



BTC VIETNAM

PEOPLE'S
COMMITTEE OF NINH
THUAN PROVINCE

BASELINE REPORT

INTEGRATED WATER MANAGEMENT AND URBAN DEVELOPMENT IN RELATION TO CLIMATE CHANGE IN THE PROVINCE OF NINH THUAN



VIE 11 040 11

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Abbreviations and Acronyms

BTC	Belgium Technical Cooperation
CC	Climate Change
DARD	Department of Agriculture and Rural Development
DOC	Department of Construction
DOIT	Department of Industry and Trade
DONRE	Department of Natural Resources and Environment
DOT	Department of Transportation
IWRM	Integrated water resources management
IMC	Irrigation Management Company
MCDU	The Management and Capacity Development Unit of Water Resource and Public Services Ninh Thuan Province
M&E	Monitoring and Evaluation
MOC	Ministry of Construction
MONRE	Ministry of Natural Resources and Environment
MPI	Ministry of Plan and Investment
PCU	Project Coordination Unit
PPC	Provincial People's Committee
PSC	Project Steering Committee
OC	Outcome Indicator
TFF	Technical and Financial File
TSU	Technical Support Unit

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1. Intervention Form

Intervention Number	3012429	
Navision Code BTC	VIE 11 040 11	
Partner Institution	People's Committee of Ninh Thuan Province	
Length of the intervention	6 years + 1 year for the Specific Agreement	<u>Set up phase:</u> 6 months <u>Implementation phase:</u> 60 months, including 24 months for the CC study phase <u>Evaluation and closure phase:</u> 6 months Closing date: 30 June 2019
Date of first Steering Committee	November 2013	
Contribution of the Partner Country	1,600,000 EUR (including 100,000 EUR for PIM)	
Belgian Contribution	9,000,000 EUR (including 1 million EUR for PIM)	
Sector (CAD codes)	41010	
Brief description of the intervention	<p>To develop appropriate operational climate change (CC) modelling and strategy for Dinh river basin to adapt the development of Phan Rang - Thap Cham city to the CC challenges, while reviewing the Masterplan (MP) following strategic structural and sustainable planning approaches of Phan Rang and more particularly around Dam Nai lake and the Dinh river mouth to transform the areas as urban villages following the Eco² city principle, with a strategic pilot project for experimentation of appropriate adaptation measures with regard to water-based problems, such as flooding.</p>	
Global Objective	To contribute to the sustainable development of Ninh Thuan province	
Specific Objective	To support the institutional capacity in Ninh Thuan Province in integrated water resources management and urban development in relation to Climate Change.	
Results	<p>R1. The capacity of the authorities of the province and Phan Rang city in terms of Climate Change, Integrated Water Resources Management and urban planning are improved with appropriate monitoring and evaluation mechanisms in place.</p> <p>R2. A comprehensive strategy on CC is in place. It is based on various studies, including CC data and hydraulic modelling focused on operational impact on settlements of Dinh river catchment and the revision of the existing master plans of Phan Rang city and its hinterland, with a focus on Dam Nai lake and the Dinh river mouth, while key priorities of the CC action plan of the Dinh river basin are defined.</p> <p>R3. Priority strategic pilot activities are developed for lessons learned targeting either Dam Nai lake or Dinh river mouth areas to increase resilience to CC, with appropriate operational and maintenance modalities.</p> <p>R4. The provincial CC strategy is supported by the active involvement of the communities and the private sector.</p>	

2. Introduction

The project "Integrated Water Management and Urban Development in relation to Climate change in Ninh Thuan province" is jointly funded by the Governments of Vietnam and Belgium through its Specific Agreement signed on 20 June 2013. It aims to enhance institutional capacity of Ninh Thuan province in water resource management and urban planning by integrating best practices in these fields into existing climate change (CC) strategy and action plan to enhance local resilience to CC as well as inform local planning by various studies on water and CC and pilot investments, which ultimately enhance the sustainable development of Ninh Thuan province. The project is implemented in six years from 2014 to 2019 with a main focus on Dinh river basin. The project is part of a larger CC program being implemented in three provinces, namely Ninh Thuan, Ha Tinh and Binh Thuan. A Technical Support Unit (TSU) in Hanoi provides technical assistance to all three provinces to ensure effective use of resources and coherence of the program.

At the start-up of the Programme, in April 2014, a "MoRe Result" training was provided to all BTC interventions in Vietnam and the Climate Change Programme was included. A M&E workshop was then organised from 8-10 December 2015 in Hanoi to agree on the final set of indicators and complete the monitoring matrix.

The present Baseline Report is the final product of the Baseline process. The Baseline Consultant, Mekong Economics Ltd., has been selected for the Baseline Work Plan implementation, including the preparation of the Baseline Report. Specifically, the Baseline Consultant has assisted the Project Coordination Unit (PCU) to define baseline and final target values for most indicators.

Baseline and target values for several indicators are not required since the Project will only take new cases of sample evidence into account. However, for most indicators either the values are defined from existing information, or other studies. In the case that data is not available from the Technical and Financial File (TFF) or recent studies/documents, the target values are estimated as realistically as possible, without under- or overestimation.

In addition, values for several indicators are defined through a Technical and Institutional Capacity Assessment (TICA) and a Satisfaction Survey. Specifically, the TICA provides inputs for Output indicator 1.1 and Outcome indicator OC 4. The TICA in 2016 was implemented by South-East Asia Institute for Water Resources and Environment (SAIWRE) with an aim to identify the technical and institutional capacity as well as a capacity development strategy, implementation plan and results framework. A technical training plan for organizations and individuals was also specified in the capacity development strategy. Meanwhile, the Satisfaction Survey is conducted to measure Indicators 1.4, 1.5 and 1.6. The PCU, with support from the Consultant, carried out the 2016 Satisfaction Survey.

The Baseline Report has been developed through a participatory process with an active involvement of the donor, TSU, PCU, and local agencies. The Baseline Report presents a commentary and recommendations relating to all logframe indicators (and how they may be measured) and the risk matrix. The Baseline Work Plan and final M&E matrix are attached to Annex 1 and 2, respectively. Revision to the project risk matrix is presented in Annex 3. A list of actors involved in the baseline process (including those participating in the Satisfaction Survey) is included as Annex 3 and Satisfaction data and analysis as Annex 4 of the Baseline Report.

3. Final Monitoring Framework

3.1 Intervention Logic

The intervention logic as described in the TFF has not changed as far as the formulation of impact, outcome, and outputs is concerned. However, changes did occur in the choice of the indicators because some indicators were considered to be less relevant for the respective result levels and others appeared difficult or impossible to measure. Specifically, few changes were made to the monitoring framework. Changes included dropping indicators related to Output 3 which were considered to be “outside the project’s sphere of control.” For example indicators like: “reduced number of flooding spots...” or “area of inundation/rainfall...” These elements refer already to the effects of different measures taken and are therefore more linked to the impact of the project (indicating increased readiness/resilience) than linked to the output level of the Project.

In addition, as stated in the Revision 01 of the TFF, in 2016, an amount of EUR 1 million from the unassigned funds balance in the ICP is added to the existing project (rather than to establish a new and separate project) to enhance capacity for water resources management in the province. The new activities related to the additional budget, including Activity 2.5 under Output 2, and Activities 4.4 and 4.5 under Output 4, have been well integrated into the project design. As a result, a total of five additional indicators were supplemented to the original logframe for monitoring. These include indicators 2.5 and 2.6 under Output 2, and indicators 4.8, 4.9 and 4.10 under Output 4.

3.2 Monitoring Matrix

In this chapter all the logframe indicators will be reviewed. Measures for most indicators have been established, and the methodology and logic behind these is explained. It is also noted that some indicators remain unmeasured at this stage. One important aspect of this work is that some indicators are hard to measure comprehensively (e.g. require a survey) and about impact, and therefore are best left as tasks for the end-project evaluation rather than annual data collection for the M&E system.

Output level

There are twenty-five indicators at output level: Output 1 (six indicators), Output 2 (six indicators), Output 3 (three indicators) and Output 4 (then indicators). The baseline value for many output indicators are zero.

Output 1

For this Output, three quantitative and three qualitative indicators have been selected to record progress on the achievements (see Table 1).

Table 1: Logframe for Output 1

No.	Output - Indicators	Baseline value	Final target value	Annual actual/target values						Unit of measurement	Source of verification	Frequency of data collection	Start - End measurements	Responsible data collection	Responsible consolidation	Other
				2014 - actual	2015 - actual	2016 - target	2017 - target	2018 - target	2019 - target							
0	OUTPUT 1 : The capacity of the authorities of the province in terms of CC, Integrated Water Resources Management and Urban Planning are improved with appropriate M&E mechanisms in place.															
1.1	Number training participants trained on climate change, integrated water resource management and/or urban development	0	1132	137	0	435	300	260	0		Training reports	Per training, Quarterly overview		Trainer (PCU ensures)	PCU	
1.2	Average change in scores on entry and exit tests	n/a	25%	n/a	n/a	10%	15%	20%	25%	%	results integrated in training reports	Per training, Quarterly overview		Trainer (PCU ensures)	PCU	using a self-assessment tool
1.3	Appropriate equipment and software systems are in place	0	11	0	0	1	9	1	0	System	Concerned organizations	Yearly		PCU	PCU	
1.4	Responsiveness of data (CC-IWRM & UD) management system to the provincial users	0	80%	n/a	59%	65%	70%	75%	80%	%	Satisfaction survey	Yearly		PCU	PCU	TSU contribution
1.5	Coordination and communication mechanism responds to the knowledge management need of the provincial authorities	0	90%	n/a	71%	75%	80%	85%	90%	%	Satisfaction survey	Yearly		PCU	PCU	TSU contribution
1.6	New and relevant information is available from the expanded hydrological & meteorological monitoring network	0	80%	0	0	50%	60%	70%	80%	%	Satisfaction survey	Yearly		PCU	PCU	TSU contribution

Output indicator 1.1 measures ‘the number of staff trained by the Project on climate change, integrated water resource management and/or urban development’. Data will be disaggregated by gender (m/f), by the benefiting organisation and by the position of the trainees (assistant, technical officer or manager). The TICA mentions numbers of courses and participants (although details after TOT numbers are unclear). At this stage, the figures for each year’s target and final target are established using the TICA’s proposed trainings/capacity building activities.

- Baseline value: zero
- For the two years 2014 and 2015: the target values have not been identified as actuals as this Baseline Study is undertaken in 2016. As reported by the PCU, the actual values of 2014 and 2015 were 137 and 0, respectively.¹
- For the target of the remaining three years: as proposed in the TICA Report, the number of people receiving capacity building from the Project will be 435, 300 and 260, for 2016, 2017 and 2018 respectively (see Table 2 below).
- Final target: The accumulative number of people receiving capacity building will be 1,132, which is the final target value for this indicator. However, it is noted that this figure does not include those attending the Study Tours as it has not been specified in the TICA Report.

Table 2: Planned number of people receiving capacity building, 2016-2018

Year	Workshop	Training			Number of people receiving capacity building (**)
		Water Resource Management	Climate change	Integrated Urban Development (*)	
2016	200	115	60	60	435
2017	100	80	60	60	300
2018	100	100	0	60	260

Source: South East Asia Institute for Water Resources and Environment (SAIWRE), TICA Report (Draft 2), 01/2015 (page 8)

Note: (*) Since in TICA (draft 2) there is no data on the people receiving training in Integrated Urban Development, MKE put a preliminary figure of 30 trainees each year for each of two topics in this area.

(**) Total number of people receiving capacity building does not include those who will join study tours as there is no figure available in this TICA Report about this type of

¹ In 2014, the PCU organised three trainings, including training in Project Proposal and Fund Raising in October 2014 for 41 participants, training in Methodology and Skills for Monitoring and Evaluation of Development Projects in August 2014 for 43 participants, and training in Environment and Hygiene in September 2014 for 53 participants. In 2015, there was no training.

Output indicator 1.2 keeps track of the **average change** in scores on entry and exit tests of the participants in the above trainings. Output 1.2 says “test” but actually really means a standard “before training” questionnaire on the participant’s conditions, and a post-training satisfaction and follow-up questionnaire. The PCU or the contracted trainer, will do both for every training event. Tests about knowledge gained would also provide solid M&E data. The TSU has designed a simple format using multiple choice questions for this questionnaire for Output Indicator 1.2 of all the three projects’ logframes. Typically scores from these assessments are on a scale from 1 (lowest ranked) to 4 (highest ranked).

- Baseline value and actual values of 2014 and 2015: are non-applicable because this assessment has not been done in these timings.
- Final and annual target values: the project has established 10%, 15%, 20% and 25% for 2016, 2017, 2018 and 2019, respectively, for this indicator. The final target value of this indicator is not a cumulative figure but it shows the trend of the average change in scores on entry and exit tests of the participants in the trainings.

Output indicator 1.3 counts the number of **systems** developed and installed under the project including appropriate equipment, tools, software and databases. Examples include the system for early warning and the system for the GIS database. Each official handover of a serviceable system to the concerned organisation is to be recorded and reported annually by the PCU.

- Baseline value: value for the Baseline and for 2014 and 2015 were ‘zero’ since in the first two years of the project, the project did not purchased nor installed any systems.
- Annual target values : ‘one’ for 2016 target value, ‘nine’ for 2017 target value, and ‘one’ for 2018.
- Final target value will be ‘eleven’. These are explained as follows:.

The PCU has drafted ToR for the following four consultancy packages: (i) Consultancy on Present and Future climate data and analyses for water management in Ninh Thuan province; (ii) Hydrological/hydraulic Modelling of the Dinh river and Urban Drainage Modelling of Phan Rang-Thap Cham city; (iii) Research on the Impacts of Saltwater intrusion at downstream of Dinh River in Ninh Thuan province and propose adaptation measures; and (iv) develop an Early Warning System for the Dinh River Basin.

The Consultancy on Present and Future climate data and analyses for water management in Ninh Thuan province is expected to handover to the PCU comprehensive results from CC downscaling models. This database of results is aimed to handover to the PCU in 2016.

The Study on Hydrological/hydraulic Modelling of the Dinh river and Urban Drainage Modelling of Phan Rang- Thap Cham city, which is scheduled to finish in 2017, aims to develop the four systems as follows:

- Hydrological model development and application for Dinh River basin
- One-dimensional Hydraulic model development and application for Dinh River and Phan Rang – Thap Cham

- Two-dimensional Hydraulic model development and application for Dinh River and Phan Rang – Thap Cham City
- Urban drainage model development and application for Phan Rang – Thap Cham City

In the ToR of the package to develop an Early Warning System for the Dinh River Basin, there are four systems to be developed/installed by the Consultant, including:

- A system for the GIS database
- A software for the WR-CCIS
- A complete set of equipment for the Cai River Reservoir
- A set of server for data storage, data processing and data computation

This package is planned to finish and handover all systems to the PCU by 2017.

Additional instrumentation will be provided under the PIM component. This will comprise a complete set of equipment for five more reservoirs in the province delivered in 2018.

In the ToR for a Research on the Impacts of Saltwater intrusion at downstream of Dinh River in Ninh Thuan province and propose adaptation measures, the consultant is expected to develop and handover to the PCU a set of maps showing impact of saltwater intrusion to agriculture, aquaculture, domestic water supply for the present and forecast to 2025, 2050 in the downstream part of Dinh River. This system is planned to handover to the PCU in 2017.

Thus in short, the Baseline value is set at ‘zero’. ‘Nine’ systems will be included in the year 2017 whilst only one system will be included in the 2018 targets for the Output indicator 1.3. As a result, the final target is established at ‘eleven’.

Output indicators 1.4, 1.5, and 1.6 are to be measured by an annual “satisfaction survey”. As an annual activity, the survey will be short and simple. Case studies about actual data access and use, coordination and communication should be part of MTR and final evaluations.

In this 2016 survey, 19 individuals representing the same number of relevant agencies in the province were interviewed, using a standard questionnaire. The list of “users”, unless justified, and the questionnaire will remain unchanged in future surveys of the project.

Output indicator 1.4 measures the **responsiveness** of the data management systems for CC-IWRM & UD to the users in the province whilst Output indicator 1.5 measures the relative effectiveness of the **coordination** and **communication** mechanisms with regard to the knowledge management need of the provincial authorities.

The PCU, with the support from the Baseline Consultant, has carried out a Satisfaction Survey to measure the 2016 values for these two indicators. 19 individuals representing the same number of relevant agencies in the province have interviewed In this Survey, a ranking between 1 (unsatisfied) and 5 (very satisfied) was adopted for each indicator and consolidated to calculate the average.

The table above summaries the average score of 19 respondents for each question to measure the satisfaction level of the respondent toward Data management, data access, information sharing, coordination and communication in the context of managing water for climate change adaptation

and disaster risk management. There are five levels of measurement in the satisfaction scale level, of which are specified below:

Table 3: Output indicator 1.4 as in 2016

Sub-Indicator	Number of individual respondents	Respondents' feedback		
		Minimum point given	Maximum point given	Mean
O 1.4 - 01. Are you satisfied with the ease of access (financial and time costs) to get all the data you know is available?	19	1	5	2.7
O 1.4 - 02. Are you satisfied with the format in which you receive data (e.g. not in ready-to-use electronic database)?	19	1	5	2.6
O 1.4 - 03. Are you satisfied with the reliability/quality of the data you access?	19	1	5	3.2
O 1.4 - 04. Are you satisfied with the (up-to-date) timeliness of the data you access?	19	1	5	3.2
O 1.4 - 05. Are you satisfied with the level of detail of the data you access?	17	1	5	3.1
O 1.4 - 06. Are you satisfied with the scope/volume of data you can access (i.e. is there important data that you cannot access or that is not collected)?	19	1	5	3.0
O 1.4 - 07. Are you satisfied with the use by your organisation of data for planning and decision-making?	19	1	5	3.0
Average feedback for Output 1.4 measured in a scale from '1' to '5'				3.0
Average feedback for Output 1.4 measured in percentage				59.1%

Table 4: Output indicator 1.5 as in 2016

Sub-Indicator	Number of individual respondents	Respondents' feedback		
		Minimum point given	Maximum point given	Mean
O 1.5 - 01. How important is your department/organisation relating to adapting to climate change?	19	2	5	4.0
O 1.5 - 02. Is this role with reference to CC well understood within your department/organisation?	19	1	5	3.5
O 1.5 - 03. How would you rate the functioning of coordination and communication within your department/organisation with regard to adapting to climate change?	19	1	5	3.4
O 1.5 - 04. How would you rate the functioning of coordination and communication between Provincial departments and organisations with regard to adapting to climate change?	19	1	5	3.3
Average feedback for Output 1.5 measured in a scale from '1' to '5'				3.5
Average feedback for Output 1.5 measured in percentage				70.8%

In this 2016 Survey, the score of Output 1.4 was generally lower than Output 1.5. Specifically, minimum score for Output 1.4 was 2.63 and the maximum score was 3.16. Whereas, the minimum score for output 1.5 was 3.26 and the maximum score was 4.

In Output Indicator 1.4 regarding the responsiveness of data (CC-IWRM & UD) management tools to provincial users, most people was satisfied with the reliability/quality, timeliness, scope/volume and the level of detail of the data they access. However, in term of the ease of access and the format of data received, most people did not seem to be very satisfied.

In Output Indicator 1.5 regarding the coordination and communication mechanism responding to the knowledge management need of the Provincial authorities, most officials reveal that the coordination and communication mechanism was above average.

To estimate the target values for the rest of the years, the PCU has decided to increase each of these two indicators by 5 percent point every year. So the final target of Output 1.4 and 1.5 will be 80% and 90% respectively (i.e. 4 and 4.5 respectively).

Output Indicator 1.6 relates to the availability of new and relevant information from the expanded hydrological and meteorological monitoring network. Indicator 1.6 is not measured in the 2016 survey as the information and network is not operational yet.

The PCU has established the annual value for 2017 to be 50% (so the average rating of about 3 in a scale from '1' to '5'). Then each year, this indicator will be improved by ten percent point, leading to the final target value of 80%.

Output 2 - A Comprehensive strategy on CC is in place

Table 5: Logframe for Output 2

No.	Output - Indicators	Baseline value	Final target value	Annual actual/target values						Unit of measurement	Source of verification	Frequency of data collection	Start - End measurements	Responsible data collection	Responsible consolidation	Other
				2014 - actual	2015 - actual	2016 - target	2017 - target	2018 - target	2019 - target							
0	OUTPUT 2 : A comprehensive strategy on CC is in place															
2.1	No. of conducted research	0	4	0	0	1	3	0	0	No.	Study reports	Yearly		PCU	PCU	
2.2	A CC adaptation action plan is approved	0	1	0	0	0	1	0	0	No.	Action Plans	Once		PCU	PCU	
2.3	Master plans (provincial, cities/town) revised with regard to CC	0	1	0	0	0	1	0	0	No.	Master Plans	Yearly		PCU	PCU	
2.4	Prioritised proposals on CC are developed	0	tbc	0	0	0	tbc	tbc	tbc	No.	Proposals	Yearly		PCU	PCU	
2.5	A Study on River basin water resource assessment with consideration of climate change is completed	0	1	0	0	0	1	0	0	No.	Work completion report	Yearly		PCU	PCU	
2.6	A reservoir management system for integrated operating rules to seek a balance between optimising water availability and reduce wet season flood risk is developed and implemented	0	1	0	0	0	0	1	0	No.	Work completion report	Yearly		PCU	PCU	

Target numbers for O2.1 is easily obtained from project implementation plans. O2.2 and O2.3 are simply “yes/no” for log frame purposes, although explanation of progress (and if target years are delayed) will be part of quarterly reporting. O2.4 is clear.

Only quantitative indicators have been adopted for Output 2.

Output indicator 2.1 measures “the progress on the implementation of the studies and is to be updated quarterly by the PCU. The indicator measures progress towards the completion of the **vulnerability assessment** which is a key component of the CC strategy”.

- Baseline value and in 2014 and 2015: these values are zero since none study was completed.
- Final and annual target values: The Table 6 below indicates the four studies to be undertaken funded by the Project. It seems one study is expected to complete this year, and the other three will be completed in 2017. Thus the final target values will be four.

Table 6: The Studies to be implemented under the Project

No.	Name of Study	Planned/Actual Commencement date	Planned/Actual Completion Date
1	The hydrology-hydraulics study	January 2016	January 2017
2	The Salinity Study	May 2016	April 2017
3	Vulnerability Assessment Study	August 2016	August 2017
4	Study on climate scenarios for Ninh Thuan province	December 2015	July 2016

Source: the PCU

Output indicator 2.2 tracks the preparation of the Climate Change Action Plan.

- Baseline value : 0
- Final target value: 1, as there will be only one Provincial Integrated Strategy on CC to be prepared and be operational at end of the project. This Provincial Integrated Strategy on CC is expected to be finalised in 2017

Output indicator 2.3 monitors the completion of revised urban master plans as per Activity 2.3 in the TFF.

- Baseline value : 0
- Final target value: 1 as there is only one Master Plan of the Phan Rang- Thap Cham City needs to be revised. The revision, as required by the TFF, should integrate at the minimum “(i) the water urbanism, (ii) sustainable urban planning and (iii) the socio-economic and spatial relationships between Phan Rang city with its hinterland, on the one hand, and the Dinh river, on the other hand”.

This Master Plan is expected to fully revise by 2017.

Output indicator 2.4 records the priority proposals on CC.

- Baseline value : 0
- Final and annual target values: to be determined later by the PCU as the process of developing the priority proposals on CC has not completed yet.

The project is expected to “develop a comprehensive priority action plan of the adaptation measures for the Dinh basin with a focus on Phan Rang city and more particularly the areas around Dam Nai lake and Dinh river estuary”. This participatory process will identify the investment priorities for short term, medium term and long-term interventions integrating various criteria for prioritization. At the end of this process, a workshop will be organised, involving representatives of the different stakeholders at province level, ministries (MPI, MoC, MoNRE) as well as donors to select the most appropriate proposals. As this process has not been finished yet so the final and annual target values will need to be established later.

Output indicators 2.5 and 2.6 track how capacity strengthening for integrated river and reservoir operation to reduce flood risk and to improve drought management is strengthened. This capacity strengthening will be achieved by two key tasks: (i) conducting a Study on River basin water resource assessment with consideration of climate change; (ii) developing and implementing a reservoir management system for integrated operating rules to seek a balance between optimising water availability and reducing wet season flood risk.

Output indicator 2.5: A Study on River basin water resource assessment with consideration of climate change is completed.

- Baseline value : 0
- Final value is ‘one’ as there is only one Study will be undertaken. This Study is expected to complete in 2017,

Output indicator 2.6: A reservoir management system with integrated operating rules to seek a balance between optimising water availability and reduce wet season flood risk is developed and implemented.

- Baseline value : 0
- Final value is ‘one’ as there is only one system will be developed. It is expected that this system will be developed and implemented in 2018.

Output 3 - Priority strategic pilot activities are developed for lessons learnt

Table 7: Logframe of Output 3

No.	Output - Indicators	Baseline value	Final target value	Annual actual/target values						Unit of measurement	Source of verification	Frequency of data collection	Start - End measurements	Responsible data collection	Responsible consolidation	Other
				2014 actual	2015 actual	2016 target	2017 target	2018 target	2019 target							
0	OUTPUT 3 : Priority strategic pilot activities are developed for lessons learned															
3.1	No of (pilot) investments implemented, complying with CC adaptation specifications		3	0	0	0	1	2	0	No.	Work completion report	Yearly		PCU	PCU	
3.2	Effective O&M is implemented for each priority investment	0	3	0	0	0	0	1	2	No.	Document	Yearly		PCU	PCU	
3.3	No. of lessons-learned documents prepared on innovative features of the priority investments and of other aspects of the Project	0	8	0	0	2	2	2	2	No.	Publications	Yearly		PCU	PCU in collaboration with TSU	Specifically meant to keep track of level of innovation

The purpose of pilots is to test something – that means you have a reasonable expectation that it might fail. So failure is a good lesson to learn – or at least various problems that caused delays and costs that can be solved in the future. Ultimately then, the real impact of a successful pilot is that it is copied: replication, either by government or by private households (e.g. a new crop variety). This “replication issue” should be considered in the final project evaluation and maybe added as an additional impact indicator.

Output indicator 3.1 counts the number of implemented pilot investments respond to CC adaptation issues.

- Baseline value : 0
- Final and annual target values : the target value for 2017 has been established as ‘one’, and the target value for 2018 will be ‘two’; other years will be ‘zero’ as there are three pilots will be undertaken by the project, of which:
 - ✓ The Eco urban house to be completed by June 2017
 - ✓ The Syphon investment to be completed by December 2018
 - ✓ The Cau Ngoi drain to be completed by December 2018

Output indicator 3.2 monitors the progress on the effectiveness of an O&M system for each pilot investment. As required by the project, compliance is considered successful when the following are achieved:

- ✓ An O&M manual including procedures has been prepared
- ✓ Capacity in O&M has been implemented
- ✓ Ownership and responsibilities have been clarified
- ✓ Resources for O&M have been assigned
 - Therefore the Baseline value will be zero, whilst the annual target for 2017 has been established to be ‘one’ (for the Eco urban house of which construction finishes by mid-2017); and for 2019 will be two as the O&M system for the Syphon and Cau Ngoi drain will not be in full operation until 2019 as the construction is expected to finish by December 2018.

Thus the final target is established by the project to be ‘three’.

Output indicator 3.3 measures the lessons learned specifically with regard to the level of innovation of the pilot investments and other aspects of the Project.

- Baseline value : 0
- Final and annual target values: in 2014 and 2015, none of the lessons learned were properly documented. The PCU intends to draw two lessons every year during the remaining of the project (year of 2016, 2017, 2018 and 2019). So the final target values are eight.

Output 4 - The Provincial CC strategy is supported by the active involvement of the communities and private sector

Table 8: Logframe of Output 4

No.	Output - Indicators	Baseline value	Final target value	Annual actual/target values						Unit of measurement	Source of verification	Frequency of data collection	Start - End measurement	Responsible data collection	Responsible consolidation	Other
				2014 - actual	2015 - actual	2016 - target	2017 - target	2018 - target	2019 - target							
0	OUTPUT 4 : The provincial CC strategy is supported by the active involvement of the communities and the private sector.															
4.1	A public CC awareness raising strategy is developed	0	1	0	0	1	0	0	0	No.	Strategy	Once		PCU	PCU	
4.2	A disaster early warning system is developed	0	1	0	0	0	1	0	0	No.	Report	Once		PCU	PCU	
4.3	No. of beneficiaries of newly upgraded CC resilient houses	0	282	0	0	0	138	144	0	No.	Report	Quarterly		PCU	PCU	
4.4	No. of new households participating in CC credit program	0	230	0	0	0	115	115	0	No.	Report	Quarterly		PCU	PCU	
4.5	No. of people participating in newly established committees	0	92	0	0	92	0	0	0	No.	Report	Quarterly		PCU	PCU	
4.6	Sample evidence of attempts to involve communities and/or private sector	0	No target setting required	0	0	No target setting required	No target setting required	No target setting required	No target setting required	Descriptive	Document	Quarterly		PCU	PCU	
4.7	Sample evidence of changed behaviour due to increased awareness	0	No target setting required	0	0	No target setting required	No target setting required	No target setting required	No target setting required	Descriptive	Document	Quarterly		PCU	PCU	
4.8	Effective Pilot of a performance-based service delivery contract between the IMC and the asset owner allocated by	0	100	0	0	20	60	100	0	%	Document	Yearly		PCU	PCU	

No.	Output - Indicators	Baseline value	Final target value	Annual actual/target values						Unit of measurement	Source of verification	Frequency of data collection	Start - End measurements	Responsible data collection	Responsible consolidation	Other
				2014 - actual	2015 - actual	2016 - target	2017 - target	2018 - target	2019 - target							
	the provincial authorities in one area (one or two district) is implemented															
4.9	Effective support to the Water User Associations in one pilot district is completed.	0	100	0	0	20	60	100	0	%	Document	Yearly		PCU	PCU	
4.10	Sample evidence of changed behaviour due to increased awareness on best practices for river health and water use	0	No target setting required	0	0	No target setting required	No target setting required	No target setting required	No target setting required	Descriptive	Document	Quarterly		PCU	PCU	

Outputs 4.1 to 4.4 are more about how households benefit from the project and their “involvement”.

Output indicator 4.1 checks the existence of a public CC awareness raising strategy.

- Baseline value : 0
- Final target value : 1

The PCU aims to finalise this strategy this year.

Output indicator 4.2 checks the completion of the disaster early warning system.

- Baseline value : 0
- Final target value : 1

The PCU aims to complete the development of this system in 2017.

Output indicator 4.3 counts the number of beneficiaries of newly upgraded CC resilient houses and Output indicator 4.4 collects data on new people participating in CC credit program. Output Indicator 4.3 and 4.4 seem to measure the same beneficiaries/people, but Output Indicator 4.3 tracks not only those borrowing loans under the Indicator 4.4, but also others, who borrow money from the non-Project source to upgrade the CC resilient houses. So Output Indicator 4.3 also captures the replication rate of activity under OI 4.4. The project has established that this replication rate is 20% in the first year when this Credit Programme commences, and increases by five percent points every year after that.

As the fund for this Credit Programme is limited, so only allows funding to either 30 households building a new house, or either 85 households to upgrade their houses in a certain point of time (Source: Manual of the Credit Programme).

Output Indicator 4.4:

- Baseline value : 0
- Annual target values : This value is established by the project under an assumption that the Credit Programme provides credit to 30 households building a new house and 85 households to upgrade their houses in each year. During the project’s remaining years the average duration of the one loan is six months and the lending can officially be launched at the beginning of 2017². Thus for 2017 and 2018, the Credit Programme can provide credit to 30 households building a new house and 85 households to upgrade their houses in each year.
- Final target value is established as 230 households.

Output Indicator 4.3: as mentioned before this indicator includes the Indicator 4.4 and its replication effect. Thus:

- Baseline value : 0
- Annual target and Final value: As the annual target values for OI 4.4 are set at 115

² As currently (May 2016) the Manual of the Credit Program has not been approved yet.

each year, the annual target values for OI 4.4 in 2017 and 2018 are established by the project at 138 (=115@120%) and 144 (=115@125%), respectively. Thus the final value, which is a sum of all the project's years, is set at 282.

Output indicator 4.5 informs on people participating in newly established committees

- Baseline value : 0
- Final target value : 92 in 2016

To date, there are two Community Consultation Committees have been set up earlier this year in Ninh Hai district and Phan Rang-Thap Cham city with the number of participants of 23 and 46, respectively. The similar Committee in Ninh Phuoc district is expected to set up later this year with the same size of that in Ninh Hai district. So the annual target values for 2016 is 92, for 2017 and 2018 will be zero, and the final target will be 92.

Output indicator 4.6 records sample evidence of attempts to involve communities and/or private sector.

First, in order to measure this Indicator, 'communities' here are understood as any non-state organisation at the village and commune levels; and 'involvement' here should include the three following dimensions:

- ✓ The communities and/or private sectors implement any project's activities;
- ✓ The communities and/or private sectors are the intended recipients of the project's information; and,
- ✓ The communities and/or private sectors are the direct beneficiaries of any of the project's interventions

The values of the Indicator are established by the Project as follows:

- Baseline value: zero.
- Final and annual target values: not required as only a description of samples needs to be produced at each occasion.

Output indicator 4.7 collects sample evidence or examples of changed behaviour due to increased CC awareness. The 'changed behaviour' in this Indicator is understood as adaptive 'behaviour' only (i.e.: not including mitigation 'behaviour'). Example for the adaptive 'changed behaviour' in this case is local people consume less water due to water shortage; local farmers used more efficient methods of irrigation etc.

The values of the Indicator are established by the Project as follows:

- Baseline value: zero.
- Final and annual target values: they are not required as only a description of samples are required to provide at each occasion.

Output indicator 4.8 monitors progress towards strengthening systems and capacity in the IMC for assessment management and financial planning for O&M of the irrigation network. Progress is measured in terms of completion of key milestones in accordance with the following table.

Sub-activities completed	Indicator value (%)
Activity inception, including: assessment of status of IMCs existing financial planning and asset management systems; consultation with stakeholders; identification of target district(s); preparation of activity implementation plan	20%
Develop system and resource materials for cataloguing and inspection of irrigation assets, including evaluation of current condition and maintenance requirements. Conduct initial training and field demonstration of methodology.	40%
Complete appraisal report on overall condition of each target irrigation system, including assessment of overall operability, vulnerabilities and effectiveness	60%
Complete O&M plan for target systems including assessment of backlog, routine and periodic maintenance requirements. Conduct training and technology transfer	80%
Integrate O&M plans from various systems to develop a financial plan for the District (or target area). Consult with stakeholders and prepare road map for performance-based Service Delivery Contract	100%

- Baseline value: 0.
- Annual target completion rates for 2016 and 2017 are set at 20% and 60% respectively
- Final target value: 100% in 2018.

Output indicator 4.9 monitors progress towards PIM implementation and capacity strengthening for water user associations. Progress is measured in terms of completion of key milestones in accordance with the following table.

Sub-activities completed	Indicator value (%)
Activity inception, including: consultation with stakeholders; identification of target district(s) and irrigation systems; assessment of status of PIM implementation; assessment of functionality and needs of WUAs in target area; assessment of existing tools and materials for financial planning and asset management; preparation of activity implementation plan	20%
Develop or update systems and resource materials for capacity building for WUAs. Conduct initial training and field demonstration of methodology, including field inspections and evaluation.	40%
For target irrigation schemes, establish Council to fully delineate responsibilities for different levels of the irrigation system. Conduct training of trainers and implement pilot activities for cataloguing and inspecting system assets.	60%

Sub-activities completed	Indicator value (%)
Complete O&M plan for target systems including assessment of backlog, routine and periodic maintenance requirements. Conduct training and technology transfer	80%
Integrate O&M plans from various systems to develop a financial plan for the WUAs in the target area. Prepare road map for on-going PIM implementation and integration in SEDP.	100%

- Baseline value: 0.
- Annual target completion rates for 2016 and 2017 are set at 20% and 60% respectively
- Final target value: 100% in 2018.

Output indicator 4.10 collects sample evidence or examples of changed behaviour due to increased awareness on best practices for river health and water use.

The values of the Indicator are established by the Project as follows:

- Baseline value: zero.
- Final and annual target values: they are not required as only a description of samples are required to provide at each occasion.

Outcome level

Table 9: Logframe of Outcome

No.	Outcome - Indicators	Baseline value	Final target value	Annual actual/target values						Unit of measurement	Source of verification	Frequency of data collection	Start - End measurements	Responsible data collection	Responsible consolidation	Other
				2014 - actual	2015 - actual	2016 - target	2017 - target	2018 - target	2019 - target							
OC	OUTCOME : To support the institutional capacity in Ninh Thuan Province in integrated water resources management and urban development in relation to CC.															
OC 1	Number of documents issued which address CC	4	89	9	4	12	16	21	27	No.	Survey	Yearly		PCU	PCU	
OC 2	Number of trained stakeholders or trained staff who contribute newly acquired CC knowledge to decision-making processes	0	381	0	0	131	120	130	0	No.	Survey	Yearly		PCU	PCU	
OC 3	% of provincial budget is invested in activities related to CC	15.4%	18.2%	19.4%	15.4%	16.9%	18.6%	20.5%	22.5%	%	Activity completion report	Yearly		PCU	PCU	
OC 4	Measurable increase in institutional capacity with respect to assessment criteria from the TICA	First TICA provided the baseline value	No target setting required	n/a	n/a	No target setting required	No target setting required	No target setting required	No target setting required	Descriptive	TICA Survey	Twice		PCU/Consultant	PCU	

There are four outcome indicators. Most are easy to measure – given definitions. OC1 and OC3 should be time series data back to 2014. OC2 implies a tracer survey of trainees. That is probably best added to the project impact evaluation ToR. During project implementation it is more important to get immediate post-training feedback about course content and relevance (to make improvements year-by-year). All post-training questionnaires could ask, for example: “give one example of how this course could be improved to be more relevant to your work”.

Outcome indicator OC 1 measures ‘the number of documents issued which address CC problems referring to the planning and management responsibilities of the provincial authorities. To make it clear to the ‘CC problems’ definition in this Indicator, the ‘CC problems’ must be included in the main body of the document. And for this Indicator, Research Papers/Works are also included. The documents should be issued/developed by the authorities who have benefited from the capacity building activities under the Project such as DARD, DONRE, DOC, Districts, etc. The ‘documents’ also include legal Decrees, Circulars etc.

- Baseline value: as explained before, as the Baseline Survey is undertaken in 2016, so the Baseline value will be proxied by the actual number of documents issued which address CC problems referring to the planning and management responsibilities of the provincial authorities in 2015. The target values for 2014 and 2015 are also the actual number of **documents issued** which address CC problems referring to the planning and management responsibilities of the provincial authorities in these two years. The actual number of documents issued in 2014 and 2015 were 9 and 4, which were obtained after consultation with nineteen representatives from the province’s authorities³.
- Final and annual target values: to be determined, but for now we propose an average annual increase of 30% on baseline number of 2014. This target can be reviewed and, ideally, increased depending upon initial years of results.

Outcome indicator OC 2 refers to ‘the number of trained stakeholders or trained staff who contribute this newly acquired CC knowledge to decision-making processes.’

- Baseline value: the value of the Baseline for this indicator should be zero as at the very beginning of the project, no training activities were undertaken by the Project.
- Final and annual target values: to provide an estimate of the annual targets for the remaining years of the project, the Consultant proposes that for 2016, 2017 and 2018, the proportion of those receiving capacity building in Output 1.1 and contribute this newly acquired CC knowledge to decision making process is proposed to be 30%, 40% and 50%, respectively. Thus, the annual targets for these three years are proposed as below:

³ Similar to the measure of Indicator I1, these figures seem to be underreported as during our interviews with them, it seems that the interviewees were not able to recall all of the number of document issues that addressed during these two years by the authorities. Some agencies did not send the very high ranking officer, who must have been able to provide a more precise answers, to our interview. We would recommend that instead of conducting fact-finding survey to collect these figures for the remaining years of the project cycle, the project should send an Official Letter to the Heads of these relevant agencies to ask specifically about the number of these issued document.

Table 10: Annual Targets for 2016-2018 of Outcome Indicator OC 2

Year	Output Indicator 1.1 "Number of people receiving capacity building (*)"	Outcome Indicator OC 2 "the number of trained stakeholders or trained staff who contribute this newly acquired CC knowledge to decision-making processes"
2016	435	131
2017	300	120
2018	260	130
Source:	South East Asia Institute for Water Resources and Environment (SAIWRE), TICA Report (Draft 2), 01/2015 (page 8)	

Outcome indicator OC 3 measures the proportion of annual investment budget of the Province (including concerned Districts and Communes) containing indications and/or actions responding to climate change compared to the total annual investment budget.” ‘.

- Baseline value: based on the list of all the investment works with budgeted funds, the Consultant has computed in Table 12 below the proportion of those investment works responding to CC compared to the total annual investment budget of the province⁴. The share in 2014 and 2015 were 19.4% and 15.9%. The Baseline value in this case is established as the actual value of 2015, which is at 15.4%.
- Final and annual target values: The project establishes an increase of 10% every year for this share. It leads to the final target expected to be 22.5% (as it equals to the 2019 target value).

Table 11: Proportion of those investment works responding to CC compared to the total annual investment budget of the province, 2014 and 2015.

Unit: Million VND

No	Sectors	Responding to CC significantly	2014	2015
1	Agriculture (including reservoirs, irrigation channels, anti land erosion, clean water support, other livelihood support)	Yes	298,894	239,095
2	Transport (build new or upgrade roads)	No	1,050,700	1,055,937
3	Health care (build new or upgrade clinics/hospitals)	No	97,314	99,486
4	Other sectors (mainly building new/upgrading offices of various government agencies and schools)	No	93,697	104,777
	Total		1,540,605	1,499,295
	Share of the budgeted values of all investment works responding to CC significantly		19.4%	15.9%

Source: DPI (through the PCU)

⁴ Due to data unavailability, this list includes only those that are invested by the Provincial level investors. However it does include funding from both State budget and ODA sources.

Outcome indicator OC 4 measures the increase in institutional capacity with respect to assessment criteria from the TICA. The first TICA did not really provide explicit OC4 assessment criteria, beyond recording the highest education level of 351 government staff.

- Baseline value: The Baseline Value has been measured by TICA as summarised in the Box 1 below:
- Final and annual target values: to be determined by end-of-project TICA's findings. The project will prepare an estimated budget to undertake an end-term TICA update as the end-term TICA update may imply significant resources.

Box 1: Baseline Value of OC4 as measured by the first TICA

351 relevant staff in the province have been measured the educational level and area of expertise of individuals and are defined capacity development requirements. Details are in Table 4 (page 42) of the TICA Report. These 351 staff come from the following nine agencies in the province:

1	Steering committee for coordination of IWRM of Ninh Thuan
2	DONRE
3	Sub Department of Irrigation (DARD)
4	DOC
5	DOT
6	DOIT
7	One Member Limited Company for Irrigation exploitation
8	DOH
9	Water Supply Stock Company

Training and capacity building needs

According to the survey results of human resource and training needs and capacity building on water resource management issues and urban planning, it was found that there is a significant high need for capacity building of government staff of different agencies. Long term training need (post-graduate, master, Doctor) is not a priority.

Expertise skills required by agencies and departments for the capacity building program needs to focus on 3 fields: water resources, including water resources and IWRM; integrated river basin management; using hydrology-hydraulic software; using MODFLOW program to assess groundwater; using ArcGis software; 2) urban planning, including wastewater and urban drainage and 3) climate change including climate change and adaptation to climate change; IWRM in climate change context.

Objectives for capacity building on water resource management, urban planning and climate change include the following:

- 1) Water is essential for life. State management agencies and enterprise (state, non-state) should have profound knowledge on water resources and IWRM approach on river basin in order to make prudent decisions to ensure sustainable socio-economic development. The human resource has to obtain necessary capacity to adapt to the ever depleted natural resources and decrease of financial sources (due to impacts and consequences of economic crisis); they should be able to produce solutions to enhance development opportunities in the rapidly changing world

of technology generations and compete with strong economies in the region.

2) Sustainable urban development should be compatible with river basin conditions, ensuring sustainable urban development and urban management and as a result proper realization of 2 concepts “Sustainable urban development” and “Urban development management”. With proper recognition of these two concepts, Ninh Thuan will manage urban areas in a scientific and proper manner compatible with natural, socio-economic and cultural conditions of each urban area and with different development period and based on respective technical and scientific development level. As a result, the urban area are sustainably managed.

3) Water resource management and development, and sustainable urban management in the climate change context: policy makers, local management officials and communities should have adequate knowledge and awareness on climate change and response activities so that they can make proper decisions and contribute to climate change action plan of the province.

Based on survey results and comprehensive evaluation of water resource management institutional structure and urban planning and development in climate change context,

Results from the survey indicate that the educational level of human resource in Ninh Thuan in above mentioned fields is rather high (graduate and post-graduates), management officials of departments and agencies are all graduates or higher. However the ratio of post-graduates is still low. State management agencies on water resources and urban development should have more staff with deeper expertise to support their consultation and design making support. Departments (Steering committee for IWRM of the province, DONRE, DARD, DOC, DOT, DOIT, IMCS, Ninh Thuan Water Supply Company) should build capacity of their officials through long term training program (master program) and capable staff who have a need can be supported and encourage to participate in Ph.D training program.

Source: TICA Report, 2016.

For the impact evaluation, the following elements can be added to O4 to strengthen the impact evaluation. For instance, to measure changes in “Capacities”. “Capacities” in this sense include both technical (e.g. the number of staff who actually use a new software), and conceptual (raised awareness). Consequently, the above proposed tracer survey can also provide the data for this outcome – probing how awareness has changed, or how technical skills are actually applied, etc. A set of case studies could compliment the survey. One case study approach is to “work backwards” from what seems like a project result (e.g. a key Decision passed by the PPC), interview persons involved in making it happen and then connect that to project activities (sometimes called an “innovation history”).

Table 12: Logframe of Impact

No.	Impact - Indicators	Baseline value	Final target value	Annual actual/target values						Unit of measurement	Source of verification	Frequency of data collection	Start - End measurements	Responsible data collection	Responsible consolidation	Other
				2014 - actual	2015 - actual	2016 - target	2017 - target	2018 - target	2019 - target							
I	IMPACT : To contribute to the sustainable development of Ninh Thuan															
I 1	Number of CC actions conducted as a consequence of PPC decisions	3	51	3	3	8	10	12	15	No.	Fact-finding survey/Send Official Letter to the Head of the Agency	Yearly		PCU	PCU	
I 2	Sample evidence of increased resilience of sectors	n.a.	n.a.	n.a.						n.a.	Fact-finding survey	Yearly		PCU	PCU	

There are two impact measures. The first is the count the number of Climate Change (CC) actions coming from Provincial People’s Committee (PPC) Decisions. To obtain the figures for 2014 and 2015, the project, with the assistance from the Baseline Consultant, has interviewed nineteen representatives from various Government agencies in the province. The results of the interviews show that in each of these two years, there were only 3 CC actions conducted each year as a consequence of PPC decisions⁵. The project has established the estimated target values annually for the years of 2016, 2017 and 2018 to be 8, 10 and 15, respectively.

The second impact indicator would have to be collected through fact-finding survey on annual basis. This indicator is assigned its measurement to unspecified qualitative examples 6 so the values for baseline, annual targets and final target are not applicable. The ‘resilience’ in this Indicator is understood as having adaptive, but not mitigation, nature.

⁵ These figures seem to be underreported as during the interviews with them, it seems that the interviewees were not able to recall all of the CC actions that were conducted during these two years. Some interviewees promised to provide supplemental information after the meeting but they were not able to do so given their busy regular workload.(even after follow-up phone calls were made). The lesson learnt from this effort is that by end of this year (and of subsequent years), the project should send an Official Letter to the Heads of these relevant agencies to ask specifically about the number of these CC actions. This approach might be more effective in obtaining a more precise figure than conducting a fact-finding survey.

⁶ As this indicator is assigned its measurement to unspecified qualitative examples, more thought might be needed for a complex Impact Evaluation to be carried out later on. This should ideally be based on a detailed Theory of Change. What is the IMPACT of having a comprehensive strategy and strengthened capacities? How does that impact differ across sectors? In the agriculture sector, for example, is there DARD/BARD data about crop losses due to climate shocks, or about increased crop diversification? If so, then those are good proxy measures about the impact of increased resilience. Secondary data about the 2010 floods in Ninh Thuan should be collected for comparison with any future similar event (presently a drought in 2015-2016). Available data might include numbers of homes lost, numbers of homes flooded, numbers of water-borne diseases recorded, cost to repair damaged infrastructure, etc. The ultimate beneficiaries are households in the target areas. We would therefore expect a marginal increase in their ability to cope with (“resilience to”) climate shocks and stresses. A definition of household “resilience” is needed (see DFID BRACED project website). For this project at least, we could add an expected increase in project area household “socio-economic living status” – which is already an objective of the baseline survey to measure. Secondary data about the nature and impact of climate shocks should also be collected.

3.3 Risk Management Plan

Nine major risks are presented the table below. These should be a first group that can be "Core Project Risks". All others become: "Other project risks" as presented in Annex 3. Edits are made mostly to the mitigation measures: added some new ones, dropped a few, but mostly edited them into clear and positive bullet-point action statements with detailed responsibilities of departments and units. Also "should" and "maybe" are replaced with "will", etc.

Table 13: Core risks and actions

Risk Identification			Risk Analysis			Risk Treatment		
Description of Risk	Period of identification	Risk Category	Probability	Potential Impact	Total	Action (s)	Resp.	Deadline
Existing data not accurate, up-to-date and/or made available (As the project is highly related to the availability of data, importance of the access to reliable data and exchange of information should be stressed. The BTC/MoNRE CAPAS Program could be a reference.)	2014	Implementation	Medium	Medium	Medium	• Ensure that the curriculum of relevant capacity building of departmental technical staff covers this data access/quality issue.	PCU	
						• Obtain (signed) agreement from all related ministries to share all the needed data at from the start of the project.	PCU	
						• Ensure that experience from CAPAS project is shared to relevant stakeholders.	PCU	
No approval of the revised MP and the detailed design of the investment project in each province. (The spatial plan and infrastructure works designed by the project aim at integrating CC issues, which are still not integrated within existing Vietnam design standards and construction norms. They may therefore be in contraction, causing their non approval by MoC.)	2014	Implementation	Medium	High	High	• Technical Ministries shall (formally and explicitly) approve the project objective of integrating CC in the urban planning procedure, and therefore accept the principle of not following strictly the present standards and norms.	TSU	
						• Set up a Technical Advisory Committee under MPI to facilitate the resolution of such issues between ministries and ODA representatives.	TSU	
Poor coordination between sectors, stakeholders involved and limited public participation in planning process (Single sector approach and limitation of multi-sector coordination.)	2014	Implementation	Medium	High	High	• Ensure that planning and implementation are clear, detailed and represent the role of each sector and involve all stakeholders with clear responsibilities.	PCU & TSU	
Overlap among different sector plans	2014	Implementation	Medium	High	High	• Ensure clear mechanisms to mobilize the involvement of all sectors in every step of the process of planning and implementation.	PCU & TSU	

Risk Identification			Risk Analysis			Risk Treatment		
Description of Risk	Period of identification	Risk Category	Probability	Potential Impact	Total	Action (s)	Resp.	Deadline
						<ul style="list-style-type: none"> Commission studies on new methods of planning towards integrated multi-sector planning which is spatially unified. 	PCU & TSU	
Limited interest for environmental and awareness raising issues and innovative alternatives (The necessity for society to adopt a more Climate proof friendly behaviour as well as interest in alternative approaches may go in contradiction with construction standards)	2014	Management	Medium	Medium	Medium	<ul style="list-style-type: none"> Commission studies on new methods of planning towards integrated multi-sector planning which is spatially unified. 	TSU & PCU	
						<ul style="list-style-type: none"> Environmental issues will be highlighted to decision makers, exposing them to alternative solutions concerning technical issues and O & M modalities. 	TSU & PCU	
						<ul style="list-style-type: none"> Networking within Vietnam will bring new ideas up-front. 	TSU & PCU	
Low impact of the awareness campaigns (Current annual one-shot awareness activities do not change the local habits of the population)	2014	Effectiveness	Medium	Medium	Medium	<ul style="list-style-type: none"> Ensure support and the involvement of the TSU and consultants. 	PCU & TSU	
						<ul style="list-style-type: none"> Learn from nationwide best practice. 	PCU & TSU	
						<ul style="list-style-type: none"> IEC activities, coordinated by the PCU, will be well-prepared to enhance effectiveness. 	PCU & TSU	
Reluctance of the PPC to fully consider regional concepts and planning of urban infrastructure development for the greater Phan Rang area (Revised Master plans of both cities might not fit with overall planning of the province)	2014	Effectiveness	Medium	Medium	Medium	<ul style="list-style-type: none"> PM revision will be approached as an on-the-job training activity with relevant authorities to raise their awareness and hence support. 	TSU & PCU	
						<ul style="list-style-type: none"> Close coordination with different agencies should mitigate the risk. 	TSU & PCU	
No long-term application of the awareness activities (Preparation of the long-term awareness strategy and programs must be undertaken in participatory manner and developed by the agency that will implement the strategy / programs to ensure ownership)	2014	Sustainability	Medium	Medium	Medium	<ul style="list-style-type: none"> The long-term strategy and guidelines and the training conducted should ensure the technical sustainability of the intervention. 	PCU	
						<ul style="list-style-type: none"> Electronic outputs will be publically uploaded for subsequent reuse and viewing. 	PCU	
DoNRE and DARD not willing to adopt improved practices for managing water resources on a Province wide basis (Roles and responsibilities of the two agencies needs to be clarified at early stage in project)	2014	Sustainability	Medium	High	High	<ul style="list-style-type: none"> Undertake orientation awareness raising workshops at an early stage of the project. 	PCU & PSC	
						<ul style="list-style-type: none"> Assist local agencies to develop their own management policies and practices to ensure ownership. 	PCU & PSC	

3.4 Operational Planning

As mentioned above, three new activities related to the additional budget, including one activity under Output 2, and two under Output 4, have been included in the revised TFF. However, these activities have not yet been included in the current Operational Plan. The PCU should integrate these additional activities for monitoring progress when required.

The Operational Plan could be made a bit clearer by noting “milestone” activities (i.e. something that happens in a particular month). For example, the planned and actual date of a regulation passed, a tender awarded, or when the Technical Advisory Committee is established. The Operational Plan should also specify months where annual reviews will take place, which should be linked to producing M&E reports.

This report is a Baseline Report. As such, the research has not yet impacted the operational planning for the project (which is anyway well advanced). What we expect, however, is that the Baseline research and subsequent changes will strengthen the logframe, lead to fewer missing data in that logframe, and provide guidance for training courses (given information from the satisfaction survey).

3.5 Follow-up Mechanisms

The M&E system requires a systematic reporting of data, ideally preparing analytical reports for key meetings to review (e.g. the Steering Committee). Annex 2 shows the full logframe for the project, in which there is a column: “Frequency of data collection”. From this we can see that, while Quarterly Results Reports should be produced, these would be quite modest and present hard data only for 8 indicators (about training: 1.1 and 1.2; and about “active involvement by communities and people”: 4.3 to 4.7, and 4.10). Quarterly reports should, however, include descriptive text about recent progress towards all annual and end-project results. Where there is no progress to report with respect to a result that should be made clear.

The main M&E report is therefore annual. This is because outputs 1 to 3 are mainly about long-term results (e.g. develop strategies, complete pilot activities, etc.), or depend on surveys that should not be quarterly (e.g. satisfaction survey). Participation by communities and people, however, is something to monitor more closely and quarterly.

The annual report can continue to follow the template used for 2015, which is clear and comprehensive. One addition, however, would be a graphic that shows implementation progress of most activities against the original Operational Plan. Missed targets would be marked in red, with new target dates made clear. Text would then explain why there were delays (as in 2015 Results Report). Another change is that the 2016 report needs to focus on what was achieved that year, as well as overall progress to date.

The M&E system would be strengthened by developing an M&E Manual for the project. This manual would specify all reporting forms, who is responsible for filling in forms, who delivers this data, and then who consolidates and reports on findings. Clarification of M&E roles and responsibilities will improve detailed implementation in reality.

To support the above M&E system development, it is recommended by the Baseline Consultant that the project fund relevant staff to attend M&E training events/courses. A fund of maybe

\$5,000 should be allocated specifically for PSU staff M&E training activities. How it can be best spent can then be decided by the PCU Director. We would suggest a formal 5-day training event delivered in Ninh Thuan, followed by on-going mentoring.

In terms of results, the MTR of the project should focus on qualitative research that gathers data for the more complex and qualitative output objectives. Thus clear and easily measured indicators (e.g. satisfaction survey) are well covered in annual reports. What indicators to focus on during the MTR, and advice about this are listed in the Table below.

Table 14: Indicators to focus on during the MTR

Indicators	Final target value	Unit of measurement	Source of verification	Frequency of data collection	MRT analysis questions and tasks
IMPACT : To contribute to the sustainable development of Ninh Thuan					
Number of CC actions conducted as a consequence of PPC decisions	51	No.	Fact-finding survey/Send Official Letter to Head of Agency	Yearly	
Sample evidence of increased resilience of sectors	n.a.	n.a.	Fact-finding survey	Yearly	
OUTCOME : To support the institutional capacity in Ninh Thuan Province in integrated water resources management and urban development in relation to CC.					
% of provincial budget is invested in activities related to CC	18.20%	%	Activity completion report	Yearly	
Measurable increase in institutional capacity with respect to assessment criteria from the TICA	No target setting required	Descriptive	TICA Survey	Twice	Collect quantitative evidence about such capacity increase
OUTPUT 1 : The capacity of the authorities of the province in terms of CC, Integrated Water Resources Management and Urban Planning are improved with appropriate M&E mechanisms in place.					
Appropriate equipment and software systems are in place	8	System	Concerned organizations	Yearly	Review system changes and their impacts
OUTPUT 2 : A comprehensive strategy on CC is in place					
Master plans (provincial, cities/town) revised with regard to CC	1	No.	Master Plans	Yearly	What precisely has been changed in such plans?
A reservoir management system for integrated operating rules to seek a balance between optimising water availability and reduce wet season flood risk is developed and implemented	1	No.	Work completion report	Yearly	Is this system change happening? Will it result in "balance"?
OUTPUT 4 : The provincial CC strategy is supported by the active involvement of the communities and the private sector.					
A public CC awareness raising strategy is developed	1	No.	Strategy	Once	Review content and implementation of this strategy. Collect evidence of impact
A disaster early warning system is developed	1	No.	Report	Once	Review progress on this and probably impact
No. of people participating in newly established committees	92	No.	Report	Quarterly	Research the nature of such "participator" by gender too
Sample evidence of attempts to involve communities and/or private sector	No target setting required	Descriptive	Document	Quarterly	Collect pilot sample evidence and feedback about involvement
Sample evidence of changed behaviour due to increased awareness	No target setting required	Descriptive	Document	Quarterly	Collect case studies of behaviour change
Effective Pilot of a performance-based service delivery contract between the IMC and the asset owner allocated by the provincial authorities in one area (one or two district) is implemented	1	No.	Document	Yearly	Review progress on this and any impacts
Effective support to the Water User Associations in one pilot district is completed.	0	No.	Document	Yearly	Describe and evaluate support given
Sample evidence of changed behaviour due to increased awareness on best practices for river health and water use	No target setting required	Descriptive	Document	Quarterly	Collect case studies of changed behaviour

4. Annexes

Annex 1: Baseline workplan

Completion in week of:	Key Activities to be carried out	Responsible person/unit
14-12-2015	Draft monitoring matrix as jointly agreed, incl. explanation on dropped indicators Draft Baseline Work Plan	Consultant/facilitator of the workshop
04-01-2016	Final draft of Baseline Work Plan and monitoring matrix	BTC & TSU support
11-01-2016	Involvement Project Directors – Validation of Baseline Work Plan	BTC
15-04-2016	Design Survey for Output 1	PCU (consultants), TSU support & coordination
22-04-2016	Establish baseline, final and annual target values	PCU (consultants)
20-05-2016	Draft Baseline Report	PCU (consultants), TSU support, BTC revision
27-05-2016	Produce the final Baseline Report	PCU (consultants)
31-5-2016	Present the Baseline Report to PSC for approval	PCU

Annex 2: Project logframe

No.	Indicators	Baseline value	Final target value	Annual actual/target values						Unit of measurement	Source of verification	Frequency of data collection	Start - End measurements	Responsible data collection	Responsible consolidation	Other
				2014 - actual	2015 - actual	2016 - target	2017 - target	2018 - target	2019 - target							
I	IMPACT : To contribute to the sustainable development of Ninh Thuan															
I 1	Number of CC actions conducted as a consequence of PPC decisions	3	51	3	3	8	10	12	15	No.	Fact-finding survey/Send Official Letter to the Head of the Agency	Yearly		PCU	PCU	
I 2	Sample evidence of increased resilience of sectors	n.a.	n.a.	n.a.						n.a.	Fact-finding survey	Yearly		PCU	PCU	
OC	OUTCOME : To support the institutional capacity in Ninh Thuan Province in integrated water resources management and urban development in relation to CC.															
OC 1	Number of documents issued which address CC	4	89	9	4	12	16	21	27	No.	Survey	Yearly		PCU	PCU	
OC 2	Number of trained stakeholders or trained staff who contribute newly acquired CC knowledge to decision-making processes	0	381	0	0	131	120	130	0	No.	Survey	Yearly		PCU	PCU	
OC 3	% of provincial budget is invested in activities related to CC	15.4%	18.2%	19.4%	15.4%	16.9%	18.6%	20.5%	22.5%	%	Activity completion report	Yearly		PCU	PCU	

No.	Indicators	Baseline value	Final target value	Annual actual/target values						Unit of measurement	Source of verification	Frequency of data collection	Start - End measurements	Responsible data collection	Responsible consolidation	Other
				2014 - actual	2015 - actual	2016 - target	2017 - target	2018 - target	2019 - target							
OC 4	Measurable increase in institutional capacity with respect to assessment criteria from the TICA	First TICA provided the baseline value	No target setting required	n/a	n/a	No target setting required	No target setting required	No target setting required	No target setting required	Descriptive	TICA Survey	Twice		PCU/Consultant	PCU	
0	OUTPUT 1 : The capacity of the authorities of the province in terms of CC, Integrated Water Resources Management and Urban Planning are improved with appropriate M&E mechanisms in place.															
1.1	Number training participants trained on climate change, integrated water resource management and/or urban development	0	1132	137	0	435	300	260	0		Training reports	Per training, Quarterly overview		Trainer (PCU ensures)	PCU	
1.2	Average change in scores on entry and exit tests	n/a	25%	n/a	n/a	10%	15%	20%	25%	%	results integrated in training reports	Per training, Quarterly overview		Trainer (PCU ensures)	PCU	using a self-assessment tool
1.3	Appropriate equipment and software systems are in place	0	11	0	0	1	9	1	0	System	Concerned organizations	Yearly		PCU	PCU	
1.4	Responsiveness of data (CC-IWRM & UD) management system to the	0	80%	n/a	59%	65%	70%	75%	80%	%	Satisfaction survey	Yearly		PCU	PCU	TSU contribution

No.	Indicators	Baseline value	Final target value	Annual actual/target values						Unit of measurement	Source of verification	Frequency of data collection	Start - End measurements	Responsible data collection	Responsible consolidation	Other
				2014 - actual	2015 - actual	2016 - target	2017 - target	2018 - target	2019 - target							
	provincial users															
1.5	Coordination and communication mechanism responds to the knowledge management need of the provincial authorities	0	90%	n/a	71%	75%	80%	85%	90%	%	Satisfaction survey	Yearly		PCU	PCU	TSU contribution
1.6	New and relevant information is available from the expanded hydrological & meteorological monitoring network	0	80%	0	0	50%	60%	70%	80%	%	Satisfaction survey	Yearly		PCU	PCU	TSU contribution
0	OUTPUT 2 : A comprehensive strategy on CC is in place															
2.1	No. of conducted research	0	4	0	0	1	3	0	0	No.	Study reports	Yearly		PCU	PCU	
2.2	A CC adaptation action plan is approved	0	1	0	0	0	1	0	0	No.	Action Plans	Once		PCU	PCU	
2.3	Master plans (provincial, cities/town) revised with regard to CC	0	1	0	0	0	1	0	0	No.	Master Plans	Yearly		PCU	PCU	
2.4	Prioritised proposals on CC	0	tbc	0	0	0	tbc	tbc	tbc	No.	Proposals	Yearly		PCU	PCU	

No.	Indicators	Baseline value	Final target value	Annual actual/target values						Unit of measurement	Source of verification	Frequency of data collection	Start - End measurements	Responsible data collection	Responsible consolidation	Other
				2014 - actual	2015 - actual	2016 - target	2017 - target	2018 - target	2019 - target							
	are developed															
2.5	A Study on River basin water resource assessment with consideration of climate change is completed	0	1	0	0	0	1	0	0	No.	Work completion report	Yearly		PCU	PCU	
2.6	A reservoir management system for integrated operating rules to seek a balance between optimising water availability and reduce wet season flood risk is developed and implemented	0	1	0	0	0	0	1	0	No.	Work completion report	Yearly		PCU	PCU	
0	OUTPUT 3 : Priority strategic pilot activities are developed for lessons learned															
3.1	No of (pilot) investments implemented, complying with CC adaptation specifications	0	3	0	0	0	1	2	0	No.	Work completion report	Yearly		PCU	PCU	
3.2	Effective O&M is implemented for each priority investment	0	3	0	0	0	0	1	2	No.	Document	Yearly		PCU	PCU	

No.	Indicators	Baseline value	Final target value	Annual actual/target values						Unit of measurement	Source of verification	Frequency of data collection	Start - End measurements	Responsible data collection	Responsible consolidation	Other
				2014 - actual	2015 - actual	2016 - target	2017 - target	2018 - target	2019 - target							
3.3	No. of lessons-learned documents prepared on innovative features of the priority investments and of other aspects of the Project	0	8	0	0	2	2	2	2	No.	Publications	Yearly		PCU	PCU in collaboration with TSU	Specifically meant to keep track of level of innovation
3.4	No. of new households benefiting from pilot activities	0	1,165,914	0	0	0	590,000	575,914	0	No.	PCU reports	Yearly		PCU	PCU	Province specific
0	OUTPUT 4 : The provincial CC strategy is supported by the active involvement of the communities and the private sector.															
4.1	A public CC awareness raising strategy is developed	0	1	0	0	1	0	0	0	No.	Strategy	Once		PCU	PCU	
4.2	A disaster early warning system is developed	0	1	0	0	0	1	0	0	No.	Report	Once		PCU	PCU	
4.3	No. of beneficiaries of newly upgraded CC resilient houses	0	282	0	0	0	138	144	0	No.	Report	Quarterly		PCU	PCU	
4.4	No. of new households participating in CC credit program	0	230	0	0	0	115	115	0	No.	Report	Quarterly		PCU	PCU	

No.	Indicators	Baseline value	Final target value	Annual actual/target values						Unit of measurement	Source of verification	Frequency of data collection	Start - End measurements	Responsible data collection	Responsible consolidation	Other
				2014 - actual	2015 - actual	2016 - target	2017 - target	2018 - target	2019 - target							
4.5	No. of people participating in newly established committees	0	92	0	0	92	0	0	0	No.	Report	Quarterly		PCU	PCU	
4.6	Sample evidence of attempts to involve communities and/or private sector	0	No target setting required	0	0	No target setting required	No target setting required	No target setting required	No target setting required	Descriptive	Document	Quarterly		PCU	PCU	
4.7	Sample evidence of changed behaviour due to increased awareness	0	No target setting required	0	0	No target setting required	No target setting required	No target setting required	No target setting required	Descriptive	Document	Quarterly		PCU	PCU	
4.8	Effective Pilot of a performance-based service delivery contract between the IMC and the asset owner allocated by the provincial authorities in one area (one or two district) is implemented	0	100	0	0	20	60	100	0	%	Document	Yearly		PCU	PCU	
4.9	Effective support to the Water User Associations in one pilot district is completed.	0	100	0	0	20	60	100	0	%	Document	Yearly		PCU	PCU	

No.	Indicators	Baseline value	Final target value	Annual actual/target values						Unit of measurement	Source of verification	Frequency of data collection	Start - End measurements	Responsible data collection	Responsible consolidation	Other
				2014 - actual	2015 - actual	2016 - target	2017 - target	2018 - target	2019 - target							
4.10	Sample evidence of changed behaviour due to increased awareness on best practices for river health and water use	0	No target setting required	0	0	No target setting required	No target setting required	No target setting required	No target setting required	Descriptive	Document	Quarterly		PCU	PCU	

Annex 3: Comments on existing risk matrix

Risk identification			Risk Analysis			Risk Treatment		
Description of Risk	Period of identification	Risk Category	Probability	Potential impact	Total	Action(s)	Resp.	Deadline
Existing data not accurate, up-to-date and/or made available	2014	Implementation	Medium	Medium	Medium	<ul style="list-style-type: none"> Ensure that the curriculum of relevant capacity building of departmental technical staff covers this data access/quality issue. 	PCU	
						<ul style="list-style-type: none"> Obtain (signed) agreement from all related ministries to share all the needed data at from the start of the project. 	PCU	
						<ul style="list-style-type: none"> Ensure that experience from CAPAS project is shared to relevant stakeholders. 	PCU	
<i>Disagreement on parameters, standards, technology, methodology related to the assessments</i>	2014	Implementation	Medium	High	High	<ul style="list-style-type: none"> TSU should ensure exposure to good international and national practice. 	TSU & PCU	
						<ul style="list-style-type: none"> Consultants should guide consensus on such matters with local authorities. 	TSU & PCU	
No approval of the revised MP and the detailed design of the investment project in the province.	2014	Implementation	Medium	High	High	<ul style="list-style-type: none"> Technical Ministries shall (formally and explicitly) approve the project objective of integrating CC in the urban planning procedure, and therefore accept the principle of not following strictly the present standards and norms. 	TSU	
						<ul style="list-style-type: none"> Set up a Technical Advisory Committee under MPI to facilitate the resolution of such issues between ministries and ODA representatives. 	TSU	
<i>Chances to introduce new concepts reduced</i>	2014	Implementation	Medium	Medium	Medium	<ul style="list-style-type: none"> By carefully monitoring of the project and by retaining the right of no objection at key stages in the approval process, BTC could deploy technical assistance of the TSU in a strategic manner and positively influence the project and develop appropriate E&M tool such as the MET software from CAPAS Ensure that pilot activity lessons learned and other documents address problems relating to fixed standards, cost norms, and designs. 	BTC	

Risk identification			Risk Analysis			Risk Treatment		
Description of Risk	Period of identification	Risk Category	Probability	Potential impact	Total	Action(s)	Resp.	Deadline
<i>Legal basis and regulations on construction planning and urban planning not consistent</i>	2014	Implementation	Medium	High	High	• Review for amendment of all legal documents on management of urban planning and architecture to identify and remove inconsistencies.	PCU & TSU	
<i>Planning management methods are obsolete, fragmented, and inconsistent</i>	2014	Implementation	Medium	High	High	• Comprehensive renovation of planning management methods towards more strategic, development-oriented and spatially unified	PCU	
<i>Lack of transparency in planning management and urban development</i>	2014	Implementation	Medium	High	High	• Ensure a participatory planning approach; thereby increasing transparency and information sharing in the planning process.	PCU & TSU	
<i>Inadequate numbers and limited capacity of engineers, planners and architects, staff in planning, designing and planning management particularly focusing on innovative CC approaches.</i>	2014	Implementation	Medium	High	High	• Implement capacity development activities.	PCU & TSU	
						• Ensure careful selection of both national/local and international staff.		
<i>Poor coordination between sectors, stakeholders involved and limited public participation in planning process</i>	2014	Implementation	Medium	High	High	• Ensure that planning and implementation are clear, detailed and represent the role of each sector and involve all stakeholders with clear responsibilities.	PCU & TSU	
<i>Overlap among different sector plans</i>	2014	Implementation	Medium	High	High	• Ensure clear mechanisms to mobilize the involvement of all sectors in every step of the process of planning and implementation.	PCU & TSU	
						• Commission studies on new methods of planning towards integrated multi-sector planning which is spatially unified.		
<i>Geological/naturals constraints</i>	2014	Implementation	Low	Low	Low	• Ensure comprehensive site investigations and monitoring to mitigate these risks	PCU	
<i>Delays in undertaking land acquisition and resettlement and compensation aspects or obtaining approvals</i>	2014	Implementation	Medium	High	High	• Framework of RAPs should be adopted by the PPC.	PCU	
						• Hold a workshop about procedures with PSC and SPMU.		

Risk identification			Risk Analysis			Risk Treatment		
Description of Risk	Period of identification	Risk Category	Probability	Potential impact	Total	Action(s)	Resp.	Deadline
						<ul style="list-style-type: none"> • Monitor continually during the land acquisition and compensation phase. 		
<i>Lack of effective provincial mechanisms for planning and coordinating urban development activities</i>	2014	Implementation	Medium	High	High	<ul style="list-style-type: none"> • PCU to have the mandate to facilitate cross agency coordination. • Ensure the participation and cooperation of local agencies in project orientation programs and workshops. 	PCU	
<i>Construction incidents</i>	2014	Implementation	Low	Medium	Medium	<ul style="list-style-type: none"> • Undertake OHS training workshops with contractors at commencement of physical works. • Erect clear safety signs. • Ensure use of the site safety manual and that a site safety officer is appointed. 	PCU PCU PCU	
<i>Land limitation, water scarcity and pollution</i>	2014	Implementation	Medium	Medium	Medium	<ul style="list-style-type: none"> • Support advanced technology in agriculture to cope with climate change 	PCU & TSU	
<i>Prolonged or severe wet season, flooding, or cyclone</i>	2014	Implementation	Medium	High	High	<ul style="list-style-type: none"> • Construct in-ground elements during dry seasons as much as possible 	PCU	
<i>Unforeseen environmental impacts</i>	2014	Implementation	Low	Medium	Medium	<ul style="list-style-type: none"> • Establish an Environmental Management and Monitoring framework. • Ensure that each contractor implements EMPs. • Assess/monitor conditions throughout project. 	PCU & TSU	
<i>Local authorities professionals, and major stakeholders have difficulties coping with CC threats</i>	2014	Implementation	Low	Medium	Medium	<ul style="list-style-type: none"> • Conduct awareness raising about climate change impacts; adaptation, mitigation and about national program on climate change. • Ensure the sharing of with international experiences. 	PCU	
<i>Rapid increase in energy consumption</i>	2014	Implementation	Low	Low	Low	<ul style="list-style-type: none"> • Review incentives to improve energy efficiency (fee, tax...) 	PCU	
<i>Sustainable housing trends in the future</i>	2014	Implementation	Low	Medium	Medium	<ul style="list-style-type: none"> • Share experience learnt. 	PCU & TSU	

Risk identification			Risk Analysis			Risk Treatment		
Description of Risk	Period of identification	Risk Category	Probability	Potential impact	Total	Action(s)	Resp.	Deadline
						<ul style="list-style-type: none"> • Make trend predictions with suitable long-term vision. 		
<i>Timely access to data</i>	2014	Management	Medium	Medium	Medium	<ul style="list-style-type: none"> • The PCU and TSU will set-up communication channels among partner agencies. • Platforms for dialogue will be set up at both national and provincial levels. 	PCU & TSU	
<i>Delays in approvals</i>	2014	Management	Medium	Medium	Medium	<ul style="list-style-type: none"> • The PCU and TSU will maintain close contact with the PPC and the related Ministries to facilitate the procedures. 	TSU & PCU	
<i>Limited interest for environmental and awareness raising issues and innovative alternatives</i>	2014	Management	Medium	Medium	Medium	<ul style="list-style-type: none"> • Communications activities will focus on changing the mentality on these issues. • Environmental issues will be highlighted to decision makers, exposing them to alternative solutions concerning technical issues and O & M modalities. • Networking within Vietnam will bring new ideas up-front. 	TSU & PCU	
<i>Unnecessary interference</i>	2014	Management	Low	Low	Low	<ul style="list-style-type: none"> • The PCU, in coordination with PPC, will play a decisive role in strengthening the provincial agencies and gaining confidence in order to undertake their new responsibilities. 	PCU	
<i>Lack of qualified staff at the Provincial and district departments</i>	2014	Management	Medium	Medium	Medium	<ul style="list-style-type: none"> • The capacity building assessment will define the present skill levels and will inform the PPC in case additional skill manpower is required. 	PCU	
<i>Lack of cooperation in the awareness raising activities among the related agencies</i>	2014	Management	Medium	Medium	Medium	<ul style="list-style-type: none"> • Consensus and dialogue will be integral to the decision making process. • Develop a platform for dialogue (including the none-government agencies). 	PCU	

Risk identification			Risk Analysis			Risk Treatment		
Description of Risk	Period of identification	Risk Category	Probability	Potential impact	Total	Action(s)	Resp.	Deadline
<i>Contractors do not adhere to environmental management plans included in their contracts</i>	2014	Management	Medium	Medium	Medium	<ul style="list-style-type: none"> The PCU will carefully monitor the contractor's performance and bring any major non-adherence of EPM to the attention of relevant authority and the PSC. 	PCU	
<i>PCU not provided with a clear mandate to coordinate all subproject activities with government agencies</i>	2014	Management	Medium	Medium	Medium	<ul style="list-style-type: none"> Project SC will have to make sure that all appropriate political decisions are taken. 	PSC	
<i>Inadequate in-country training capacity</i>	2014	Management	Low	Low	Low	<ul style="list-style-type: none"> Extensive networking (advertising) within Vietnam should allow identification of the proper trainers. 	PCU & TSU	
Low impact of the awareness campaigns	2014	Effectiveness	Medium	Medium	Medium	<ul style="list-style-type: none"> Ensure support and the involvement of the TSU and consultants. 	PCU & TSU	
						<ul style="list-style-type: none"> Learn from nationwide best practice. 		
						<ul style="list-style-type: none"> IEC activities, coordinated by the PCU, will be well-prepared to enhance effectiveness. 		
Low impact of the capacity development program	2014	Effectiveness	Medium	Medium	Medium	<ul style="list-style-type: none"> Ensure involvement of TAs of the TSU. Understand and learn from nationwide best practice. 	TSU & PCU	
						<ul style="list-style-type: none"> Adjusted the training to the skill level and expectations of the audience. 		
Reluctance of the PPC to fully consider regional concepts and planning of urban infrastructure development for the greater Phan Rang area	2014	Effectiveness	Medium	Medium	Medium	<ul style="list-style-type: none"> PM revision will be approached as an on-the-job training activity with relevant authorities to raise their awareness and hence support. 	TSU & PCU	
						<ul style="list-style-type: none"> Close coordination with different agencies should mitigate the risk. 	TSU & PCU	
<i>Unclear distribution of tasks and responsibilities between various institutions that relate to the project</i>	2014	Institutional	Medium	Medium	Medium	<ul style="list-style-type: none"> Clear mandates and division of tasks and responsibilities are expected from new decrees (New Water Law should clarify responsibilities in relation to Water Resource Management and new Planning Law in relation to Bottom up planning techniques). 	PCU & PSC	
						<ul style="list-style-type: none"> Exposure to international best practice will help foster changes. 	PCU & PSC	

Risk identification			Risk Analysis			Risk Treatment		
Description of Risk	Period of identification	Risk Category	Probability	Potential impact	Total	Action(s)	Resp.	Deadline
						<ul style="list-style-type: none"> • Training programs will highlight roles, gaps and overlaps, between agencies in charge of the Program execution modalities. 	PCU & PSC	
<i>Lack of Provincial leadership for coordinating the project</i>	2014	Institutional	Medium	High	High	<ul style="list-style-type: none"> • The PCU will have a key role in coaching the stakeholders on the importance of local coordination. 	PCU	
						<ul style="list-style-type: none"> • Intensive capacity building of agencies at the Set-up phase will involve leaders. 	PCU	
<i>Reluctance of the PPC to consider the involvement of the private sector</i>	2014	Institutional	Medium	Medium	Medium	<ul style="list-style-type: none"> • Exposure to examples of successful experiences will promote interest. 	PCU & TSC	
						<ul style="list-style-type: none"> • Involvement of PS actors in the pilots will demonstrate non-state options. 	PCU & TSC	
<i>Delay in defining the management, O&M agency for investment works</i>	2014	Institutional	Medium	Medium	Medium	<ul style="list-style-type: none"> • Options for infrastructure management will be analyzed in detail at completion of the study Phase and decisions implemented by PPC 	PCU	
No long-term application of the awareness activities	2014	Sustainability	Medium	Medium	Medium	<ul style="list-style-type: none"> • The long-term strategy and guidelines and the training conducted should ensure the technical sustainability of the intervention. 	PCU	
						<ul style="list-style-type: none"> • Electronic outputs will be publically uploaded for subsequent reuse and viewing. 	PCU	
Monitoring and evaluation as well as maintenance of completed infrastructure not applied	2014	Sustainability	Medium	Medium	Medium	<ul style="list-style-type: none"> • Appropriate O & M modalities, monitoring tools and reporting, as well as the consolidation of financial resources will guarantee the proper maintenance of the schemes in line with the new national policy. 	PCU	
Local agencies and organisations lack sufficient time, or are unable to provide suitably qualified staff, for training	2014	Sustainability	Medium	Medium	Medium	<ul style="list-style-type: none"> • The PCU will work closely with the provincial and district agencies to develop training programs and ensure that qualified staff attend. 	PCU	
						<ul style="list-style-type: none"> • Strong communication and coordination mechanism with the local agencies will support participation. 	PCU	

Risk identification			Risk Analysis			Risk Treatment		
Description of Risk	Period of identification	Risk Category	Probability	Potential impact	Total	Action(s)	Resp.	Deadline
Neighbourhood groups and schools not willing to participate in the project and contribute their skills	2014	Sustainability	Low	Low	Low	• The project will commence community consultation, participation and education/awareness processes early in the project.	PCU	
						• Encourage active participation and work towards gaining community confidence and ownership of the project.	PCU	
Consumers/households unwilling to develop appropriate adaptation and mitigation measures to their house	2014	Sustainability	Medium	Medium	Medium	• Establish local community groups to help the WU to develop close contacts with the communities.	PCU	
						• Project provides funds to start the revolving fund.	PCU	
						• PPC and local authorities encourage communities.	PCU	
Contractors demonstrate inexperienced management or poor workmanship	2014	Sustainability	Medium	Medium	Medium	• PCU evaluation/prequalification of local contractors is important to mitigate this risk.	PCU	
						• Establish and maintain quality control procedures throughout construction phases with TSU support.	PCU	
						• Provide construction management training.	PCU	
O&M program does not run to schedule. Lack of manuals, delays in the translation of the documents or agencies not able to provide suitable personnel for O&M roles	2014	Sustainability	Medium	Medium	Medium	• Obtain PPC/PSC explicit agreement on the provision of O&M personnel	PCU	
						• Ensure comprehensive O&M planning and monitoring.	PCU	
						• Ensure clear specifications for manuals and provision of commissioning and start-up operations training from suppliers.	PCU	
DoNRE and DARD not willing to adopt improved practices for managing water resources on a Province wide basis	2014	Sustainability	Medium	High	High	• Undertake orientation awareness raising workshops at an early stage of the project.	PCU & PSC	
						• Assist local agencies to develop their own management policies and practices to ensure ownership.	PCU & PSC	

Annex 4: List of actors involved in the baseline process (including those participating in the Satisfaction Survey)

ID	Full name	Function/Agency	Position
1	Mr. Le Tien Dung	Agriculture Division, Department of Agricultural and Rural Development	Deputy Head of Division
2	Mr. Pham Van Khoa	Department of Irrigation - Ninh Thuan	Officer
3	Mr. Nguyen Bao Trieu	Water Resources, Hydrological and Climate Change Division, Department of Natural Resource and Environment - Ninh Thuan	Deputy Head of Division
4	Mr. Kieu Tan Thinh	Master Planning Division, Department of Construction - Ninh Thuan	Head of Division
5	Mr. Pham Huu Son	Department of Construction - Ninh Thuan	Officer
6	Mr. Le Hoai Nam	People Committee of Phan Rang city - Ninh Thuan	Officer
7	Mr. Luu Giang Nam	People committee of Dong Hai Commune - Ninh Thuan	Officer
8	Mr. Tran Tri Thuc	Village 10 in Dong Hai ward	Head of Village
9	Mrs. Diep Danh Lam	Farmer Union of Dong Hai ward	Chairman
10	Mrs. Truong Thi Sang	Woman Organization of Dong Hai ward	Vice president of Woman Organization
11	Mrs. Huynh thi Xuan Nhi	Youth Organization of Dong Hai ward	Vice President of Youth Organization
12	Mrs. Nguyen Thi Ha Lien	People Committee of Dong Hai ward	Official
13	Mr. Nguyen Tuan Chung	People Committee in Dong Hai ward	Vice Chairman
14	Mrs. Phung Thi Kim Tien	Household in Dong Hai ward	
15	Mr. Trang Anh	Household in Dong Hai ward	
16	Mr. Nguyen Dong	Household in Dong Hai ward	
17	Mr. Le Hien	Household in Dong Hai ward	
18	Mr. Nguyen Van Chien	Household in Dong Hai ward	
19	Mr. Ngo Hong Chua	Household in Dong Hai ward	
20	Mr. Vo Minh Tuyen	An Thanh 1 Village in An Hai Commune	Head of Village
21	Mrs. Truong Thi Minh Nguyet	Long Binh Village in An Hai Commune	Head of Village
22	Mr. Ho Thanh Phong	Farmer Union of An Hai Commune	Chairman
23	Mrs. Kieu Thi Hoa	People Committee in An Hai Commune	Vice Secretary
24	Mr. Nguyen Huu Duc	Head of Village An Thanh 2 in An Hai Commune	Head of Village
25	Mr. Bui The Ly	An Hai People Committee	Vice Chairman
26	Mr. Le Van Lieu	Household in An Hai Commune	
27	Mr. Dinh Thanh	Household in An Hai Commune	
28	Mr. Ho Le Phuoc	Household in An Hai Commune	
29	Mr. Nguyen Duy Quang	Household in An Hai Commune	

ID	Full name	Function/Agency	Position
30	Mr. Vo Tuan Hoa	Household in An Hai Commune	
31	Mr. Nguyen Bao Trieu	Water Resource Division, Department of Natural Resource and Environments	Officer
32	Mr. Truong Ngoc Du	Irrigation Bureau	Officer
33	Mr. Do Phuoc Vinh	Provincial Bureau of Marine	Deputy Head of Bureau
34	Mr. Phan The Quynh	Agricultural Extension Center of the Province	Head
35	Mr. Nguyen Hong Quang	Meteorological stations, Ninh Thuan Hydro meteorological Forecasting Division	Officer
36	Mr. Le Xuan Tu	Ninh Thuan irrigational work one member company	Officer
37	Mrs. Nguyen Thi Kim Toan	Department of Industry & Trade	Officer
38	Mrs. Dang Thi Bich Phuong	Department of Information and Communication	Officer
39	Mr. Nguyen Tran Vuong	Tourism Management Division, Department of Cultural, Sport and Tourism	Head of Division
40	Mr. Le Trong Luu	Medical Technique Division, Department of Health	Deputy Head of Division
41	Mr. Nguyen Khac Hoan	Urban Planning Division, Department of Construction	Deputy Head of Division
42	Mr. Bui Van Tho	Hydrological and Climate Station	Deputy Director
43	Mr. Ngo Minh Tien	Red Cross Association	Deputy Chairman
44	Mr. Nguyen Quoc Hung	Ninh Thuan Radio and Television	Journalist
45	Mr. Le Dinh Nhi	Ninh Thuan newspaper	Officer
46	Mr. Nguyen Xuan Hao	Economic Division, Phan Rang – Thap Cham city People Committee	Head of the Division
47	Mr. Tran Thanh Quy	Environmental resources Bureau, Ninh Hai District People Committee	Officer
48	Mr. Huynh Tuan Anh	Environmental resources Bureau, Ninh Phuoc District People Committee	Officer
49	Mr. Doan Van Hung	Ninh Son District People Committee	Deputy Chairman
50	Mr. Nguyen Thanh Sang	Dong Hai Ward People Committee	Officer
51	Mr. Cao Hoang Vu Sanh	Thanh Hai Commune People Committee	Officer

Annex 5: Satisfaction Data and Analysis

Descriptive Statistics				
	N	Minimum	Maximum	Mean
O 1.4 - 01. Are you satisfied with the ease of access (financial and time costs) to get all the data you know is available?	19	1	5	2.68
O 1.4 - 02. Are you satisfied with the format in which you receive data (e.g. not in ready-to-use electronic database)?	19	1	5	2.63
O 1.4 - 03. Are you satisfied with the reliability/quality of the data you access?	19	1	5	3.21
O 1.4 - 04. Are you satisfied with the (up-to-date) timeliness of the data you access?	19	1	5	3.16
O 1.4 - 05. Are you satisfied with the level of detail of the data you access?	17	1	5	3.12
O 1.4 - 06. Are you satisfied with the scope/volume of data you can access (i.e. is there important data that you cannot access or that is not collected)?	19	1	5	2.95
O 1.4 - 07. Are you satisfied with the use by your organisation of data for planning and decision-making?	19	1	5	2.95
O 1.5 - 01. How important is your department/organisation relating to adapting to climate change?	19	2	5	4.00
O 1.5 - 02. Is this role with reference to CC well understood within your department/organisation?	19	1	5	3.47
O 1.5 - 03. How would you rate the functioning of coordination and communication within your department/organisation with regard to adapting to climate change?	19	1	5	3.42
O 1.5 - 04. How would you rate the functioning of coordination and communication between Provincial departments and organisations with regard to adapting to climate change?	19	1	5	3.26

The data exhibits the conclusion of satisfaction survey of output 1.4 and 1.5 of the Project. The questions asked here relate to the role of each department/organisation in adapting to the changing climate by managing water resources, managing floods, building resilience for existing infrastructure, planning for future urban development, coordinating and communicating for adaptive development, preparing for weather-related emergencies, responding to weather-related emergencies, and coordinating and communicating in times of emergency.

Of overall, there are 19 respondents participated in the survey, whom came from the public agencies, private company that related to the Climate change adaptation and Disaster Risks Reduction.

The table above summaries the average score of 19 respondents for each question to measure the satisfaction level of the respondent toward Data management, data access, information sharing, coordination and communication in the context of managing water for climate change adaptation and disaster risk management. There are five level of measurement in the satisfaction scale level, of which are specified in the score card below:

In this 2016 Survey, the score of Output 1.4 was marginally lower than Output 1.5. Specifically, minimum score for out 1.4 was 2.63 and the maximum score was 3.16. Whereas, the minimum score for output 1.5 was 3.26 and the maximum score was 4. Importantly, the survey results show that there is room for improvement (justifying various project interventions). The ease of access and the format of receiving data scored most poorly, and so should be priorities for improvement. All other measures (except O1.5 – 01) scored only 3.0 to 3.5 out of 5 possible points.

In Output 1.4 regarding the responsiveness of data (CC-IWRM & UD) management tools to provincial users, most people was satisfied with the reliability/quality, timeliness, scope/volume and the level of detail of the data they access. However, in term of the ease of access and the format of data received, most people did not seem to be very satisfied.

In Output 1.5 regarding the coordination and communication mechanism responding to the knowledge management need of the Provincial authorities, most officials reveal that the coordination and communication mechanism was above average.

Frequency Table

O 1.4- 01. Are you satisfied with the ease of access (financial and time costs) to get all the data you know is available?

	Frequency	Valid Percent
Very unsatisfied	5	26.3
Unsatisfied	5	26.3
Just satisfied	4	21.1
Satisfied	1	5.3
Very satisfied	4	21.1
Total	19	100

O 1.4 -02. Are you satisfied with the format in which you receive data (e.g. not in ready-to-use electronic database)?

	Frequency	Valid Percent
Very unsatisfied	4	21.1
Unsatisfied	4	21.1
Just satisfied	7	36.8
Satisfied	3	15.8
Very satisfied	1	5.3
Total	19	100

O 1.4 - 03. Are you satisfied with the reliability/quality of the data you access?

	Frequency	Valid Percent
Very unsatisfied	2	10.5
Unsatisfied	3	15.8
Just satisfied	7	36.8
Satisfied	3	15.8
Very satisfied	4	21.1
Total	19	100

O 1.4 - 04. Are you satisfied with the (up-to-date) timeliness of the data you access?

	Frequency	Valid Percent
Very unsatisfied	1	5.3
Unsatisfied	3	15.8
Just satisfied	9	47.4
Satisfied	4	21.1
Very satisfied	2	10.5
Total	19	100

O 1.4 - 05. Are you satisfied with the level of detail of the data you access?

	Frequency	Valid Percent
Very unsatisfied	1	5.9
Unsatisfied	5	29.4
Just satisfied	5	29.4
Satisfied	3	17.6
Very satisfied	3	17.6
Total	17	100

O 1.4 - 06. Are you satisfied with the scope/volume of data you can access (i.e. is there important data that you cannot access or that is not collected)?

	Frequency	Valid Percent
Very unsatisfied	1	5.3
Unsatisfied	4	21.1
Just satisfied	11	57.9
Satisfied	1	5.3
Very satisfied	2	10.5
Total	19	100

O 1.4 - 07. Are you satisfied with the use by your organisation of data for planning and decision-making?

	Frequency	Valid Percent
Very unsatisfied	1	5.3
Unsatisfied	4	21.1
Just satisfied	11	57.9
Satisfied	1	5.3
Very satisfied	2	10.5
Total	19	100

O 1.5 - 01. How important is your department/organisation relating to adapting to climate change ?

	Frequency	Valid Percent
Unsatisfied	2	10.5
Just satisfied	5	26.3
Satisfied	3	15.8
Very satisfied	9	47.4
Total	19	100

O 1.5 -02. Is this role with reference to CC well understood within your department/organisation ?

	Frequency	Valid Percent
Very unsatisfied	2	10.5
Unsatisfied	1	5.3
Just satisfied	7	36.8
Satisfied	4	21.1
Very satisfied	5	26.3
Total	19	100

O 1.5 - 03. How would you rate the functioning of coordination and communication within your department/organisation with regard to adapting to climate change ?

	Frequency	Valid Percent
Very unsatisfied	1	5.3
Unsatisfied	3	15.8
Just satisfied	5	26.3
Satisfied	7	36.8
Very satisfied	3	15.8
Total	19	100

O 1.5 - 04. How would you rate the functioning of coordination and communication between Provincial departments and organisations with regard to adapting to climate change ?

	Frequency	Valid Percent
Very unsatisfied	1	5.3
Unsatisfied	3	15.8
Just satisfied	9	47.4
Satisfied	2	10.5
Very satisfied	4	21.1
Total	19	100

Annex 6: List of Bibliography

- BTC, Belgium development agency, 2012, Technical and Financial File of Integrated water management and urban development in relation to climate change in Ninh Thuan province;
- BTC, Belgium development agency, March 2016, Technical and Financial File of Integrated water management and urban development in relation to climate change in Ninh Thuan province, Revision 01;
- Institute of Training and Applied Sciences of Central Region, 2016, Interpretation for Basic Design of Cau Ngoi Bridge;
- Institute of Training and Applied Sciences of Central Region and Irrigation University, 2016, Interpretation for Basic Design of Syphon system for Song Lu River;
- The Management and Capacity Development Unit of Water Resource and Public Services Ninh Thuan Province, 2016, Operation Manual of CLIMATE RESILIENT HOUSING REVOLVING CREDIT FUND, Integrated Water Management and Urban Development in relation to Climate Change in Ninh Thuan province, draft;
- The Management and Capacity Development Unit of Water Resource and Public Services Ninh Thuan Province, 2016, Recruitment of consultant for development the early warning system in Dinh river basin of Integrated Water Management and Urban Development in relation to Climate Change Project in Ninh Thuan province;
- The Management and Capacity Development Unit of Water Resource and Public Services Ninh Thuan Province, various Project Reports of the Integrated Water Management and Urban Development in relation to Climate Change Project in Ninh Thuan province;
- South-East Asia Institute for Water Resources and Environment (SAIWRE), 2016, Institutional and Technical Capacity Assessment and Capacity Development Plan on Water Resource Management and Climate Change in Ninh Thuan Province.