank everybody who contributed to this evaluation. This report would be not possible without the time, attention and wisdom shared by all these individuals and organizations, and we are grateful for their contributions.

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Finally we are grateful to the consultant team for conducting this evaluation in participatory manner and writing whole report. The evaluation was conducted by Advance Research Consultant Team (ART) led by Kem Ley and Nhim Dalen.

Executive Summary

I. Country Context

Cambodia named new face, new democracy and human rights, new socio-economic growth and development through psycho, educational, social, political and cultural adaptation and regional & global integration. Key Macroeconomic Development Indicators (Source: Cambodia Overlook Conference, Feb 2012);

Development Indicators	2009	2010	2011	2012
GDP Nominal (M\$)	10,400	11,634	12,937	14,231
Real GDP Growth (%)	0.1	6.0	6.9	6.5
GDP per Capita (\$)	753	830	909	984
Inflation Rate	-0.6	4.0	5.5	5.0

Analysis of underline causes reveals that further progress in achieving CMDG1-Poverty Reduction (Off Track) is constrained by a number of interrelated factors.

- Duty Bearers (low staff motivation, budget limitations, leakage of resources, patronage relationships and the absence of mechanisms for participation and accountability).
- Rights Holders (Fear of participation, low awareness and capacity of rights holders, lack of cohesion, Low trust in public institution, history trauma and low demand of rights holders etc.
- Limited productive employment opportunities and decent work due to an unskilled workforce.
- Poor investment climate and technical barriers to trade and the depletion of natural resources and landlessness
- The absence of an effective safety net that would allow the poor to take risks in improving their productivity.

Areas of Poverty Status	Measurable Indicators	Status
Under Poverty Line	Poverty Rate-Cambodia	26.1% (CMDG 2011)
	Food Poverty Rate	15.2% (CMDG2011)
	Under PPP 1.25US\$	25.8% ASEAN Stat.2011
	Under PPP 2US\$	57.8%, ASEAN Stat.2011
Wealth Ranking	Poorer & Poorest-Urban	7%, CDHS 2010
	Poorer & Poorest-Rural	51.2%, CDHS2010
	Total Urban & Rural	38.9%, CDHS 2010
Gini Coefficient	Inequality	35.6%, CMDG2011
Malnutrition-Child Under 5	Anemia	55% (CDHS 2010)
	Stunted	40% (CDHS 2010)
	Underweight	28% (CDHS 2010)
	Wasted	11% (CDHS 2010)
Child Labor	Child involved in economic Activities	45% or 1.5m (CSES 2009)
	Child Labor	16.72%, CMDG 2010

II. Context of Climate Change

Cambodia has long experienced in high level of growth during Kingdom of Cambodia I (1950s-1960s) and II after first National Election in 1993. However, a series of internal and external shocks such as the global economic crisis, rising food and fuel prices, the threats of climate change, democracy with alternative and high prevalence of incidence of human rights violation, imbalance between legislative body, judicial Body and executive body have had significant indirect and potentially long-term effects and suggest that it is unlikely that Cambodia will achieve all its CMDG targets especially Goal 1-Eradication of poverty and hunger and Goal 7-Environmental Sustainability.

Cambodia has huge endowments of natural resources such as deforestation, natural disasters (drought & flood) unfertile land, land degradation, land grabbing, uncontrolled mineral, gas exploitation, water pollution, climatic conditions which represents potential comparative advantages for agriculture. 81% of the population living in the rural areas, and over 60% of the population directly or indirectly depends on income generated in agriculture, forestry, fisheries and agriculture.

Statistics of Cambodia Environmental Issues

Descriptions	Status	Sources
Proportion of people having security of land tenure ¹	28% (Goal: 65%)	CMDG2011
Forest Cover (70% in 1960s)	57.59% ²	CMDG2011
Average lost of Forest (142,500 ha)	1.1%	CMDG20113
Protect Area-PA4 (3.1 M ha) - 27% of total Land Area)	23	CMDG2011 ⁵
Economic Land Concession given on PA	350,000	CMDG2011
Social Land Concession for Citizens (Target 29,176)	17,176 Families	NSDPMRT, 2011
% of HHs depends on firewood & charcoal	90% (Goal: 52%)	CDHS 2010
Fishing lots were completely released in 2012	953,740 Ha	CMDG2011
Community Fisheries registered (683,734 ha.)	469 (Target 470)	CMDG2011
Community Fish Refuges covering 1,170 ha,	390	CMDG2011
Fish sanctuaries covering 46,618 ha	335	CMDG2011
Population having access to improved sanitation	84% (Rural: 26%)	CMDG2011
Population having access to safe water	76% (Rural: 44%)	CMDG 2011
CO2 Emissions (Kt)	4,602	WDI 2008
CO2 Emissions (metrics tons per capita)	0.3%	WDI 2008

¹ Total title farmland registered: 2,370,493

² National Forest Cover Assessment in 2006

³ UNFCCC, Kyoto Protocol

^{4 1925,} Cambodia became the first country in South East Asia to establish Protected Area of Forest

⁵ Total Land Area: 11,481,480

Analysis of Climate Change⁶

In-depth Analysis, based on CMDG 2011 indicated that Cambodia forest cover is 57.59% but 3,936,481 hectares (2,036,170 ha of Economic land concessions, 1,900,311 ha, mining concessions) have been granted as mining & economic land concessions, covering 22 % of Cambodia's surface area, which totals 17,650, 931 ha, (CIA World Fact Book 2011) Anyway, there is no nationwide study in last five year (2006-2012).

Climate Change will lead to higher temperatures, changes in precipitation patterns, rising sea levels and distribution and frequency of weather-related disasters, posing risks for already vulnerable agriculture, food, and water supplies. Climatic events such as floods (Extreme flood in 2011) and droughts are already recognized as one of the main contributors to poverty. Floods accounted for 70 percent of production losses of rice - the single major agricultural crop of the country as indicated in the last two decades. **Drought** accounted for 20 percent of losses. Ground and surface water supply becomes more volatile in volume, quality and distribution with the change in seasons. **Ecosystems** in the Cambodian forests are likely to be significantly altered. Cambodia's forests are presently composed of dry forests (60 percent), wet forests (20 percent) and moist forests (20 percent).

Changes in soil water availability caused by increasing temperature and changing rainfall patterns will also impact on forest composition and biomass production. The combination of high poverty levels and great dependence on agriculture are the main mechanisms attributed to the country's extreme vulnerability to climatic events. Cambodia's fisheries are also highly vulnerable to climatic variations. 7 The Tonle Sap fishery alone accounts for a significant 7 percent of GDP and as a sector contributes between 9 and 12 percent of GDP and substantially to incomes, jobs and food security.

Climate change increases the incidents of infectious, water-borne and vector-borne diseases, heat stress and mortality and will raise public health costs. The main form of energy for most households is wood and wood charcoal accounting for approximately 80 percent of total national energy consumption. This dependence on wood is a major driver for deforestation and contributes to a low level of household energy security.

Based on BBC-WST survey (2,401 Sample Size in 24 Provinces) in 2011, supported by UNDP, DANIDA and Oxfam indicated that 67% of survey respondents think deforestation within Cambodia causes the weather patterns to change; Deforestation is also a concern for key informants, for whom trees are understood to play a role in bringing rain, maintaining groundwater supplies, and protecting people and property from storms and flooding.

⁶ CCA 2009, UNDP

⁷ Johnston, R. et al. Scoping Study on Natural resources and Climate Change in Southeast Asia with a Focus on Agriculture, International Water Management Institute South East Asia, May 2009.

III. Organizational Background-PDP

IV. Project's Background

Overall Goal	The overall goal of the project is rights of community people (men, women and youth) relates adaptation to climate change and the capacity of the organization staffs on this field has improved by the end of 2015 as results of knowledge gain from the trainings and the participation in local good governance as well as advocacy.		
Objectives	Objective1. There is an increase of knowledge of community people and of the PDP-Center's staffs (men, women and youth) relates to climate change and its adaptation by the end of 2012 through mainstreaming into the project of Better Democracy for Community Development. Objective2. Community network has capacity to voice out to demand the local government in order to response to their needs to adapt to the impacts of climate change by the end of 2012 through their advocacy activities.		
Strategies	Mainstream climate change and its adaption in to project of better democracy for community development Building capacity of community network to voice their concerns Response adapt to impact of climate change within their community		
Location	Samroung Year Village, Samrong Year Commune , Pork District, Seim Reap, Cambodia		
Beneficiaries	 Cambodia Youth in village Members of local democratic Mechanisms including disaster Committee General Population in villages 		
Project Partners	 District, Commune Councils Members of Disaster Committee Members of Commune Committee for Women and Children Members of Former Association Relevant NGOs and CBOs working in catchment areas Students who are learning informal and formal school 		
Measurable Indicators	Outcome and Impact Indicators • % of respondent who have experienced at least one of extreme weather in the past year. • % of respondent who received information on extreme weather before the event.		

- % of respondent who have heard the term "Climate Change".
- % of respondent who have heard the term "Climate Change" via PDP activities.
- % of respondent who aware the at least two causes of changing weather (deforestation, Pollution by industries, Using care/vehicle & Using fossil fuels).
- % of respondent who thought that climate change affects Cambodia now.
- % of respondent who thought that climate change effect on poverty.
- % of respondent who experienced difficult to work due to climate changes.
- % of respondent who agreed that they are able to respond to the changing weather.
- % of respondent who agreed that the community people can respond to the changing weather.
- % of respondent experienced done anything to respond to the changing weather.
- % of respondent who agreed that they can find information they need to responds to the changing weather.
- % of respondent who said that lack of knowledge on climate change is the barriers to taking action to respond to the impact of changing weather.
- % of respondent who ever participated in monthly commune meeting.
- % of respondent who ever raised any concern on climate change in their community.
- % of respondent who ever shared any information/knowledge about climate change to others.
- % of respondent using improved sources of drinking water
- % of respondent using improved toilet/latrine facility
- % of respondent using firewood and charcoal
- % of respondent whose household have had bio-digester/gas

V. Evaluation Objectives

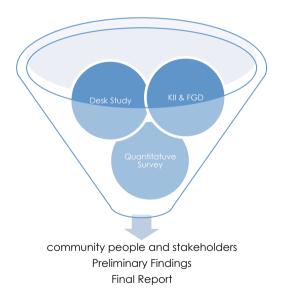
The objective of Evaluation is to measure the achievements of the project against its objectives, effectiveness (Outcomes and Impact) and then make recommendations for continuation of climate change Project.

The specific objectives of the Evaluation are:

- To assess the awareness of target population on climate change and climate change adaptation
- Assess the level of attitudes, behaviors and practices change on climate change
- To assess the level of community participation in local climate change coordination mechanisms and local climate change responses
- To Assess the Achievements of project against its objectives and effectiveness of projects (outcomes and impacts)
- To make feasible recommendations for effective project implementations

VI. Evaluation Methodologies

The project evaluation methodologies will employ both qualitative (Desk Study, Key Informant Interview and focus group discussions) and quantitative approaches (Individual interview). The primary aim of both these approaches will be to elicit information from communities on the Program's achievement against its expected results and outcomes. The following methodology will use to evaluate the Climate Change Project in SRP, Pork District;



1) Population Study

The study followed the United Nations global definition and National Definition of Cambodia Health Demographic Survey which defines adult population as aged 15 to 49 years.

Globally Adult Population or International and Standardized Study Population age between 15-49 are understood as adult practicing knowledge, attitudes, behaviors and practices which expose them to impact of climate change and adaption of climate change.

Natural Resource and Environment (NRE)

Families involved with NRE issues, Pork District (included Samroung Year)

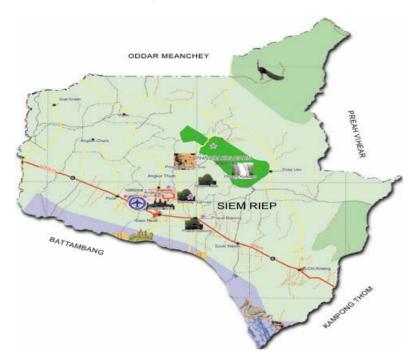
Description	2008	2009		2010
·	%	%	%	Number
Families living with forest by product collection	0.00%	0.01%	0.01%	2 families
Families living in protected area	14.13%	13.26%	14.89%	3,567 families
Families access to garbage collection service	0.30%	0.46%	0.63%	150 families
Families who effected by environmental pollution	0.00%	0.01%	0.21%	51 families
Families using chemical fertilizer	58.41%	54.15%	59.82%	14,335 families
Families using chemical pesticide	17.89%	19.25%	21.69%	5,197 families

Source: CDB 2010, www.db.ncdd.gov.kh

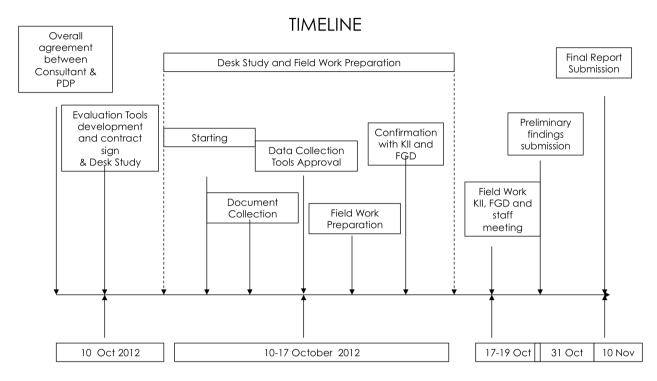
Key Informant Interview	Focus Group Discussions	Survey Participants- Quantitative Survey
1. Teachers	1. Community Youth	1. 165 Sample Size and Comparison Village
2. Village Chief	General Population or Farmers	Companion village
3. Police Post	Tameis	
4. Commune Councils		

2) Study's Location

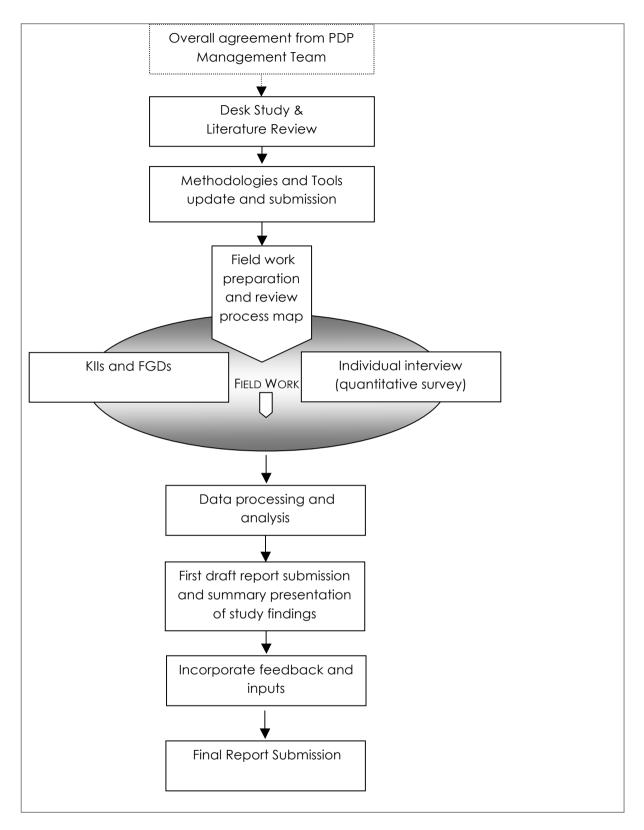
Purposive selection of surveyed village as intervention village out of eleven villages in Pork District, Seim Reap Province called Samrong Year Village was purposively identified as priority site for the study based on the criteria shown in Map.



3) Evaluation Timeline



4) Evaluation Framework



5) Desk Study

Desk review of project documents were conducted such as concept note, Metrics, relevant National Research Findings, report of community's feedback analysis, reports of monitoring, monthly progress report, quarterly, semester and annual progress reports as well as project routine program monitoring report etc. Others relevant documents from other surveys were used for discussions and comparisons analysis. See list of document in the Annex B.

6) Key Informant Interview

Informal interviews were conducted with project staff of PDP Programs, relevant stakeholders such as Commune Councils, Police Post, Teachers, Village Chiefs, and other local stakeholders to get information and their perception of their work and response to peoples' problems that reflect to the project achievement against its expected results and outcomes. Other key informants were discussed with project staff.

Most interviews took approximately 15-20 minutes and conducted in Khmer. A team of two interviewers conducted the interview: one to lead the interview questions and one to take detailed notes of the conversation (Questions and Guide for KII and Evaluation to in annex C).

7) Focus Group Discussions

Focus group discussions were conducted among community people in the study location through participatory discussion and selection with project staff. In total, proposed 2 focus group discussions include women and men group in randomly selected village. A team of two people from the consultant team conducted the FGDs: one to lead the facilitation and one take detailed notes of the discussion (Questions and Guide for FGD and see it in the evaluation tool in annex C).

8) Sample Size Calculation and Sampling Strategy

The study design in the survey was cross sectional. The total sample size was calculated using statistics formulae (Yamane, 1960). $n = N/(1+N^*e^2)$ Where, n: sample size (respondent), N: total population of the target group, e: precision (5 percent) and at 95 percent confidential interval. According to above formula the sample size for the survey is 200.

A single-stage sampling method was used in this survey. Primary sampling units (PSU) were chosen at the stage of sample selection and individual respondents were chosen from within each of the selected PSUs at the single stage.

9) Data Cleaning, entry, processing and Analyzing

Team leader and member of the consultant team did cross-check all the survey questionnaires to ensure completeness and accuracy. The data entry frames designed in an SPSS package (version 18). Double data entries were used to minimize errors. The data were analysed and participatory discussed, following the objectives of the survey, using SPSS. Data analysis focused on descriptive analysis for all outcome measures for the different indicators and comparisons with baseline survey, progress update, national and program/project statistics. Proportions computed to determine the status of each indicator and statistical tests (chi-square) were applied to assess whether the differences were significant at the 5% level. A statistical analysis of the secondary data extracted from various report (operational data, Monitoring data) was done and compared with the output indicators.

10) Data Enumerators Training and Field work

The evaluation data collection team were well trained and selected from University students who had studied survey methodology. The data collection team received extensive hands-on training for several times. However, additional and refreshers training were added in covering all necessary components such as the objectives of the training workshop, (1) provide basic information about the project, (2) explain the goals and methods of baseline survey, (3) develop the team's interviewing skills, (4) ensure proficient use of the questionnaire, and (5) ensure compliance with ethical guidelines (topics of ethics of researchers: Consensus building, Informed Consent, Confidentiality, and Conflict of Interests).

The data collection team was divided into three teams (Team A, B, and C) led by a team leader from the consultant team. Each Team Leader checked all questionnaires before leaving the sites. Simple field reporting forms were provided to assist the team in managing data in the field. Members of the consultant team conducted randomly spot checks and observation of at least 20% of all field works to ensure data quality.

For increased validity and to assure respondents' privacy, it was important that the interviews for the survey are conducted in a manner that was comfortable for respondents and those respondents are able to speak openly and honestly. Each respondent have the right to decline the interview, or to refuse to answer specific survey questions. The interviewers respect this right and are verbally obtain orally informed consent before conducting the interviews.

On average, survey interviews were last approximately 20-25 minutes. It is estimated that each interviewer would be able to collect information from 12 respondents each day.

11) Survey Instruments

A highly structured survey questionnaire were developed and used for both male and female respondents. The questionnaire were developed by the evaluation team and modified based on feedback from PDP management team. Overall, all the instruments e.g., the questionnaire for KII, FGD and Survey's participants, related guidelines were both in English and Khmer. The questionnaire survey includes all necessary topics including demographic characteristics (Please see Evaluation Tool in Annex B.).

12) Ethical consideration

The study was reviewed and approved by the PDP Management team. Verbal consent was sought from the study participants before the start of the interview or discussion. Interviewers signed the consent form to confirm that the study participants had been briefed about the study, assured of their confidentiality, and had given their informed consent to participate in the study. During the research analysis and report writing all study data was kept in a locked file cabinet which only the principal investigators had access to. Study data was analyzed by the principal investigators (Pls) and stored on the study computer with password.

13) Preliminary Findings Consultation Meeting

Based on the TOR and evaluation of the results, first draft of the evaluation report was prepared and submitted to management team and findings was presented in workshop with the Management Team to seek comment on evaluation findings, conclusion and recommendation.

Based on comment received final evaluation was submitted to Management Team. Online feedback from PDP Program/Project staff was widely opened in accordance with PDP's rules.

- Preliminary Findings Consultation meeting
- Second Draft of Evaluation after staff consultation and incorporating inputs and feedback
- Third Draft of Evaluation after incorporating feedback and inputs
- Final Report of Evaluation after receiving all feedback and inputs from PDP

14) Limitations

The reader should note the following when interpreting some of the findings. The populations targeted in the study are adult population aged between 15-49 in single village called Samrong Year; therefore, they do not represent the whole population in Pork District as a whole. Total sample size is 200 but survey team met only 165. However, data enumerators tried their best to meet and reach surveyed population but could not.

VII. Evaluation Findings

Throughout the whole findings and this section, percentages in the tables, graphs, charts and narrative of the quantitative findings reflect weighted percentages.

Table 1. Demographic Characteristic and Household Income Statement

Demographic Characteristic			
	Male (n=48)	Female (n=117)	All (n=165)
Age			
Age between 18-30	43.8	36.8	38.8
Age over 30	56.3	63.2	61.2
Education			
Never study	8.3	10.3	9.7
Primary School	22.9	35.9	32.1
Secondary sc-Lower Secondary School-Grade 7-9	27.1	31.6	30.3
High school-Upper Secondary School-Grade 10-12	41.7	22.2	27.9
Marital status			
Single	31.3	16.2	20.6
Married	68.8	74.4	72.7
Widowed/divorced	0	9.4	6.7
Occupation			
Unemployment	0	6.8	4.8
Student	16.7	6.8	9.7
Employees	16.7	8.5	10.9
Self-employed/agriculture	66.7	77.8	74.5
	Mean		
Number of member in household	5		
Household Income Statement	Riel	USD	
Income	574,315	143.6	

Expend	457,567	114.4	
Saving	78,801	19.7	

Table 2. Perception on Extreme Weather Events

	SRY	AMPIL	All
	(n=91)	(n=74)	(n=165)
Experienced extreme weather events	%	%	%
No such events happened			0.6
Very cold temperature	12.1	2.7	7.9
Drought	14.3	6.8	10.9
Storm, Cyclone	16.5	13.5	15.2
Very high temperature	19.8	17.6	18.8
Very heavy rain	48.4	47.3	47.9
Pest on agricultural production	49.5	56.8	52.7
Flood	94.5	95.9	95.2
Most serious impact events			
Very high temperature	2.2	1.4	1.8
Drought	2.2	1.4	1.8
Very heavy rain	2.2	2.7	2.4
Pest on agricultural production	16.5	18.9	17.6
Flood	76.9	75.7	76.4
Received any information about the events mentioned	53.8	57.5	55.5
Time of received information			All
Before events	70.8	78.6	74.4
During events	25	19	22.2
After events	4.2	2.4	3.3
Mean of getting information			
TV	79.2	76.2	77.8
Radio	77.1	69	73.3
Neighbor/relative/friend	31.3	23.8	27.8
Authorities	10.4	7.1	8.9
PDP activities	6.3	4.8	5.6
Other	4.2	4.8	4.4
Benefit of information received			
Buy pesticide	4.1	2.4	3.3
Help other to prepare for events	10.2	0	5.5
Plant more trees	6.1	7.1	6.6
Store water	12.2	0	6.6
Construct irrigation system	8.2	4.8	6.6
Other	8.2	7.1	7.7
Move to place of safety	24.5	14.3	19.8
Healthcare	18.4	35.7	26.4
Prepare materials	67.3	69	68.1
Prepare sufficient food	71.4	81	75.8

Table 3. Knowledge on Climate Change

Samroung Yea	Ampil	
Village	Village	All
%	%	%

Heard the term "Climate Change"	72.5	63.5	68.5
Mean of accessing the term "Climate Change"	Samroung Yea Village	Ampil Village	All
TV	65.2	53.2	60.2
Radio	59.1	48.9	54.9
Neighbor/relative/friend	34.8	23.4	30.1
Newspapers	1.5	2.1	1.8
Authorities	45	8.5	6.2
PDP activities	13.6	6.4	10.6
Other	12.1	27.7	18.6
	Samroung Yea	Ampil	
The cause of climate change in Cambodia	Village	Village	All
Deforestation in Cambodia	83.3	87.2	85
Pollution by industry	45.5	57.4	50.4
Driving car/other vehicles	40.9	21.3	32.7
Using fossil fuels	24.2	29.8	26.5
Nature	10.3	23.4	15.9
Other	7.6	21.3	13.3
Don't know	7.6	8.5	8
Level of agreement to the statement that human activ	ities are causing wed	ather patterns	around
the world change over time.	0.5.		.
Agree	95.3	93.5	84.5
Neutral	3.1	4.3	3.6
Disagree	1.6	2.2	1.8

Table 4. Knowledge on Impact, Adaptation and Levels of Response

	Samroung Yea Village %	Ampil Village %	All %
% of people who think that climate change affects	70	/0	70
Cambodia in the future	92.4	93.6	92.9
% of people who think that climate change affects			
Cambodia now	100	100	100
Impact of climate change in Cambodia			
Other	6.6	13.6	9.5
Water shortages	14.8	9.1	12.4
Poverty	24.6	15.9	21
Increasing temperature	24.6	38.6	30.5
Drought	36.1	34.1	35.2
Increasing flood	54.1	68.2	60
Harder to farm	73.8	63.6	69.5
Health	75.4	84.1	79
Consequences of climate change for respondent and their fo	amily		
Nothing difficult	4.9	2.3	3.8
More expense	3.3	0	1.9
Other	4.9	4.5	4.8
Difficult to work	34.4	31.8	33.3
Reduce agriculture products	39.3	27.3	34.3
Less income	39.3	54.5	45.7
Difficult to travel	44.3	50	46.7
Have a lot of diseases	67.2	54.5	61.9
Difficult to farm	75.4	70.5	73.3
Level of agreement that respondent are able to respond to a			
Agree	66.2	60	63.6
Neutral	21.5	31.1	25.5
Disagree	12.3	8.9	10.9
Level of agreement that community people are able to resp		_	
Agree	57.1	53.5	55.7
Neutral	30.2	37.2	33
Disagree	12.7	9.3	11.3
Action that people can do in response to climate change			
Nothing	5.5	2.6	4.3
Move away from one area to another	5.5	5.1	5.3
Other	9.1	17.9	12.8
Get A/C or fan	21.8	10.3	17
Keep cool by bathing often	25.5	20.5	23.4
New agriculture techniques	18.2	30.8	23.4
Irrigation canals	36.4	30.8	34
Plant trees	87.3	74.4	81.9
% of respondent who had done any activity in respond			
climate change	71.2	57.4	65.6
Action taken by respondent in response to climate change			
Nothing	4.3	0	2.7

Move away from one area to another	10.6	0	6.8
Other	8.5	3.7	6.8
New agriculture techniques	6.4	14.8	9.5
Get A/C or fan	10.6	11.1	10.8
Keep cool by bathing often	19.1	11.1	16.2
Irrigation canals	38.3	25.9	33.8
Plant trees	74.5	81.5	77
Level of agreement that respondent can find the info they need to resp	ond to cli	mate cho	inge
Agree	69.4	60	65.4
Neutral	21	22.2	21.5
Disagree	9.7	17.8	13.1
Main barriers for taking action to respond to the impact of climate cha	nge		
Not enough money	49.2	59.5	53.3
Lack of tools	27.7	21.4	25.2
Lack of knowledge	23.1	16.7	20.6
Other	0	2.4	0.9
Main responsible institution in respond to climate change			
Government	24.2	48.9	34.6
Local authority	53.2	33.3	44.9
NGOs	9.7	2.2	6.5
Other	12.9	15.6	14

Table 5. Level of Community Participation in Climate Change

	Samroung Yea Village	Ampil Village	All
	%	%	%
Participation in the following activities in the past 12 months			
Monthly commune meeting	60.9	68.5	64.4
Use community resources	57.8	46.3	52.5
Identified and prioritized community issue and need	51.6	35.2	44.1
Process of CDP	60.9	44.4	53.4
Process of CIP	39.1	25.9	33.1
Write a complaint letter in accounting box	0	3.7	1.7
Looking at the commune/village-based information board	42.2	44.4	43.2
Respondents who ever raised any concerns on climate change	40.7	43.2	41.8
Mean of raising concerns			
Informal meeting/dialogue	51.4	59.4	55.1
CC meeting	27	28.1	27.5
NGOs meeting	5.4	3.1	4.3
School/University	16.2	9.4	13
Respondent who said that local authorities take action to			
address those concern	64.9	59.4	62.3
Level of satisfaction to the resolution			
Very satisfy	16.7	6.3	11.6
Satisfy	70.8	78.9	74.4
Neither	125	10.5	11.6
Dissatisfy	0	5.3	2.3
% of respondent who ever share any information/knowledge on			
climate change to other	56	45.9	51.5

Table 6. Improved sanitation facilities and Safe Drinking Water

Improved sanitation facilities (% of population with access) Access to improved sanitation facilities refers to the percentage of the population with at least adequate access to excreta disposal facilities that can effectively prevent human, animal, and insect contact with excreta. Improved facilities range from simple but protected pit latrines to flush toilets with a sewerage connection. To be effective, facilities must be correctly constructed and properly maintained. **WHO and UNICEF, Joint Measurement Programme (JMP) (http://www.wssinfo.org/)**

Improved water sources, urban & Rural (% of population with access). Access to an improved water source refers to the percentage of the population with reasonable access to an adequate amount of water from an improved source, such as a household connection, public standpipe, borehole, protected well or spring, and rainwater collection. Unimproved sources include vendors, tanker trucks, and unprotected wells and springs. Reasonable access is defined as the availability of at least 20 liters a person a day from a source within one kilometer of the dwelling.

	Samroung Yea		
	Village	Ampil Village	All
	%	%	%
Main source of drinking water in dry season			
Tube well or borehole	30.5	18.9	25.5
Protected dug well	22	16.2	19.4
Unprotected dug well	46.2	62.2	53.3
Surface water	0	1.4	0.6
Other	1.1	1.4	1.2
Main source of drinking water in wet season			
Tube well or borehole	27.5	13.5	21.2
Protected dug well	14.3	13.5	13.9
Bottled water	0	1.4	0.6
Unprotected dug well	34.1	39.2	36.4
Rain water	19.8	28.4	23.6
Surface water	1.1	1.4	1.2
Other	3.3	2.7	3
Main toilet facility that usually used			
Flush to piped sewer system	13.2	8.1	10.9
Flush to septic tank	45.1	45.9	45.5
Pit latrine with slab	20.9	20.3	20.6
No facility/bush/field	20.9	24.3	22.4
Other	0	1.4	0.6
Main source of cooking fuel used			
Electricity	1.1	1.4	1.2
Biogas	3.3	5.4	4.2
Charcoal	12.1	10.8	11.5
Wood	83.5	82.4	83
% of household with Bio-digester	9.9	2.7	6.7

Relevance

Effectiveness

Impact

Sustainability

VIII. Conclusions and Discussions

The threats of climate change have had significant direct, indirect and potentially long-term effects and suggest that it is unlikely that Cambodia will achieve all its CMDG -Goal 7-Environmental Sustainability in 2015 and probably propose for Sustainable Development Goal 2015-2030 as global concerns and commitment.

Cambodia has huge endowments of natural resources such as deforestation, natural disasters (drought & flood) unfertile land, land degradation, land grabbing, uncontrolled mineral, gas exploitation, water pollution, climatic conditions which represents potential comparative advantages for agriculture. Over 60% of the population directly or indirectly depends on income generated in agriculture, forestry, fisheries and agriculture.

Specifically, within short period of project implementation, PDP Center gained credible and acknowledge in support and implementation of project from village people, relevant local authorities and stakeholders. Majority of surveyed people appreciated and understood as well as experienced in extreme weather (99.6%), heard the word of climate change in Khmer (65.8%) and aware (65.6%) at least two causes of climate changes ((deforestation, Pollution by industries, Using care/vehicle & Using fossil fuels).

However, its very low knowledge and practices in using bio digesters (6.7%) and low using safe drinking water (40%). All most all relevant stakeholders and people need bio digesters because they seen and acknowledged existing families in their villages who became medium and rich due to bio-digester.

Another key finding that level of adaption of climate change among Samroung Year people are still need more time to lean and adapt because their perception on the cause of poverty due to climate change are low.

Project applied in the most relevance to the needs of local people and aligned with National Strategy of Climate Change and Natural Resources Management and Environment. Even the absences of baseline values, but project gained high effectiveness. However, Sustainability is difficult to say at this time.

The summary findings as indicated in below table.

No	Measurable Indicators (Outcomes and Impact Indicators)	Value
	KNOWLEDGE ON CLIMATE CHANGE AND ITS CAUSES	
1	% of respondent who have experienced at least one of extreme weather in the past year.	99.6%
2	% of respondent who received information on extreme weather before the event.	74.4%

3	% of respondent who have heard the term "Climate Change".	65.8%
4	% of respondent who have heard the term "Climate Change" via PDP activities.	10.6%
5	% of respondent who aware the at least two causes of climate change (deforestation, Pollution by industries, Using care/vehicle & Using fossil fuels).	65.5%
	CLIMATE CHANGE'S IMPACT, ADAPTATION AND RESPONSE	
6	% of respondent who thought that climate change affects Cambodia now.	100%
7	% of respondent who thought that climate change effect on poverty.	21%
8	% of respondent who experienced difficult to work due to climate changes.	33.3%
9	% of respondent who agreed that they are able to respond to the climate change.	63.6%
10	% of respondent who agreed that the community people can respond to the climate change.	55.7%
11	% of respondent experienced done anything to respond to the climate change.	65.6%
12	% of respondent who agreed that they can find information they need to responds to the climate change.	65.4%
13	% of respondent who said that lack of knowledge on climate change is the barriers to taking action to respond to the impact of climate change.	20.6%
	YOUTH AND CLIMATE CHANGE PARTICIPATION	
14	% of respondent who ever raised any concern on climate change in their community.	41.8%
15	% of respondent who ever shared any information/knowledge about climate change to others.	51.5%
16	% of respondent using improved sources of drinking water	44.9% (Dry)/ 35.7% (Wet)
17	% of respondent using improved toilet/latrine facility	77%
18	% of respondent using firewood and charcoal for cooking	94.5%
19	% of respondent whose household have had bio-digester/gas	6.7%

IX. Recommendations

- Advocate for community movement on Bio-digesters establishment and construction in Samrong Year as well as in Samrong Year Commune, Pork District for through providing concessional and full package of loan to reduce firewood and charcoal consumption as well as improve sanitation facilities and clean and safe water.
- Organize regular Community campaigns on awareness of climate change and climate adaption through increasing investment for local authority/CC/SC and increased

awareness and capacity of rights holders and local duty bearers on natural resource management and sustainable environment.

- Enhancing people participation in Natural Resource Management and Environment through mainstreaming all those important components in CDP/CIP
- Promote the highly decentralized decision making through fully delegated roles, decision
 making, resource mobilization, technical transferring and responsibilities to local authority
 especially roles of Commune disaster Committee and other local democratic
 mechanisms to be locally institutionalized partnership for environmental protection and
 natural resource management.
 - o Tools and Mechanisms Development
 - o Policy and Guideline Formulation
 - o Technical Transferring package
 - o Resource Mobilization Strategies
 - Delegated decision making

Χ. **Annexes**

Annex A. Bibliographies

- MoP (2011); Cambodia Millennium Development Goals Report (CMDG 2011);
- MoP (2009); Updated National Strategy Development Plan (NSDP) 2009-2013;
- MoE (2011); Understanding Public Perceptions of Climate Change in Cambodia;
- PDP (2012); Quarterly Achievement Report,
- PDP (2012); Logical Framework, Civic Engagement for Climate Change Adaptation,
- MoP & MoH(2010); Cambodia Demographic and Health Survey (CDHS 2010);
- MoP (2009); Cambodia Socio-Economic Survey (CSES 2009);

Annex B. Evaluation Tools

STRUCTURE QUESTIONNAIRE
Questionnaire code:
PEOPLE CENTER FOR DEVELOPMENT AND PEACE (PDP)
Survey On
Youth and Climate Change Adaption
Date of interview:
LOCATION: Samrong Yea Village, Samrong Yea Commune, Puok district, Siem Reap Province.
INTRODUCTION

People Center for Development and Peace (PDP) is conducting the survey on the awareness and adaptation of youth on climate change with the aim to obtain the information to inform the development of PDP Strategic Plan 2013-2017.

INTERVIEWER:

______ I'm working for PDP. The purpose of the interview is to Hello. My name is ___ understand in more detail on the awareness and adaptation of youth on climate change. The information you provide will be collected, summarized and analyzed in a general report and your name will not be identified anywhere in the report. We would greatly appreciate your help in responding to this survey. It will take 30 minutes to complete the questionnaire. You are free to refuse to answer any questions at any time but each question is an important area that we would like to get your feedback on.

-	Signature of interv	viewer: _		, name:
-	Signature of super	rvisor:		, name:
Questionn	aire filled:			
_	Completely:	1		
-	Mostly:	2	,Reason:	
-	Partly:	3	,Reason:	
-	Not at all:	4	,Reason:	

SECTION I: DEMOGRAPHIC AND CHARACTERISTIC OF RESPONDENTS

NO	QUESTIONS AND INSTRUCTIONS	CODE CATEGORIES/ANSWERS	SKIP TO
q1-1	Sex of respondent	Male: 1	
		Female: 2	
q1-2	How old are you?	Age in years	
		Don't know88	
q1-3	What is your highest level of education?	Grade number	
		If the respondent never study write	
		<u>00</u>	
		Technical skill 13	
		Bachelor Degree 14	
		Master Degree 15	
q1-4	What is your current marital status?	Single1	
		Married2	
		Widowed/Divorce 3	
q1-5	Which is your current main occupation?	Unemployment 0	
		Student 1	
		Employees 2	
		Self-employed/agriculture 3	
1 (Other 4	
q1-6	How many members are in your	Number of member _ _	
1 7	household?	No response 99	
q1-7	How much is your average household	Riel _ _ _ _ _	
1.0	income per month?	No response 99	
q1-8	How much is your average household	Riel _ _ _ _ _ _	
1.0	expend per month?	No response 99	
q1-9	How much is your average household	Riel _ _ _ _ _ _	
	saving per month?	No response 99	

SECTION II: Knowledge on Extreme weather events

NO	QUESTIONS AND INSTRUCTIONS	CODE CATEGORIES/ANSWERS		SKIP TO
q2-1	Think about the past year, please tell me	Very heavy rain	1	
	whether you have experienced one or	Pest on agricultural production	2	
	more of the following extreme weather	Very high temp	3	
	events?	Drought	4	
		Storm, Cyclone, Tonado	5	
	Multiple responses	Flood	6	
		Very cold temp	7	

		Wildfire	8	
		No such event experienced	9	
			88	
q2-2	Which of these events had the most	Very heavy rain	1	
	serious impact on your life?	Pest on agricultural production	2	
		Very high temp	3	
		Drought	4	
		Storm, Cyclone, Tonado	5	
		Flood	6	
		Very cold temp	7	
		Wildfire	8	
		No such event experienced	9	
			88	
q2-3	Did you receive any information about	Yes	1	
	the event you mentioned?	No	2	→ q3-1
		No response	99	
	NAME and alicely considerate the constant of	Defense accepts	1	→ q3-1
q2-4	When did you hear about the event?	Before events	1	
		During events	2	
		After events	3	
			88	
q2-5	Where did you get this information from?	TV	1	
		Radio	2	
	Multiple Responses	Neighbor/relative/friend	3	
		Newspapers	4	
		Authorities	5	
		PDP activities	6	
		Other:	7	
q2-6	How would information have helped you	Prepare materials	1	
	to prepare for such an event?	Help each other to prepare for events	2	
		Buy pesticide	3	
	Multiple Responses	Move to place of safety	4	
		Prepare sufficient food	5	
		Plant more trees	6	
		Store water	7	
		Construct irrigation system	8	
		Healthcare	9	
		Other:		
			10	
			. •	

SECTION III: Knowledge on climate change and its causes

NO	QUESTIONS AND INSTRUCTIONS	CODE CATEGORIES/ANSWERS	SKIP TO
q3-1	Have you ever heard the term "Climate Change"?	Yes 1 No 2 No response 99	→q5-1 →q5-1
q3-2	For the term "Climate Change", could you please tell me as much about it as you can?		

~: 2 · 2	Marilal variations tall many whom war	T\ /	1	
q3-3	,	TV	I	
	heard the term "Climate Change"?	Radio	2	
		Neighbor/relative/friend	3	
	Multiple responses	Newspapers	4	
		Authorities	5	
		PDP activities	6	
		Other:	7	
q3-4	What do you think causes the weather	Deforestation in Cambodia	1	
	patterns to change in Cambodia?	Pollution by industry	2	
		Driving care/other vehicles	3	
	Multiple responses	Using fossil fuels	4	
		Nature	5	
		Other:	6	
		DK 8	38	
q3-5	To what extent do you agree or	Agree	1	
	disagree with this statement? (Some	Neutral	2	
	people saying that human activities are	Disagree	3	
	causing weather patterns around the	DK 8	38	
	world to change over time).			

SECTION IV: KNOWLEDGE ON CLIMATE CHANGE'S IMPACT, ADAPTATION AND RESPONSE

NO	QUESTIONS AND INSTRUCTIONS	CODE CATEGORIES/ANSWERS	SKIP TO
q4-1	Do you think climate change affects	Yes	1
	Cambodia now?	No	2
		No response 9	9
q4-2	Do you think climate change affects	Yes	1
	Cambodia in the future?		$\frac{2}{2}$ \rightarrow q4-5
		No response 9	9 →q4-5
q4-3	What in your opinion are/will be the	Health	1
	effects of climate change here in		2
	Cambodia?	Drought	3
			4
	Multiple responses	9	5
		9	6
		,	7
		Other:	_
			8
			8
q4-4	What consequences do the changes	S	0
	in weather have for the life of you and	Have a lot of diseases	
	your family?		2
	M. Walanaan		3
	Multiple responses		4
		0 1	5 6
		More expense(water, electricity	•
		wide expense (water, electricity	7
		Other:	8
		DK 8	
q4-5	To what extent do you agree that you	Agree	1

			_ 1	1
	are able to respond to the changing	Neutral	2	
	weather?	Disagree	3	
		DK 8	38	
q4-6	To what extent do you agree that your	Agree	1	
94-0				
	community can respond to the		2	
	changing weather?	Disagree	3	
		DK 8	38	
q4-7	What can people do in response to the	Nothing	0	
-	changing weather?	Plant trees	1	
		Get air conditioning/fan	2	
	Multiple responses	G G		
	Mulliple responses	Keep cool by bathing often	3	
		New agri techniques	4	
		Irrigation canals	5	
		Move away from one area to another	6	
		Other:	[
			7	
		DK 8	38	
010	Have you or someone in your family	Yes	1	
q4-8	Have you or someone in your family		1	→ q4-10
	done anything to respond to the		2	\rightarrow q4-10 \rightarrow q4-10
	changing weather?	No response 9	99	744-10
q4-9	If yes, what have you/they done in	Plant trees	1	
	response?	Get air conditioning/fan	2	
		Keep cool by bathing often	3	
	Multiple responses	·	4	
	mempie responees	Irrigation canals	5	
		_		
		Move away from one area to another	6	
		Other:	_	
			7	
		DK 8	38	
q4-10	To what extent do you agree that you	Agree	1	
	can find the information you need to		2	
	responds to the changing weather?		3	
		_	38	
Q 4 1 1	What would you say are the barriers to		_	
q4-11	What would you say are the barriers to	Not enough money	1	
	taking action to respond to the impact		2	
	of changing weather?	Lack of knowledge	3	
		Other:	4	
		DK 8	38	
q4-12	Who has the most responsible to	The government	1	
	respond to the changing weather?	Local authority	2	
		NGOs		
			3	
		Donors	4	
		Other:	5	
		DK 8	38	

SECTION V: YOUTH AND CLIMATE CHANGE PARTICIPATION

N	0	QUESTIONS AND INSTRUCTIONS	CODE CATEGORIES/ANSWERS SKIP TO
q5	5-1	In the past your, have you ever partic	sipate in any of the following activities in your
		community?	

	No	Activities		Yes	N	lo	DK
	1 Monthly commune meeting		1		2	88	
	2	Use community resources		1		2	88
	3	Identified and prioritized communi	ty issue and need	1		2	88
	4	Process of commune investment p	lan development	1		2	88
	5	Process of commune developmen	t plan development	1		2	88
	6	Write a complaint letter in accoun	ting box	1		2	88
	7	Looking at the commune/villag	ge-base information	1		2	88
q5-2		past year, have you ever raised		Ye			
	any c	concern on climate change?	,	No No response	99	→ q5-4 → q5-4	
q5-3	If yos	, how do you raised?		CC meeting			
45-5	li yes	, now do you raised?		GOs meeting	-		
				ool/Universit	-		
			Informal meet		,		
			Other:		_ 5		
q5-4	Wher	n you raised your concern on		Ye	s 1		
	climo	ite change to commune council		No	2		
	or loc	cal authorities, did commune	1	No response	99		
		cillor or local authorities take any					
		n to address those issues?					
q5-5	1	, how would you rate the level of		Very satisf			
	your	satisfaction to the resolution?		Satisf	•		
				Neithe			
				Dissatisf	•		
	<u> </u>		\	ery dissatisf	•		
q5-6		you ever share any			es 1		
		nation/knowledge about climate			10 2		
	chan	ge to others?		No response	99		

SECTION VI: PRACTICE ON WATER, SANITATION, AND COOKING SOURCE

NO	QUESTIONS AND INSTRUCTIONS	CODE CATEGORIES/ANSWERS	SKIP TO
q6-1	What is the main source of drinking	Piped water into dwelling 1	
	water during the dry season for member	Public tap/standpipe 2	
	of your household?	Tube well or borehole 3	
		Protected dug well 4	
		Unprotected dug well 5	
		Rain water 6	
		Bottled water 7	
		Tanker truck/cart with small tank	
		8	
		Surface water 9	
		Other:	
		10	
q6-2	What is the main source of drinking	Piped water into dwelling 1	
	water during the wet season for member	Public tap/standpipe 2	
	of your household?	Tube well or borehole 3	
		Protected dug well 4	
		Unprotected dug well 5	

	Rain water 6	
	Bottled water 7	
	Tanker truck/cart with small tank	
	8	
	Surface water 9	
	Other:	
	10	
What kind of toilet facility do members	Flush to piped sewer system 1	
,	Pit latrine with slab 3	
	No facility/bush/field 4	
	·	
Do you share this toilet with other	Yes 1	
households?	No 2	
What type of fuel does your household	Electricity 1	
	Biogas 2	
,	Charcoal 3	
	Wood 4	
	Other: 5	
Did your household have had	Yes 1	
·	No 2	
	No response 99	
	What kind of toilet facility do members of your household usually use? Do you share this toilet with other households? What type of fuel does your household mainly use for cooking? Did your household have had Biodigester/gas?	Bottled water 7 Tanker truck/cart with small tank 8 Surface water 9 Other:

Thank you for your kind collaboration!

KEY INFORMANT INTERVIEW QUESTIONNARIE GUIDE (KII)

LOCATION: Samrong Yea Village, Samrong Yea Commune, Puok district, Siem Reap Province.

General Information:

Interviewee's Name:	Contact Information:
Date:	
Beginning Time:	Ending Time:
Facilitator's Name:	Note's Name:

INTRODUCTION

People Center for Development and Peace (PDP) is conducting the survey on the awareness and adaptation of youth on climate change with the aim to obtain the information to inform the development of PDP Strategic Plan 2013-2017.

INTERVIEWER:

Hello. My name is	I'm working for PDP. The purpose of the interview is to
understand in more detail o	n the awareness and adaptation of youth on climate change. The
information you provide will	be collected, summarized and analyzed in a general report and
your name will not be identif	fied anywhere in the report. We would greatly appreciate your help
in responding to this survey. I	t will take 30 minutes to complete the questionnaire. You are free to
refuse to answer any questi	ions at any time but each question is an important area that we
would like to get your feedbo	ack on.

Key Question

- 1. Is there any experienced of extreme weather (very heavy rain, very high temperature, Drought, Flood, and Storm, etc.) happened in Cambodia?
- 2. Do you think that Cambodian people receive sufficient information on climate change (before, during and after)? why?
- 3. Do you think that Camboidan people have enough knowledge and capacity on impact of climate changes, adaptation and response? why?
- 4. How did the relevant stakeholder such as local authorities, community people, and other insitutions reponsd to the climate change?
- 5. Do you think what should be the effective approaches to help community people/youth in climate chang adaptation?
- 6. What were the most barier in respond to the climate changes?
- 7. Do you have any suggestion or recommendation about climate change?

Thank you for your kind collaboration!

FOCUS GROUP DISCUSSION GUIDE

LOCATION: Samrong Yea Village, Samrong Yea Commune, Puok district, Siem Reap Province.

General Information:

Number of Youth:	
Date:	Contact Information :
Beginning Time:	Ending Time:
Facilitator's Name:	Note's Name:

INTRODUCTION

People Center for Development and Peace (PDP) is conducting the survey on the awareness and adaptation of youth on climate change with the aim to obtain the information to inform the development of PDP Strategic Plan 2013-2017.

INTERVIEWER:

Hello. My name is	I'm working for PDP. The purpose of the group
discussion is to understand in more detail on	n the awareness and adaptation of youth on climate
change. The information you provide will be	e collected, summarized and analyzed in a general
report and your name will not be identified o	anywhere in the report. We would greatly appreciate
your help in responding to this survey. It will	take 30 minutes to complete the questionnaire. You
are free to refuse to answer any questions	at any time but each question is an important area
that we would like to get your feedback on.	

Key Question

- 1. Is there any experienced of extreme weather (very heavy rain, very high temperature, Drought, Flood, and Storm, etc.) happened in your community?
- 2. How extreme wheather affect to your community?
- 3. Do you think that you and commmunity people receive sufficient information on climate change (before, during and after)? why?
- 4. Do you think that you and community people have enough knowledge and capacity on impact of climate changes, adaptation and response? why?
- 5. How did you respond to the chaning weather?
- 6. How did local authority respond to the changing weather?
- 7. What were the most resource needed in respond to the changing weather for your community?
- 8. Do you think what should be the effective approaches to help community people/youth in climate chang adaptation?
- 9. What were the most barier in respond to the climate changes?
- 10. Do you have any suggestion or recommendation about climate change?