Royal Government of Cambodia

Ministry of Planning

MONITORING AND EVALUATION: AN APPROACH TO STRENGTHEN PLANNING IN CAMBODIA

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List of Abbreviations	
CDHS	Cambodia Demographic Health Surveys
CSES	Cambodia Socioeconomic Survey
CDB	Commune Database
CMDG	Cambodia Millennium Development Goals
CREAM	Clear, Relevant, Economic, Adequate and Monitorable
D&D	Decentralisation and De-concentration
Deptt.	Department
DP	Development Partner
Exp.	Expenditure
ExtFac	External Factors
Freq.	Frequency
GDP	Gross Domestic Product; also, General Directorate of Planning
HYV	High Yielding Variety
IDP	Industrial Development Policy
Impl.	Implementation
IMR	Infant Mortality Rate
IR	Intermediate Results
JICA	Japan International Cooperation Agency
JMI	Joint Monitoring Indicators
KAP	Knowledge, Attitude and Practice
LECS	Lao Expenditure Consumption Surveys
Log-Frame	Logical Framework
MMR	Maternal Mortality Rate
MNCH	Maternal, Neo-natal and Child Health
MOH	Ministry of Health
MOP	Ministry of Planning
MOEYS	Ministry of Education, Youth and Sports
MOWA	Ministry of Women's Affairs
MWRM	Ministry of Water Resources and Meteorology
M&E	Monitoring and Evaluation
NSDP	National Strategic Development Plan
NWGM&E	National Working Group on M&E
O&M	Operations and Maintenance
PERT	Project Evaluation and Review Techniques
PFMR	Public Finance Management Reform
PPA	Public Policy Administrators
Prog.	Programme
RGC	Royal Government of Cambodia
RBM	Results-based Management
RS	Rectangular Strategy
SBF	Strategic Budget Framework
SO	Strategic Objective
TC	Theory of Change
USAID	United States Agency for International Development
VSAT	Very Small Aperture Terminal
WATSAN	Water and Sanitation
WUS	Water User Society

Monitoring and Evaluation: An Approach to Strengthen Planning in Cambodia

A comprehensive monitoring and evaluation system enhances the value of investments through establishing clear links between the past, present and future initiatives and development results. M&E can help an implementing agency, ministry or country to extract relevant information from the previous and on-going activities that can be used as a basis for programmatic fine-tuning, reorientation and future planning. Thus, M&E enables to assess if an on-going work activity is on the right trajectory, whether progress and success can be achieved, and how future efforts might be improved.

Part 1: INTRODUCTION

1. The Royal Government of Cambodia (RGC) set up a National Working Group on Monitoring and Evaluation (NWGM&E) in end-2012 to streamline Monitoring and Evaluation (M&E) activities for the planning cycle 2014-2018 in Cambodia and beyond. In its initial meetings the NWGM&E's concern was to address issues in data: the sources, compatibility between different sources, definitions of variables, coverage of the surveys, and such concerns.[1] This time around, the NWGM&E proposes to initiate a debate on linking M&E with the overall Planning Framework in the NSDP. This paper puts forth an approach for an M&E system integrated with general planning system in the context of a Results-based Management (RBM), the latter being defined as a strategy aimed at achieving improved performance and demonstrable results.

2. Monitoring helps in assessing whether the implementation of a programme, project, or any other, is on the right path, while evaluation is the 'end-game' analysis of the effort. There are also intermediate questions relating to whether the project, programme or strategy is / was the right one to achieve a pre-set target, whether the steps adopted are / were the correct ones, has there been a problem in making the assumptions, is there a problem of inefficiency in the conversion of resources into outputs, are the resources allocation sufficient, and so on. These questions form a part of the larger schema of M&E within the RBM Framework for which this report proposes drawing upon the Theory of Change.

3. This paper, written in four parts, is aimed at both the line/implementing ministries and departments, and the central ministries.[2] *This is not a research paper. It is a contextualised primer and its main audience are policy makers and programme evaluators in the Royal Government of Cambodia. The reader is expected to look for the meaning and application of the concepts and approaches presented here rather than search for originality in the research.*

4. Part 2 of the paper puts forth the fundamentals of an M&E system within the context of an RBM in a national planning framework of countries like Cambodia. Part 3 provides the linkages between planning, budgeting and M&E and a design of the M&E framework. Part 4 discusses the statistical and data collection issues. Finally, Part 5 briefly presents the M&E approach that the RGC has adopted for the NSDP 2014-2-18, for the first time based on RBM. Part 6 provides a conclusion.

[1] Copies of the minutes of the meetings held between Dec. 2012 and October 2013 are available with the Ministry of Planning. These have also been circulated among the members of the NWGM&E.

[2] The paper presents the outline of an M&E System presently being discussed within the Ministry of Planning. While it is not proposed that the systems extant within the line ministries be dismantled or replaced, MOP feels that a regular dialogue on this issue is essential for a continued improvement in the system.

BOX 1: THE COUNTRY CONTEXT

At the outset, it would be useful to mention the country context and present practices. Cambodia, a planned economy in a market framework, has been receiving external assistance for its public sector projects of about one billion US dollars (annually)—mainly for infrastructure sector projects (irrigation, roads and bridges, railway, water, sanitation, sewerage, and so on)—to an extent of some 70% of the total capital expenditure in these sectors. With multiple development partners (DP) and full/partial funding from multiple sources, accounting for the monies spent with a view to get maximum benefits from the investments requires a common robust system of M&E supported by a strong database. The central ministries and agencies within the RGC and also the DPs have regularly strived to develop a comprehensive M&E Plan and many ministries have also developed these. The extent to which they are consistent with each other though is not known.

PART 2: M&E FUNDAMENTALS

2.1 The Results Framework and Log-Frame

2.1.1 Definitions

5. A general planning framework has four components: Planning, Budgeting, Implementation, and Monitoring and Evaluation. This paper primarily addresses the fourth, though the others will also find mention by virtue of the mutual links between the four of them.

6. It the outset, it is useful to understand some tools often deployed in setting up M&E systems. There are at least two formats within which M&E is integrated into the planning framework: the Logical Framework (Log-Frame) and the Results Framework (RF). Put briefly:

7. *Log-Frame*: Logical frameworks help set clear programme objectives and define indicators of success. They also outline critical assumptions on which a project rests. Further, log-frames identify the resources required to implement programmes, the key activity clusters of each of the programmes, and the means for verifying the projects' accomplishments. In a diagrammatic form, a typical log-frame hierarchy could be seen in Table 1:

TABLE 1: A TYPICAL SCHEMA OF A LOG FRAMEWORK HIERARCHY[3]

Project Description	*Performance Indicators*	*Means of Verification*	*Assumptions*
Goal: The broad impact that the project will contribute to, at the sectoral and/or national level	Measures the project's contribution towards meeting the goal – evaluation	Data sources and collection methods	
Purpose: The expected outcome towards which all programme components are aimed	Determines whether the purpose of the project has been achieved and the results are sustainable – project completion and evaluation	Data sources and collection methods	
Component objectives:	Determines attainment of	Data sources and	

[3] Sources: Measurement, Learning and Evaluation Project, http://www.urbanreproductivehealth.org; and http://www.tools4dev.org/resources/logical-framework-logframe-template/

The expected outcome from each output	component objectives – review purposes	collection methods	
Outputs: The direct results (goods and services) which are measured by the project	Measures quantity, quality and timing of outputs – for monitoring and review	Data sources and collection methods	
Activities: The project tasks that deliver outputs	Measuring programme targets – monitoring	Data sources and collection methods	

8. Notice that this table presents a linear 'pipeline-type' relationship between activities, outputs, objectives, purpose and goal (1st column). Thus, if in a development programme the goal is poverty alleviation; the purpose could be to improve incomes and capacities of people in the region with clearly identified interventions; the objective could be, say raising agricultural production; the output could be improving the quality of extension services, better irrigation, etc.; and the activities could be setting up extension centres, training farmers, investing in irrigation systems, and so on.

9. *Results Framework*: A Results Framework serves as a management tool with an emphasis on *results*. The purpose of RFs is to increase focus, select strategies, and allocate resources according to how to achieve results. RFs generally have an overarching strategic objective (SO) that a programme aims to achieve through key intermediate results (IRs) while explaining the cause-effect links, in turn which will emerge from a programme activity of the proposed objective. The RF also includes critical assumptions that must hold for a strategy to be valid. Figure 1 presents a typical RF.

10. Some planners maintain that there is little difference between the Log-Frame and the Results Frame: in fact, all variations of the 'Log-frame/RF' are essential the same. The former presents a logical sequence of activities finally resulting in outcomes, while the latter places an extra emphasis on achieving outcomes or results. The terminologies used by the two differ primarily because the former is deployed by one group of donors (typically, the European Union), while the latter, by the USAID, World Bank, and others. A correspondence between the two could be seen in Figure 2. A subtle difference: an RF is primarily concerned with achieving the final results, while a log-frame is mainly concerned with the efficiency of the resources – the difference thus lies in the judgements made.[4]

11. In this paper, the discussion will use the term 'Results Framework' since the Royal Government of Cambodia defines the development outcomes using the term Results Framework.

[4] See 'The Rosetta Stone of Logical Frameworks', CARE International, http://www.mande.co.uk/docs/Rosettastone.doc

FIGURE 1: DIAGRAMMATIC REPRESENTATION OF THE RESULTS FRAMEWORK

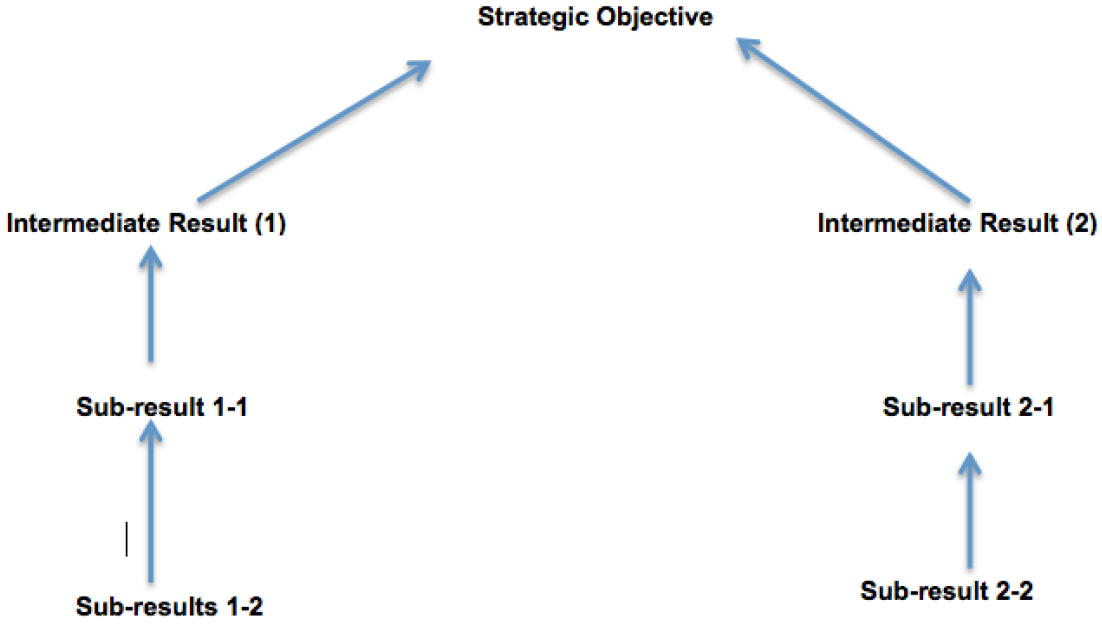
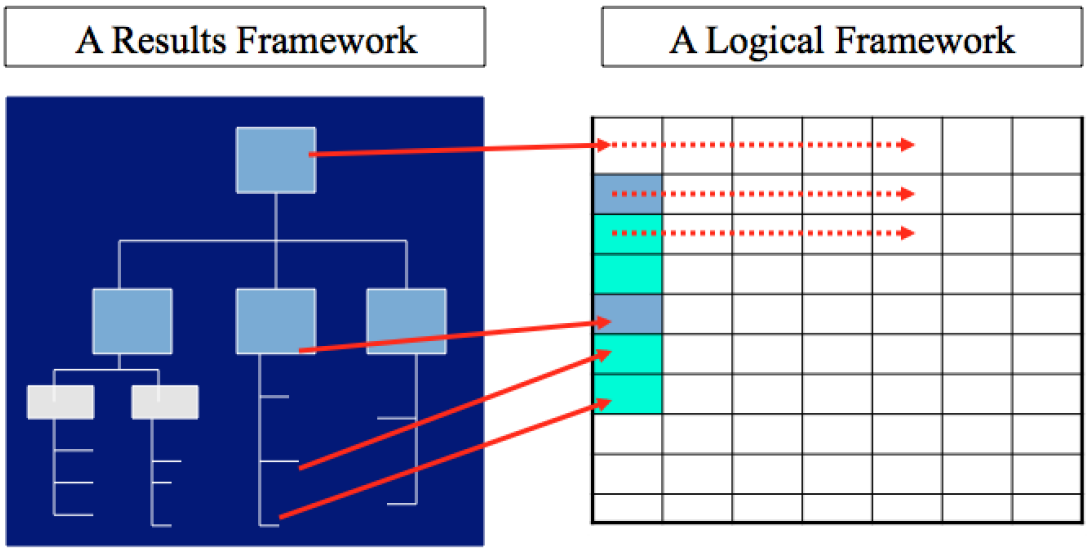


FIGURE 2: CORRESPONDENCE BETWEEN A RESULTS FRAME AND LOG-FRAME



2.1.2. Setting up an RF

12. The different terms in an RF—namely outcome, output, etc.—do not have a universal definition; in fact, they are highly contextualised. Each time an RF is drawn up for a project or a programme, it is important to identify what the results or outcomes would be. Take the case of the Joint Monitoring Indicators (JMI) in Cambodia, developed collectively by the concerned sectors / ministries in the RGC and the Development Partners for assessing the efficacy of the investments made. Essentially, these indicators are meant to assess the work of the ministries and sector

authorities in Cambodia, especially in regard to aid effectiveness. For the Ministry of Planning (MOP), in 2014-2015 one of the JMI outcomes is:

'Planning for Inclusive Growth and Poverty Reduction through Coordinated Partnership and Institutional Capacity Building, for which Conduct Censuses and Other Surveys, and Collect/Collate and Interpret Statistical Information'

13. This is an *outcome* for the ministry, but for the economy the goal is achieving inclusive growth and poverty reduction. In that effort, planning, capacity building, conducting surveys, and similar activities, as stated above, are a small part of the *inputs*, expected to feed into the development process.

14. Similarly, for the Ministry of Education, Youth and Sports (MOEYS), one of the JMI outcomes for 2014-2015 is,

'Completion rate of students in primary education increased'

15. For a society targeting to achieve full literacy and improving human capital through achieving at least nine years of education for the younger population— which is the national *outcome*—this should be one of the *outputs.*

16. There are instances of links between inter-ministerial activities as well: completion of irrigation projects is an *outcome* for the Ministry for Water Resources and Meteorology (MWRM), while water availability is an *input* for agriculture. Next, completion of rural roads is an *outcome* for the Ministry of Rural Development (MRD), while it is an input in agricultural production, marketing and exports. Further, reducing Infant Mortality Rate (IMR) is one of the outcomes in the health sector but it is one of the outputs for the National Strategic Development Plan 2014-2018 (NSDP), which aims to raise the overall human development and quality of life in a society. And there are many more such instances.

17. The above text makes it clear that the contents of an RF are specific to a particular project, department or ministry. *Each time, thus, a project or programme is drawn up, a new RF requires drawing up with fresh contents.* Its level of aggregation and/or disaggregation will depend upon the specific project or programme under consideration.

2.1.3. Some Common Mistakes in Setting up an RF

18. An RF is expected to establish a management hierarchy not only based on common logic but also it requires drawing on analysis, contemporary theories and technical data in the concerned sector. Additionally, behavioural patterns, agro-climatic conditions, and expertise of on-the-ground personnel, including the stakeholders, all matter while drawing up an RF. Very often, public policy administrators (PPAs) tend to rely on common logic, not recognising that the reality could be different. This typically happens because the PPAs have experiences from several locations, and these are etched deep in their minds, thought processes, and acts. Borrowing an analytical framework from elsewhere or basing it on incomplete information can at times leave gaps, which result in wastage of a lot of resources.

19. The Theory of Change, a logical evolution of the Programme Theory (of which both Log-Frame and RF are components), attempts to bridge the gaps and bring the logical sequencing of events in a project/programme cycle.

2.2. The Theory of Change[5]

2.2.1 The Concept

20. The Theory of Change (TC) is a specific type of methodology for planning and evaluation that is used mainly in governmental (or non-profit) sectors to promote social change. TC defines the long-term goals of a project, a programme or a sector, and then maps backwards to identify necessary preconditions for achieving these goals. TC explores, reflects and explains the process of change by outlining causal linkages in an initiative: how it happens and what it means for the part that the implementing agencies play, and its shorter-term, intermediate, and longer-term outcomes. The identified changes are then charted as the 'outcomes pathway', showing each outcome in a logical relationship to all others in a chronological flow. The links between the outcomes are also explained as to why one outcome is thought to be a prerequisite for another. TC unfolds the nuances of the 'big messy real world", and thereafter lays out different possible pathways leading to change, with an underlying logic as to how and why things actually happen in each pathway.

21. On the face, this might appear similar to an extended version of the Log-Frame or an RF; and in terms of the reason of its application, it is, but it is far more sophisticated and goes beyond making *a priori* assumptions. The theory imports critical thinking about:

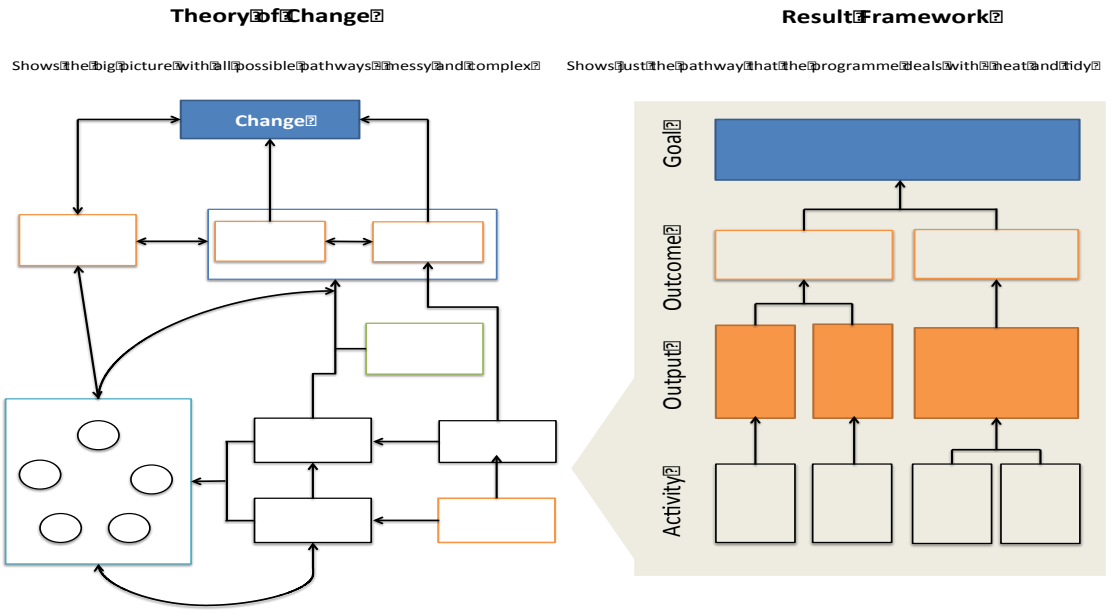
(a) The contextual conditions that influence a programme,
(b) The motivations and contributions of stakeholders (and other actors), and
(c) The different interpretations about how and why that sequence of change might or might not come about.

22. Figure 3 illustrates that in its simplest form, a model pathway based on the TC is visibly more detailed and complicated than the one based on Log-Frame/RF and it also illustrates different pathways.

23. The innovation of TC beyond its predecessors lies firstly, in making a distinction between desired and actual outcomes, and secondly, in requiring the PPAs and practitioners to model the desired outcomes before they decide on the form(s) of intervention to achieve the outcomes. Having worked out a change model, the PPAs and practitioners can then make more informed decisions on the strategies and tactics. In due course, as more monitoring and evaluation data become available, the PPAs and practitioners can periodically refine their TC-model in light of the new evidence. A TC model can also be developed retrospectively by reading programme documents, talking to stakeholders and using monitoring and evaluation data. This is often done during evaluations, reflecting what has worked or not in order to understand the past and plan for the future.

[5] This section draws heavily on 'Purposeful Programme Theory: Effective Use of Theories of Change and Logic Models', SC Funnell and PJ Rogers, John Wiley & Sons, San Francisco, 2011 (Kindle e-version); 'Program Theory Evaluation: Practice, Promise, and Problems', P Rogers, A Petrosino, T Huebner and Timothy A. Hacsi, in 'New Directions for Evaluation', #87, Fall 2000; and Review of the 'Use of Theory of Change' in International Development', Isabel Vogel, DfID, London https://dfid.gov.uk_pdf_outputs_mis_dfid_toc_review_vogelv7.pdf

FIGURE 3: TC VERSUS LOG-FRAME/RF – AN ILLUSTRATION[6]



24. Originating in the field of M&E, TC continues to be an important method to conduct evaluations for the following reasons.

(a) It puts forth theory and evidence-based evaluation approaches, which help to sharpen the focus of the analysis.
(b) It makes an insistence on choosing the most suitable indicators, which can be used as 'monitoring questions', since it is important to understand success beyond just knowing 'what works'. The monitoring questions could take the form of 'What do we really need to know in order to manage resources directed towards achieving an outcome?'
(c) TC cautions against just copying from the framework of one problem to address another; such an approach is rarely successful. TC requires the M&E process to gather sufficient knowledge and understanding so as to be able to predict—with some degree of confidence—how an initiative or set of activities might work / not work, and how it/they need to be adjusted to suit a specific project.
(d) TC proposes combining evidence from a number of studies to build a stronger picture of what is taking place, how it is unfolding, and, most importantly, how the context influences an initiative.

[6] Source: http://www.tools4dev.org/resources/theory-of-change-logical-framework-whats-the-difference-in-practice?

BOX 2: SOME FEATURES OF THE THEORY OF CHANGE

The Theory of Change does not propose that there be a full model of change evolved for every project and activity. It essentially requires that answers to the questions raised in the text here be adequately answered. If one or most answers are already known, there is no need to seek answers to them again. Consider the following to illustrate the point:

Objective: Building a village school for improving enrolment rates.

Alternative 1: Children of poor parents tend to drop out of schools. So, it is necessary that initially liberal support and incentives be provided to these children, which should be a part of the delivery design. Eventually, it would do well to juxtapose education programmes with income generation programmes (joint programming) so that the compulsion for children to enter the labour market is diminished.

Alternative 2: It is likely that children from poorer households *in this village* would dropout of schools. So, it is pertinent to conduct detailed studies *here* on the 'how' and 'why' of attendance and dropout before initiating any construction. If the proposition that children from poorer households drop out is empirically well established in Cambodia and also in other countries of Asia, it could be taken as true for this village school project as well and there is no reason to withhold construction of one village school pending studies and inquiries. TC proposes that such generalizable propositions be collated and documented from past experiences well before a whole programme of constructing schools is launched. The issue is not to be raked up when the programme has reached the stage of building individual schools.

Next, it is important to note that the Theory of Change supplements, complements and makes the M&E RF pipeline more realistic. It is not a replacement to any of the existing tools and methods of M&E or RF.

Third, TC attaches a great deal of importance to matters like lagged effects, non-linearity, oneway and two-way causality and external influences, as each of these assumes a great deal of importance in setting up a realistic result-oriented model.

Finally, TC exercises place emphasis on numbers, facts, and empirical evidences. Thus, econometric exercises to estimate elasticities, slopes, marginal coefficients and the like, are critical in lending more meaning to causalities that the RFs establish. In this regard, generating good quality data assumes centrality.

25. The following case illustrates how TC logic works. Consider that eating apples improves people's health – this is from the common phrase, 'An apple a day keeps the doctor away'. On how and why things could go wrong (if they do), see Figure 4. Improvement in people's health could be impeded for more than one reason and at different levels in the causal link: in delivery or in assumptions at different stages.

FIGURE 4: EATING APPLES IMPROVE PEOPLE'S HEALTH: WHY THEY MIGHT NOT – POSSIBLE REASONS[7]

Apples Delivered	*Apples Eaten*	*Vitamin C Levels Raised*	*Health Outcomes Improved*	*Interpretation*
✗	✗	✗	✗	Implementation failure
✓	✗	✗	✗	Engagement or adherence failure (first causal link)
✓	✓	✗	✗	Theory failure (early causal link)
✓	✓	✓	✗	Theory failure (later causal link)
✓	✓	✓	✓	Consistent with theory
✓	✓	✓/✗	✓/✗	Partial theory failure (works in some contexts)
✓	✓	✗	✓	Theory failure (different causal path)

26. To summarise the TC:

(a). TC acknowledges the complexity of change and actors and events that influence change. It permits actually locating a programme or project within a wider analysis of how change comes about. In this regard, it links activities to changes at different levels: community, sub-national, national and international.
(b). TC draws upon external learning on development. In this regard, it shows the different pathways that might lead to 'change', even if those pathways are not related to the programme under consideration.
(c). TC articulates an understanding of the change process and also encourages users to explore it further.
(d). TC describes how and why a possible change happens and how it could be used; for example, in completing the sentence 'if a policymaker does X then Y will change because…'
(e). TC models / explanations are presented in the form of diagrams with supporting narrative texts. The diagrams are flexible and do not have a particular format: they could include cyclical processes, feedback loops, a box leading to (multiple) others, boxes of different shapes could be used, etc.
(f). While making a diagrammatic presentation, TC models describe why it is thought that one box (event) will lead to another box. Example, if it is believed that increased knowledge will lead to a behavioural change, is this assumption or is there evidence to support the point?

2.2.2. Three Case Studies

CASE 1: School Education

27. Outcome: All children must be literate and have school-education. Resources / means: Construct and establish more schools.

[7] Source: Funnell and Rogers, quoted in Footnote 5.

28. Logic: In Cambodia, there are over 6,900 primary schools and over 1,200 lower secondary schools. Schools have been set up all over the country at specific locations in identified rural and urban neighbourhoods. It is postulated that with schools in the neighbourhood children will attend classes, they would become educated, they would join the work force in a different / improved capacity, and they would add to the human capital stock in the country. This is how the RF is set up. The results, however, have not been up to the expectations: dropouts still exist, a lot of children do not enter the lower secondary school stream after completing primary, and many complain of high costs and low quality.[8]

Issue 1: Does it always happen that establishing a school will result in children attending?
Issue 2: If not, what other factors impede the children's attending schools?
Issue 3: Even if the children attend schools, would the school provide the essential knowledge?
Issue 4: If not, what are the impeding factors?

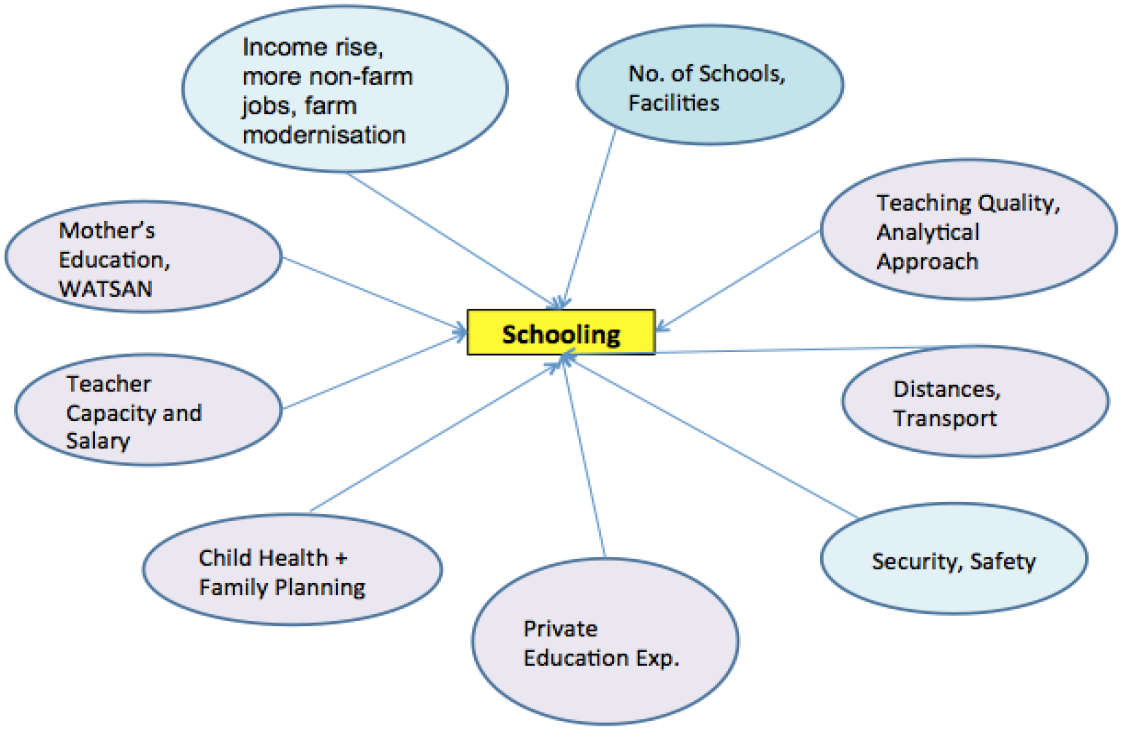
29. Observe the following from real life studies and data in Cambodia and Laos:

(a). Field studies suggest that some children do not attend because they are over-age and feel uncomfortable sitting with younger children (Cambodia – Field Studies).[9]
(b). A few children and parents feel that schooling is not 'useful for them' (Cambodia – CSES).[10]
(c). In some cases the schools are located in places where there are no access roads to the schools (Laos).[11]
(d). Economic compulsions force children into the labour market / work in family farms [Cambodia (CMDG)/Laos (LECS)].[12]
(e). In a few cases, parents of children feel that primary school education (6 years) is not sufficient. Unless nine years of education is ensured, they feel that it makes no real sense spending time in schools (Cambodia). Lower secondary level schools are far fewer in numbers.

30. An exercise was carried out in Cambodia in October 2013 with senior technical officials of the RGC representing as many as 12 different ministries, on how to raise the school enrolment and retention. Each official made a written statement, which when distilled yielded answers as in Figure 5. This figure suggests that there is need to look beyond setting up more schools and such issues require being built into the RF.

[8] See CMDG Report of 2013, RGC, Phnom Penh.
[9] See CMDG Report of 2013, RGC, Phnom Penh.
[10] See Cambodia Socioeconomic Surveys, MOP, Phnom Penh (any of the reports in the recent years, 2009, 2010, 2011, 2012.
[11] Taken from 'Human Development Report of Lao PDR' 2009, Government of Lao PDR, Vientiane.
[12] Full form: Laos Expenditure Consumption Surveys.

FIGURE 5: AN ASSESSMENT OF WHAT INFLUENCES SCHOOLING



Note: WATSAN stands for water and sanitation

CASE 2: Rural Water and Sanitation

31. Outcome: Safe water and sanitation (WATSAN) should reach all populations. Resources/means: Invest in WATSAN, extend water connection (all forms) to rural areas, promote sanitation in rural areas, and provide the means and wherewithal for setting up facilities.

32. The governments in India and Indonesia through the 1970s and 1980s invested a lot of resources in setting up (safe) water facilities and latrines in rural areas. The logic: if WATSAN facilities are established, people would make a switch towards using them, in turn such a switch will improve their health and also would contribute to a cleaner environment, all resulting in a better quality of life. Combinations of how to extend the water and sanitation systems were tried: inducing people to construct facilities within their homes when the houses were large enough to do this; in cases where the homes were designed in such a manner where constructing water outlets / latrines within the houses was not possible, design alterations were proposed; and where space limitations did not permit any options, common stand-posts (for water) and common facilities (latrines) were constructed.

33. Most evaluations have suggested while the water scheme was relatively more successful (though not fully), the sanitation scheme was not. In sanitation, many of the private facilities also were not used fully.[13]

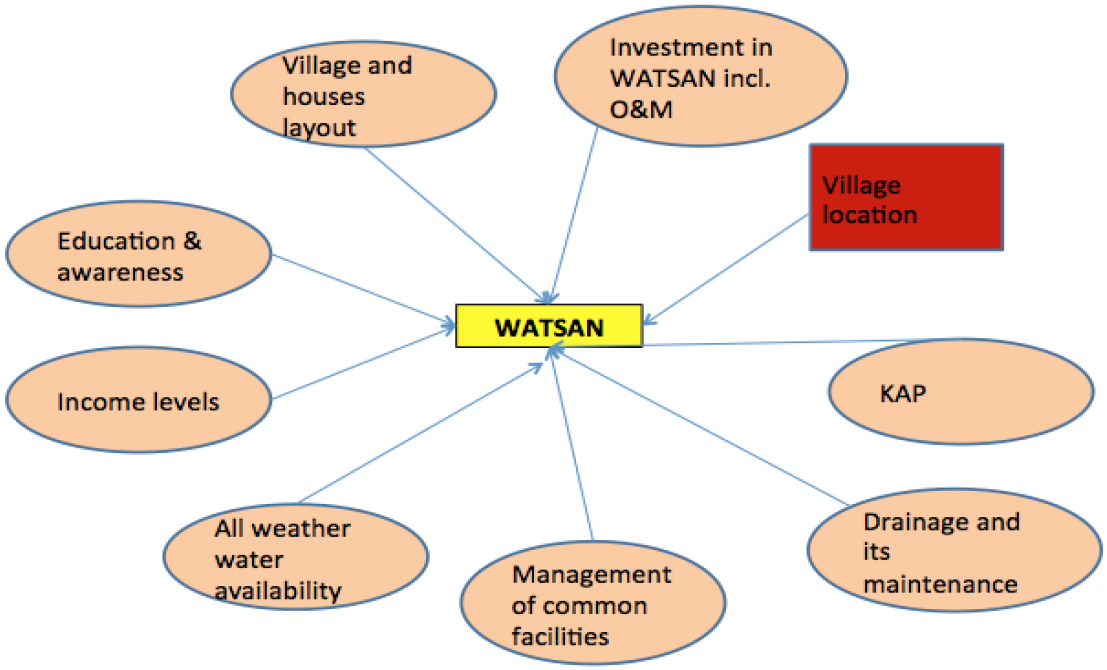
[13] See, 'How Valuable are Environmental Health Interventions? Evaluation of Water and Sanitation Programmes in India', S K Pattanayak, C Poulos, Jui-Chen Yang & S Patil, Bulletin of the World Health Organisation 2010; 88:535-542; 'Scaling Up Rural Sanitation: Findings from the Impact Evaluation – Baseline Survey in Madhya Pradesh, India', A L. Salvatore and Sumeet R. Patil, Water and Sanitation Program, World Bank, Washington, March 2011; 'Evaluation of the Rajiv Gandhi National Drinking Water Mission', PEO, Planning Commission of India, New Delhi, 2010

Issue1: Was drainage provided and was it of adequate engineering standards?
Issue2: Was operations and maintenance (O&M) expense built-in into the project design?
Issue3: Was sufficient water available for cleaning the toilets?
Issue4: Were health and environment issues taken into consideration, given that water logging, breeding of mosquitoes and malaria, are major concerns?
Issue5: Did the authorities assess the capacity and willingness by the beneficiary households to pay?
Issue6: Was a 'Knowledge-Attitude-Practice' (KAP) exercise carried with the people in regard to the use of water and sanitation? Or was their KAP known?

34. Later studies suggested that each of these aspects mattered depending upon the location. It was further found that:

(a) People accept consumption-oriented technologies (with the associated costs) only when their incomes also increase.
(b) Full-time water availability and drainage are central to adoption of these methods, *after (1) above is satisfied*.

FIGURE 6: AN ASSESSMENT OF WHAT INFLUENCES WATSAN



35. Figure 6 is based on a discussion carried out with senior technical level officials in the RGC in September 2013 on extending water and sanitation in the Cambodia (CMDG 7). It suggests that there is more to WATSAN than setting up and subsidising facilities. An RF should account for the economic, social and cultural factors, and also include issues like drainage, O&M expenses, out of pocket expenses that the users would bear, and public health.

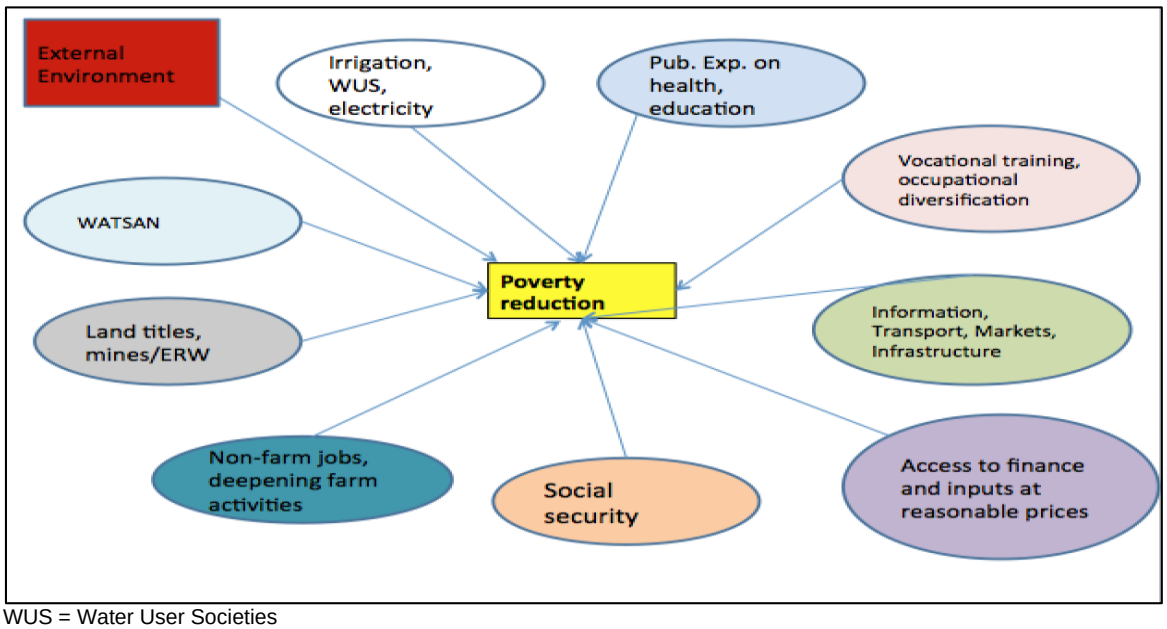
CASE 3: Rural Poverty Alleviation

36. Outcome: Progressive reduction in poverty rate in rural areas. Resources / means: Invest in irrigation and rural infrastructure; initiate public health, education, WATSAN; and initiate Food-for-Work and Cash-transfer programmes.

37. Logic: Irrigation and rural infrastructure would help raise agricultural production and hence, incomes for the farmers; health, water and sanitation would provide a basis for people being healthy, thereby earn better; and while education would provide the ground for tomorrow, food-for-work type programmes would provide immediate relief. Governments across the world have been trying to alleviate and eliminate poverty using a combination of the above (some with less and some with more add-ons), but the impact has been limited. Even in spectacular growth conditions as in China, rural poverty is yet a problem, albeit small.

38. A recent exercise carried out with technical staff of the RGC for Cambodia in September 2013 produced the following findings (Figure 7):

FIGURE 7: AN ASSESSMENT OF WHAT INFLUENCES POVERTY



WUS = Water User Societies

39. It is evident from this diagram that while the postulated logic is generally correct, it might not be complete. A more comprehensive pro-poor growth approach, like creation of non-farm jobs, strengthening agriculture beyond irrigation, help alleviate poverty more effectively. Sops handed down to the poor play only a small and temporary role.

2.2.3. Synthesis of the Three Studies

40. Consider the following:
(a). Each of the programmes would be successful if synergies are built with other sub-programmes and projects in the targeted area and region.

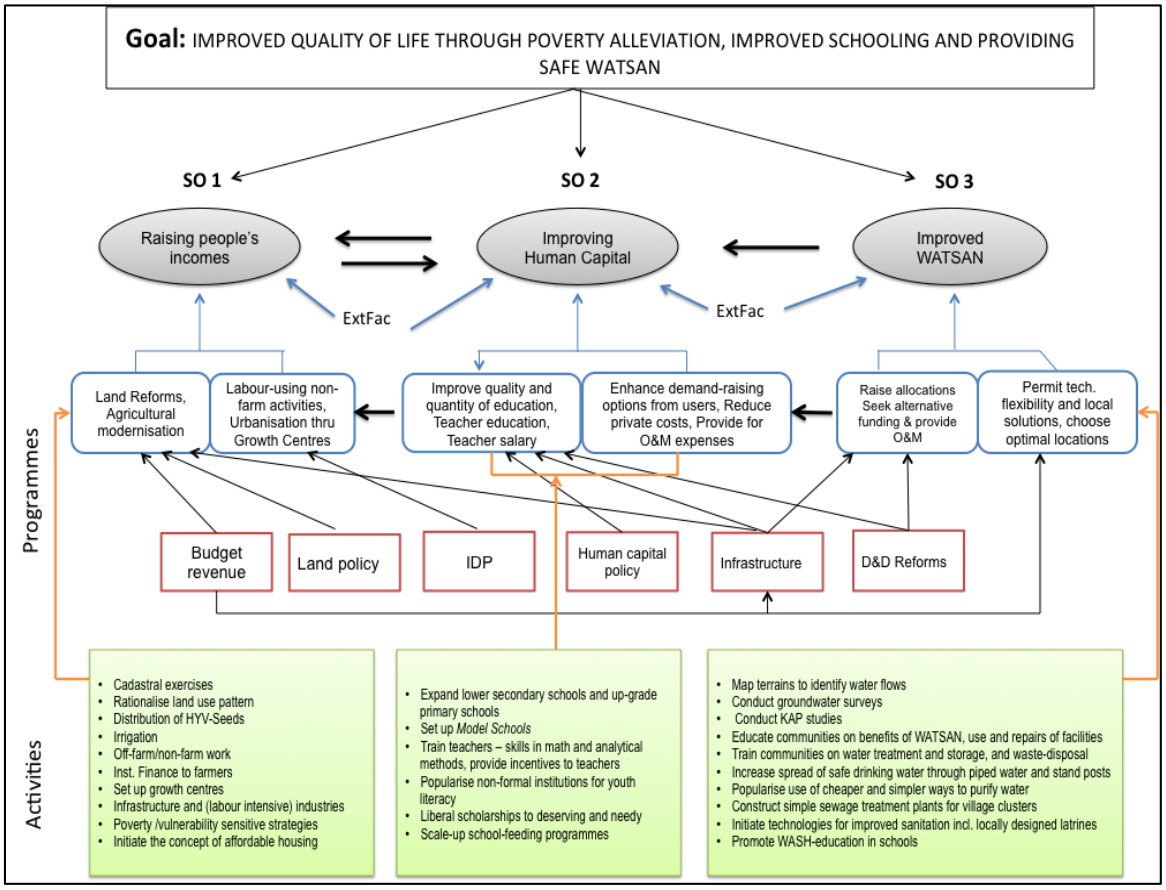
(b). The inter-dependence between the three goals, extending education, WATSAN and poverty alleviation is large, thus requiring the multiple objectives to be jointly achieved rather than just one for better results. Joint programming of these three, thus, might be most efficient.
(c). M&E goals should be so set that the timings of completion of each of the target-specific goals are close matched.
(d). In each case the extent of achievement depends partly on external factors out of the control of the present three thrusts, though they might not be fully out of control of the planning authorities.

41. Keeping the above fact in the fore, a TC-based RF was created, which looks somewhat like in Figure 8.

2.3. Summing up

42. In any M&E process the results are matched against the efforts made to achieve the results. The Results Framework, which the RGC has also embraced, is a useful approach to follow in planning and M&E. The RF can be strengthened by approaches put forth in the Theory of Change Approach. The TC-based approach is not a new 'magic-wand' to understanding and solving problems. It is, instead, an evidence-based comprehensive and questioning approach, which is helpful in obtaining a comprehensive view of the reality.

FIGURE 8: RF FOR POVERTY ALLEVIATION, EDUCATION AND WATSAN USING TC



SO = Strategic objective; ExtFac = External factors; O&M = Operations and maintenance; IDP = Industrial Development Policy; KAP = Knowledge, attitude and practice; D&D = Decentralisation and de-concentration; HYV = High-yielding variety; WASH = Water, sanitation, hygiene

PART 3: PLANNING AND M&E

3.1 Linkage between Programme Structure and RF

43. As the Royal Government of Cambodia moves closer towards a Public Financial Management Reform (PFMR), different ministries and agencies will require introducing a Strategic Budget Framework (SBF) that includes a programme budgeting approach to resource allocation, dovetailed with an M&E system. Some ministries have adopted an SBF though others are yet on their way to adopting such frameworks.

44. The integral theme of programme-based budgeting is to optimise on the effective and efficient delivery of services. To do so will require measuring the impact of individual programmes and sub-programmes and allocating resources based on the performance. Figure 9 presents this succinctly and a more detailed explication of the relationship is given in Table 2. Meaningful linking of programmes, budgets and M&E requires the M&E system to regularly collect information from individual activities and assess and inform the authorities on their contribution to meeting the national, ministry or implementing agency's strategic goals.

FIGURE 9: A PICTORIAL REPRESENTATION OF PLANNING AND M&E FEEDBACK SYSTEM

TABLE 2: A TABULAR REPRESENTATION OF PLANNING, BUDGETING AND M&E

Planning	Budgeting	Implementation Results	Monitoring	Evaluation
Linkages between Levels of Results defined.	Results Based Budgeting system established	Institutional priorities aligned to planning outcomes.	Indicators from Planning.	Evaluation Methodology formulated.
Indicators with targets specified for each level of results.	Budget based on results from planning.	Policies, People, Processes oriented to deliver intended activities.	Institutional responsibilities defined.	Institutional Responsibilities defined.
Indicators satisfy SMART principles (Specific, Measurable, Achievable, Relevant, and Time Bound).	Budgets have medium term horizon linked to planning.	Service delivery standards established.	Data Processing Methodology specified.	Dissemination Methodology formulated.
	Tracking and reporting methodology for budget execution established.		Analysis and Reporting Methodology Specified.	Stakeholder engagement defined.
Planning Results consider Information from evaluation and sets the priorities for the budget.	Budget is aligned to plan targets and defines final service delivery outputs.	Service delivery is aligned to budget with measurable performance indicators to facilitate results monitoring.	Monitoring system improves service delivery and data for evaluation.	Evaluation assesses results achieved and informs succeeding plans.

45. The information system described above forms the basis of a government, ministry or implementing agency's budget cycle and its medium-term strategic planning, associated with an M&E Framework. In its present formation the system is relatively more abstract and will have to be made adaptable to specific ministries, programmes, sub-programmes and projects as the case may be.

3.2. NSDP, Ministries, Programmes and Sub-programmes

3.2.1. NSDP and Ministries

46. At the aggregate level, the RGC has as many as 24 ministries and over a dozen other central agencies, many of which are also implementing agencies. Figure 10 is figuratively drawn: it has a sample three ministries, sample three programmes under Ministry2, sample two sub-programmes under the three programmes, and sample activities under each of the sub-programmes. It is proposed that the outcomes of each of the ministries and central agencies are so drawn up that they are synchronised with the RGC's outcomes (reflected in the NSDP).

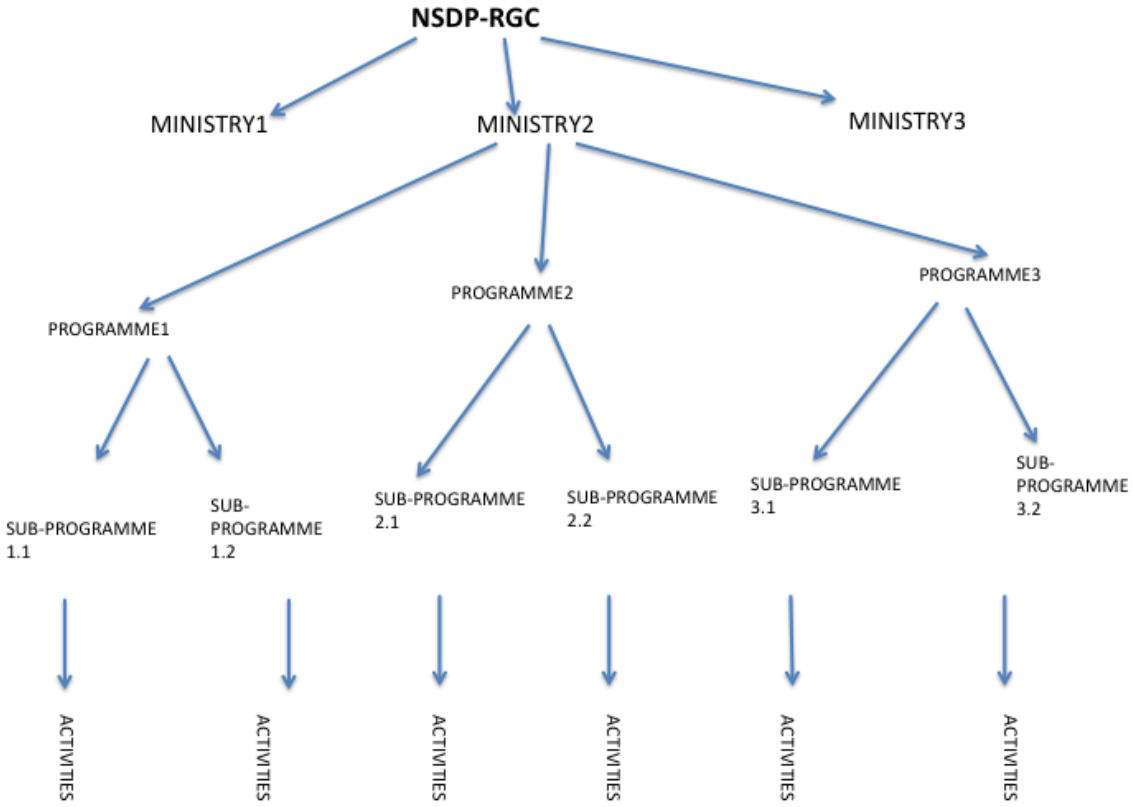
47. In select cases there are long-term sectoral plans drawn-up (like the 10-Year Tourism Plan, or the 10-Year Fisheries Plan). In such cases, the newer activities from the shelf of programmes listed in the 10-year plans (or from outside it) should be linked to the NSDP's 5-yearly goals.

48. A ministry, programmes, sub-programmes and the activities structure, have a linkage with the RF discussed in Part 2. There can be an RF set up at each level to identify and link the implementation strategies with the expected results. Looking at these in a reverse order:

(a). At the activity level an RF could define a work plan for that particular activity.

(b). At the sub-sector level the RF could be deployed to define the casual relationships that ensure that the outputs of the activities would meet the objectives of each sub-programme.
(c). At the higher level an RF can assist in developing the logical linkages between the results of the sub-programmes and programmes and the goals of the ministry and (finally) the NSDP.

FIGURE 10: A SYNOPTIC VIEW OF THE MINISTRIES, PROGRAMMES, SUB-PROGRAMMES AND ACTIVITIES



3.2.2. Programmes

49. As seen in Figure 10, any line / implementing ministry or agency has a defined set of programmes. Thus, the MOH's programmes are MNCH, control of communication diseases, control of non-communicable diseases, and in-patient services; and MAFF's programmes relate to paddy crop, commercial crops, livestock, inland fisheries and marine fisheries, and so on. Each of these programmes addresses medium-term policy priorities as defined in the NSDP and translated into MOH or MAFF's sectorial strategies. Since all the programmes are tied to a broader outcome of the ministry or country (through the NSDP), they do not change from one year to another. They could be reviewed every 2-3 years and evaluated every five years.

50. Outcomes of these programmes could be measured using indicators that the M&E system identifies and which could be monitored and evaluated in the medium-term. The list of indicators would be specific to the ministry and its programmes so as to fully capture the objective.

51. Each programme could be expected to have several sub-programmes and numerous activities. The number of sub-programmes or activities that a ministry has depends on the ministry and its activities. The largest disaggregating of expenditures would logically occur at the activity or project level.

52. Programme costs are the sum of the sub-programme costs plus its own overheads.

3.2.3. Sub-programmes

53. Each programme can have a number of sub-programmes designed to contribute to the programme's objective. Sub-programmes being lower in the hierarchy should be evaluated annually and adjusted as necessary and therefore are the primary focus of the 'monitoring component' in an M&E system. Again as earlier, the M&E system should identify a set of performance indicators for each of the sub-programmes specific to the programme and its sub-programmes. While the sub-programmes could be designed for the medium-term (2-3 years), their objectives and means of achieving them may be modified based on the performance and available resources. New sub-programmes could also be added and low-performing sub-programmes dropped from a programme or revised if need be. Sub-programmes should be monitored on a 3-6 month basis, if not possible, at least annually. Sub-programmes should preferably be so designed that they are wholly contained within a single department of the ministry for having better control, managing the budget structure, and monitoring.

54. Sub-programme costs are defined as the total costs of its activities. They do not, though, include overhead costs at levels higher to them.

3.2.4. Activities

55. Each sub-programme can further have any number of activities, or at times referred to as projects, that directly contribute to a sub-programme's objective. Activities are at the lowest level in the programme structure and represent a level at which the work is carried out to produce outputs. An activity can comprise of an on-going government service as well. In very select cases an activity might be comprised of one or more sub-activities / sub-projects.

56. Activities have inputs in the form of financial and technical resources and they produce their own specific outputs. An activity's output(s) are tangible (easily measured), pre-determined results from the application of inputs. They could assume the form of goods, services or infrastructure; e.g. "15 Km of irrigation canals rehabilitated", "Capacities of 100 primary school teachers strengthened", "20 health centres up-graded", and so on. Each output at this level should normally be measured using no more than one indicator for brevity and lack of confusion, *though in exceptional cases* when a single indicator would not capture the output there could be another supplementary indicator added. The frequency of monitoring should be monthly to 3-monthly depending upon the activity.[14]

57. All costs other than the higher-level overheads are defined at the activity level.

58. A summary picture of the reporting could be seen in Table 3 below.

TABLE 3: M&E AND ADMINISTRATIVE REPORTING

Level	Admin Levels	Prog. Level	M&E		Authority	Source on Information
			RF Expectation	Freq		
Goal	Planning at the ministry level	Groups of prog.	Outcome	3-5 years	Ministry	Ministry + external proforma

[14] See a typical example in, 'Guideline for Monitoring of the Pilot Projects in Kampong Cham Province (Version 1.0)', Project on Gender Mainstreaming (Phase 2), MOWA/JICA, June 2013. Here, the monitoring is fully monthly.

Outcome	Deptt.	Prog	Deptt Output	Annual	Deptt and inter-deptt groups	Deptt Level proforma + external evaluation
Component Output	Unit within Deptt	Sub-prog.	Comp Output	6-monthly or 3-monthly	Deptt and units within deptts	Deptt Level proforma
Activity or Input	Impl Unit	Activity	Exp, local achievements	Monthly	Field agencies	Project level proforma

Deptt = Department; Prog = Programmes; Exp = Expenditures; Freq = frequency; Impl = Implementation; Comp = Component

BOX 3: MONITORING VERSUS EVALUATION – FOUR DIFFERENCES

Monitoring and Evaluation are two approaches to analysing the progress made in relation to the goals of an implementing ministry or agency. These two differ in their manner of how they approach the problem.

1. Monitoring is a regular and systematic analysis of information to identify changes on a real time basis. In contrast, evaluation is an analysis of the effectiveness of an activity that would finally prompt a judgment regarding the progress made in relation to the goals.

2. Monitoring keeps a track of the process in the implementation of a project or programme. It examines the progress made (and performance) in a project in a given timeframe. Monitoring exercises do not necessarily take into account past experiences involved in the performance. In contrast, evaluation can be defined as a study of the past experiences when it comes to performance and implementation of projects. Evaluation essentially consists of estimating the 'value' of something achieved.

3. Monitoring is done with a view to ensuring the completion of a programme or project on time. This, in fact, is the very purpose of monitoring. It consists of periodically checking progress made in the conduct of the projects against laid down targets and goals. In contrast, evaluation consists of conducting a study about the effectiveness of the programme or project.

4. The purpose of monitoring lies in providing constructive suggestions. The suggestions could be regarding the rescheduling of the project if required, allotment of separate budget to the project or reassigning staff for the conduct of a particular project. In contrast, the purpose of evaluation lies in bringing about the process of accounting closer to perfection. It also consists in making the best possible use of the available funds and resources to minimise the probability of mistakes, testing the efficacy of new techniques employed in the completion of the projects (if any), verifying the real benefits of the projects and understanding the participation of people in the project by means of surveys, interviews and other such means.

Source: Adapted from, http://www.differencebetween.com/difference-between-monitoring-and-vs-evaluation/#ixzz2zaMbtCXF

3.3. Programmes/Sectors and the M&E Process

3.3.1. Indicators

59. The M&E performance indicators measure progress from time to time to assess changes if any, which occur due to the planned intervention (or otherwise). The indicators are used at different levels [(both horizontally (across geographic spaces), and vertically (from lower levels up to ministries)] to illustrate the effects of actions taken for achieving the desired objectives. They are central to both, M&E and Strategic Budget Framework. Indicators are at different levels: economy wide, sectoral / ministerial, programme-specific, and at activity level.

60. Defining proper indicators is critical in the success of an M&E system and the credibility of its results. It is critical that the indicators must be chosen through consensus among the stakeholders. If this is not done, it becomes an indirect excuse for some to hide non-performance.

61. Indicators must be as close as possible to the expected results. Actually, the indicators should technically be a mirror reflection of the targets. Not only is it important that the indicators really reflect the targets from the perspective of assessing the success, it would inform efficiency and suggest possible improvements in the policy (activities/inputs).

62. Indicators must be defined in terms of quantity, value / restriction and time. Consider the following two cases:

Case 1
Step1: Set an indicator —> Cassava exports must increase.
Step2: Quantity —> Cassava exports must increase by 10%.
Step3: Value / restriction —> Cassava exports must increase by 10% at 2014 prices.
Step4: Time —> Cassava exports must increase by 10% at 2014 prices for the next five years.

Case 2
Step1: Set an indicator —> Infant Mortality Rate must fall.
Step2: Quantity —> Infant Mortality Rate (IMR) must fall by 5%.
Step3: Value / restriction —> IMR must uniformly across all the provinces.
Step4: Time —> IMR must fall by 5% uniformly across all the provinces for the next five years.

63. Four Thumb Rules:

(a). Indicators that demonstrate the achievement of an objective at one level should not be used to demonstrate achievement at the next lower level. Thus, attempt to measure the outcome of "better informed mothers" by using a lower-level output indicator of "100 mother trained on the advantages of MNCH services" might not be correct since the training courses are the output of an activity. An indicator such as "number of mothers visiting health centres to avail of MNCH facilities" is a better measurement of the results.
(b). There should be no confusion between outcomes and outputs. Outcomes are medium-term results achieved from a successful creation of the outputs. Example: the *outcome* from the *output* "building more schools" is "increased number of children attending schools". The *goal* of "increasing number of children attending schools" can be to "improved human capital" or "better informed society".
(c). In M&E systems, outcome indicators are expressed at the sub-programme level and they should be thought of as medium-term results that contribute to the overall programme objective.
(d) Proxy indicators are those indicators that reflect a certain situation. They stand for another indicator, which might not be easily measurable. A typical case is, the number of days required in initiate business,

being a proxy for economic governance. This is because economic governance has no unique and direct measure. It is very important to choose credible proxy indicators, lest the target stays unmeasured.

64. The planning proforma require being detailed and being separate for each programme. These are to be deployed by the ministries and agencies to define programmes, sub-programmes and activities along with an annual programme budget. The planning proforma are hierarchical with a direct information flow from the activity level to the programme and higher levels, with data summarised and aggregated at each level.

3.3.2. Setting Targets

65. The M&E system requires establishing (incremental) targets for each indicator to measure periodic / annual performance towards achieving objectives. Actual periodic / annual achievements are then compared against these targets to gauge the periodic (or annual) progress. The approach requires setting realistic annual targets for each indicator. There is no major issue while defining inputs and outputs at the project (or activity) level as the indicator is built into the project/activity – completion of the project (building, road), successful completion of training (teachers, health workers), or delivery of the defined services on time (vaccination services, clearing export cargo).[15]

66. Challenges begin to emerge at the sub-programme level, where outcomes need measuring because a number of behavioural and external forces (and compulsions) come into effect, as discussed in the three case studies in Part 2.[16] One way to go about setting targets is to draw upon an a priori assessment of the activities being undertaken. This task could be arduous—though not unachievable—since not all indicators reflect change on a real-time basis and the measurable change may not occur in a pre-defined time frame. Maximum uncertainty is seen in indicators related to behavioural change. Next, indicators such as improved quality of human capital due to better school attendance may only be indirectly estimated (through proxy indicators) after a careful analysis. In general when information is incomplete, it is best that a TC approach is adopted for assessing whether any of the set targets is or is not meaningful.

67. The number of indicators chosen to measure an activity's success, programme's success, etc. should be based on the question, 'How many indicators adequately reflect the achievement (or otherwise) of the target?' A general thumb rule is to keep these at a minimum – not more than 2-3 at any level. At the activity level it should be just one unless unavoidable.

[15] In engineering projects, a Project Evaluation and Review Techniques (PERT) diagram defines the outputs and its frequency. This is discussed later in this text Box 7.

[16] Note that at the project/activity level it is not necessary to determine outcome indicators as at this level achieving outputs suffices. Also, measuring outcomes of individual projects could be an unjustifiably expensive exercise.

BOX 4: EXAMPLES OF SETTING MACRO LEVEL TARGETS

At the macro level, it is almost always that outcome and impact targets are set not based on resource availability and/or its efficient use alone. Often, these are political decisions made on societal needs. Not surprising, some of these targets are revised and sometimes more than once. The most quoted case is of the Millennium Development Goals. After their initial adoption, many countries set up their own quantitative targets to replace the proportion-based targets stated in the original MDG Declaration. Cambodia has also done this.

Again, in Cambodia, the Rectangular Strategy Phase-3 has set a target of reducing poverty rate by at least 1% annually. It is a political commitment made to the people of the country by the incoming government in 2013, and has to be pursued. However, it is neither based on past trends nor through a modelling of 'economic growth and poverty reduction' relationships. In such cases, the target dictates the strategy and resources, and if resources fall short they require to be generated from external sources.

Such target setting process is not just in Cambodia but almost everywhere. In this regard, the Results Framework is often read as top-down rather than from bottom-up. However, this should not make a difference as long as a pipeline is logical and consistent.

Two important tools in target setting or resource identification are the Capital-Output Ratio and the Capital-labour ratio. The former sets the resource requirement while the latter, the employment generation.

Readings: Theil H, J.S. Cramer, H. Moerman, and A. Russchen. Economic Forecasting and Policy, North Holland Publications, Amsterdam 1958; Tinbergen J, Contributions to Economic Analysis, North-Holland, Amsterdam 1956

3.3.3. Data Pro-forma

68. The M&E system requires collecting targeted data on key indicators. A programme-linked system is comprised of a number of proforma statements, disaggregated by at least three main groups – Planning, Monitoring and Evaluation. The proforma statements represent a standardised means to collect and report the data and provide the necessary information to conduct monitoring and evaluation exercises and judging the final impact. These forms are to be used in conjunction with any other reporting mechanisms that exist (namely, financial and personnel). Samples of the three proforma *in a synoptic format* could be seen in Proforma Tables 1 to 14. They will need to be expanded and contextualised in each case before they are put in actual use. A brief explanation of the proforma is as below:

(a). Proforma Table 1 provides the yearly plan targets of the Royal Government of Cambodia (NSDP) at the highest level of aggregation for five years, presenting samples for three ministries.
(b). Proforma Table 2 provides the plan targets and achievements of a typical line ministry or implementing agency along with the budgets required and actual expenditures made to meet these targets, presenting samples for two goals.
(c). Proforma Table 3 provides a programme profile for a programme within a line ministry or implementing agency along with the budget required and actual expenditures, presenting samples of two programmes.
(d). Proforma Table 4 provides a sub-programme profile within a programme along with budget required and actual expenditures, presenting samples for two sub-activities.
(e). Proforma Table 5 provides an activity profile within a sub-programme along with the budget required and actual expenditures, presenting samples for two activities.

(f). Proforma Table 6 provides a summary statement at the programme level. This is useful for senior management in a ministry reviewing a programme.
(g). Proforma Tables 7 and 8 provide actual monitoring issues at the activity level: Explanations and Budgets (monthly / 3-monthly – One Activity Sample).
(h). Proforma Tables 9 and 10 provide actual monitoring issues at the sub-programme level: Explanations and Budgets (6-monthly), presenting sample for one sub-programme.
(i). Proforma Tables 11 and 12 provide actual monitoring issues at the programme level: Explanations and Budgets (annually), presenting sample for one programme.
(j). Field visits are important for obtaining first hand information of the progress on the activities undertaken. They are usually carried out the activity level and officials senior to those at the activity level are expected to conduct these. The frequency depends upon the sector and activity / project. Proforma Table 13 provides a format for a field report with entries informing the monitoring process and Proforma Table 14 provides a summary aggregation of several field visits.
(k). Proforma Tables 15-17 present entries required for an evaluation process at the sub-programme, programme and ministry levels.

PROFORMA TABLE 1: PLAN TARGETS OF THE ROYAL GOVERNMENT OF CAMBODIA (NSDP)					
TARGETS					
	Year 1	Year 2	Year 3	Year 4	Year 5
Goal 1 (describe)					
Planned Action					
Goal 2 (describe)					
Planned Action					
Goal 3 (describe)					
Planned Action					
Macro Indicators1					
Macro Indicators2					
Macro Indicators3					
Technical Details:					

Guidelines for Filling in Proforma Table 1*:*

1. This proforma presents the outcome indicators given in the Core Indicator list of the NSDP. These core indicators are inter-sectoral as well as sectoral.
2. Chapter 6 in the NSDP 2014-2019 document mentions the units of measurement, sources of data, and also methods of computing the indicators (e.g. what is the denominator, the numerator and the sources of each), whether to calculate percentages or not, and such details.
3. The Ministry of Planning, General Directorate of Planning is to take the responsibility of filling-in this table. An officer, not lower than the rank of director in the ministry, should be designated within the MOP-GDP, who would coordinate with the M&E agency of other ministries. The line ministries / agencies are to provide with the name of the designated official in-charge of M&E and who would provide the necessary information to the MOP-GDP.

4. In the event that the performance indicator is to be obtained from large national surveys, MOP can directly obtain such data from the source, like the CSES, CDHS or any other, but keep the concerned line ministry or agency adequately informed, in writing.
5. If data from different sources are obtained in different years, an explanatory note on comparability must be given; example, CSES data and MOEYS data on literacy rate. This should be written in 'Technical Details' row in the Proforma Table.
6. All monetary data are to be adjusted to inflation. MOP-GDP would liaise with the MOP-NIS to choose an appropriate deflator. Information on the choice of the deflator should also be shared with the National Bank of Cambodia.
7. The 'planned action' is the activity that the government has undertaken during the year. This is to be matched with the 'planned action' that the ministry has provided in the NSDP document.
8. At the national level, the base year is always the year the plan is launched. If data from another year are provided since a survey was not conducted in that year, a mention of that year is to be made.

PROFORMA TABLE 2: PLAN TARGETS AND ACHIEVEMENTS OF A MINISTRY					
GOALS					
	Year 1	Year 2	Year 3	Year 4	Year 5
Goal1 Description					
Indicator(s) (mention name)					
Target					
Achievement					
Budget					
Actual Exp.					
Goal2 Description					
Indicator(s) (mention name)					
Target					
Achievement					
Budget					
Actual Exp.					
COMMENTS:					
Technical Details:					

Guidelines for Filling in Proforma Table 2:

1. This proforma also presents the outcome indicators given in the Core Indicator list of the NSDP, though it would not include the inter-sectoral indicators like GDP, inflation or poverty rate. They are a combination of the Core and Additional Indicators in the NSDP 2014-2018. This is to be filled in for all ministries, separately. There is some overlap between the entries in Proforma Table 1 and this table, but this overlap is by design.
2. In Row 1, a description of the Goal, in very brief, is to be given. E.g. in MOEYS, one goal is to significantly increase school enrolment rate. This is the description.
4. An indicator is the numerical value that either states the actual progress or proxies for it. In Point (2) above, the proportion of children enrolled compared to the proportion of children in concerned age group is a direct measure of the gross enrolment rate but the rationale for choosing gross rather than net enrolment rate requires mention. Next, not in all cases is the measure so straightforward. E.g. if the goal is women's empowerment, empowerment per se has no unique measure. Indicators like violence against women are suitable proxies.

5. The data collection method needs explicit mention. If data originated from outside the ministry are deployed, a mention of the sources and rationale are required. The frequency of data compilation also needs mention. All this should be written in 'Technical Details' row in the Proforma Table.
6. The unit of measurement requires explication. If the indicator is a ratio, both denominator and numerator require stating along with data sources.
7. All monetary data are to be adjusted to inflation. MOP-GDP would liaise with the MOP-NIS to choose an appropriate deflator. The National Bank of Cambodia would also advise on the choice of the indicator. The deflator should then be shared with the concerned line ministry / agency.
8. Line ministries should designate an officer, not lower than the rank of director and preferably from the department of planning, from within the ministries who would coordinate with the key technical departments within the ministry. S/he would also liaise with the designated official from the MOP-GDP.
9. In Row 5, the annual budget allocation will require to be entered. Since the MOEF provides a firm allocation only for one year, a general commitment for 3-years (the PIP Cycle), and an indicative funding for the full five years, the entries are to be accordingly entered.
10. The 'comments' row is open to any pertinent comments. Example, it could say that the expense has been low because of late release of funds from the higher levels.

PROFORMA TABLE 3: PROGRAMMES PROFILE – TWO PROGRAMMES

Programme1 (name) -Objectives: -Description: - Number of sub-programmes (list): -Links to ministry and larger national goals as in Table 4.1 and 4.2 (Explain): - On-going/New (tick)					
	Year 1	Year 2	Year 3	Year 4	Year 5
Programme1 Target (Indicator)					
Indicator Achievement					
Budget					
Actual Exp.					
Programme2 (name) Objectives: Description: Links to ministry and larger national goals as in Table 4.1 and 4,2 (Explain): - On-going/New (tick)					
	Year 1	Year 2	Year 3	Year 4	Year 5
Programme2 Target (Indicator)					
Indicator Achievement					
Budget					
Actual Exp.					
COMMENTS:					
Technical Details:					

Guidelines for Filling in Proforma Table 3:

1. This proforma is to be filled-in for all programmes, separately. Please check whether this is an on-going programme from the previous plan or it is a new one.
2. Programmes are located within ministries and while the ministries are quasi-permanent entities, programmes might not be so. Usually, programmes last for 3-5 years or more depending on the programme. It is also seen that after the completion of the 1st phase some programmes get extended into subsequent phases. Therefore, there is need to detail the objectives of the

programmes accurately, which could be updated every 2-3 years or when the programme enters into a next phase or changes fully or partially in its design. The objective has to be written succinctly in 1-3 sentences giving the purpose and approach on how this will be achieved (incl. the number of sub-programmes under the programme). It should also be stated as to how this would link to the larger ministry and the NSDP's goal.

3. Each programme must have a target, which is split into annual targets. This needs description. Example, the target for a tuberculosis programme could be reduction of the incidence of TB to less than 500 per 100,000 populations by 2018. The target itself in this case is the indicator of success. In some cases the target does not lend itself to easy measurement. As stated in Guidelines for Filling-in Proforma Table 2, appropriate proxy indicators need to be identified.

4. Please state the unit of measurement of the target. In case the target is a ratio or rate, the numerator and denominator will require stating. Since in this Table Proforma the data refer to a programme or sector the more general national surveys might not be very helpful. It will be essential to mention the exact data source and / or approach to collect data, like collating sub-programme level data or conducting primary surveys. If surveys are conducted, details in terms of coverage, representativeness, limitations, and so on, will be required. Finally, the frequency of data collection should be explicated. All this should be written in 'Technical Details' row in the Proforma Table.

5. This proforma table is to be annually filled in by the programme holder in liaison with department of planning within concerned implementing ministry. The programme holder might delegate the responsibility to another officer within the programme, who should be identified by name and designation.

6. In Row 4, the annual budget allocation will require to be entered. Since the MOEF provides a firm allocation only for one year, a general commitment for 3-years (as the PIP cycle), and an indicative funding for the full five years, the entries are to be accordingly made. If the project is planned for a smaller time-span than five years, the proforma table will be appropriately by shortened.

7. The 'Comments' row is open to any pertinent comments. Example, it could say that the expense has been low because of late release of funds from the higher levels.

PROFORMA TABLE 4: SUB-PROGRAMMES PROFILE – TWO SUB-PROGRAMMES AND ONE PROGRAMME

Sub-prog.1.1 of Programme1 (name)
-Explain link with the Programme:
- Objective:
-Description:
- Number of activities/projects (list):
-On-going/New (tick)

Sub-prog. 1.2 of Programme1 (name)
-Explain link with the Programme:
- Objective:
-Description:
- Number of activities/projects (list):
-On-going/New (tick)

	Year1 (6 or 3-monthly)	Year2 (6 or 3-monthly)	Year3 (6 or 3-monthly)	Year4 (6 or 3-monthly)	Year5 (6 or 3-monthly)
Sub-prog.1.1 Target (Indicator)					
Indicator Achievement					
Budget Sub-prog.1.1					
Actual Exp.					
Sub-prog.1.2 Target (Indicator)					

Indicator Achievement					
Budget Sub-prog.1.2					
Actual Exp					
COMMENTS:					
Technical Details:					

Guidelines for filling in Proforma Table 4:

1. This proforma is to be filled-in for all sub-programmes, separately. Please check whether this is an on-going sub-programme from the previous plan or it is a new one.
2. Sub-programmes are components of programmes and are integrally linked to the programme's time cycle (or for a shorter period if terminated earlier). Usually, sub-programmes last for 1-5 years or more, depending on the type. Sub-programmes get extended (at least some, if not all) when programmes get extended into subsequent phases.
3. Please detail the objectives of the sub-programmes accurately, which could be updated every year or when the sub-programme enters into a next phase or changes fully or partially in its design. The objective has to be written succinctly in 1-3 sentences giving the purpose, and approach on how this will be achieved (incl. the number of activities under the sub-programme). Links to the larger programme should also be stated.
4. Each sub-programme must have a definitive target, split into annual targets. Example, the target for surface irrigation in Kampong Cham could be achieving irrigation in XXX hectares for 2018. The target itself in this case is the indicator of success. In some cases the target does not lend itself to easy measurement. As stated in Guidelines for Filling-in Proforma Table 2, appropriate proxy indicators need to be identified.
5. The unit of measurement must be stated in the target. In case the target is a ratio, the numerator and denominator will require stating. Since in this Table Proforma the data will refer to a sub-programme, the more general national surveys might not be useful. It would be essential to mention the exact approach: activity-level data, primary surveys, others. If surveys are to be conducted, their details in terms of coverage, representativeness, limitations, and so on will be required. Finally, the frequency of data collection should be entered. All this should be written in 'Technical Details' row in the Proforma Table.
6. This proforma table is to be sub-annually (3 or 6-months, depending upon the sub-programme) filled in by the sub-programme in-charge in liaison with the programme holder. The sub-programme in-charge might delegate this responsibility to another officer within the sub-programme, who should be identified by name and designation.
7. Data on sub-annual budget allocations will require to be entered.
8. The 'Comments' row is open to any pertinent comments. Example, it could that the expense has been low because of late release of funds from the higher levels.

PROFORMA TABLE 5: TWO ACTIVITIES OF ONE SUB-PROGRAMME 1 OF ONE PROGRAMME					
Activity1.1.1 of Sub-programme1.1 (name) Objective: Description: On-going/New (tick) Explain link with the Sub-programme): **Activity1.1.2 of Sub-programme1.1** (name) Objective: Description: On-going/New (tick) Explain link with the Sub-programme):					
	Year1, Month1	Year1, Month 2	Year1, Month3	Year1, Month4	Year1, Month5
Activity1.1.1					

Target (Indicator)					
Target Achievement					
Activity1.1.1 Budget					
Actual Expenditure					
Activity1.1.2 Target (Indicator)					
Target Achievement					
Activity1.1.2 Budget					
Actual Expenditure					
Gender Considerations (comment):					
Environment Considerations (comment):					
Income/Asset Distributional Comments:					
Technical Details:					

Guidelines for filling in Proforma Table 5:

1. This proforma is to be filled-in for all sub-programmes, separately. Please check whether this is an on-going activity from the previous plan or it is a new one.
2. Activities are components of sub-programmes and are integrally linked to the programme time cycle (or for a shorter period if terminated earlier).
3. Please detail the objectives of the activity/project accurately, which could be updated every month or as often as the activity or project warrants. The objective has to be written succinctly in 1-3 sentences giving the purpose, and approach on how this will be achieved (incl. the number of steps in the activity). It should also be stated as to how this would link to the larger sub-programme target.
4. Monthly targets in activities could be varied, as they are not outcome targets. They are output targets. Some examples:
- Completion of three training programmes for schoolteachers (this can be monthly)
- Ten Training Programmes for young mothers in MNCH (this can be monthly or bi-monthly)
- Completion of 500 metres of road (this could only be 6-monthly or yearly). In such cases state the actual progress in terms of material purchased, labour hired, plinth set, etc., i.e. the steps laid-out in the PERT chart.
5. The unit of measurement must be stated in the target. In case the target is a ratio, the numerator and denominator will require stating. Since in this Table Proforma the data will refer to an activity, the more general national surveys might not be useful. It would be essential to mention the exact approach: process-level data, primary surveys, others. If surveys are to be conducted, their details in terms of coverage, representativeness, limitations, and so on will be required. Finally, the frequency of data collection should be entered. All this should be written in 'Technical Details' row in the Proforma Table.
6. The person collecting and inputing the data should also be the one who certifies completion of the work. S/he should be identified by designation and name.
7. This proforma table is to be sub-annually (monthly or bi-monthly, depending upon the activity. It would be filled-in by the project in-charge. The project holder might delegate the responsibility to another officer within the project, who should be identified by name and designation.
8. Data on monthly budget allocations will require to be entered.

PROFORMA TABLE 6: TARGETS AND ACHIEVEMENTS

	Year1			Year2			Year3			Year4			Year5		
Goals/targets	T	A	% Budget spent	T	A	% Budget spent	T	A	% Budget spent	T	A	% Budget spent	T	A	% Budget spent

Programme 1															
-Sub-prog1.1															
Activity1.1.1															
Activity1.1.2															
-Sub-Prog1.2															
Activity1.2.1															
Activity1.2.2															
Programme 2															
-Sub-prog2.1															
Activity2.1.1															
Activity2.1.2															
-Sub-Prog2.2															
Activity2.2.1															
Activity2.2.2															

Note: T and A refer to targets and achievements

Guidelines for filling in Proforma Table 6:

1. This table is really a summary of the data obtained from Proforma Tables 3, 4 and 5.
2. Care should be exercised is summing up the performance at the annual level for indicators that have been developed for smaller time horizons.
3. At another level, there is the issue of interpreting data at different levels in the hierarchy. This requires care. Example, at the activity level if the activity is construction of school buildings and they are all complete, then one could be tempted to conclude that all other higher targets will also be met. This might not be so. Recall from the Theory of Change exercise in the main text: that there could be many hurdles in converting success at activity level to outcomes. Thus, hasty conclusions should be avoided.

PROFORMA TABLE 7: ACTIVITY MONITORING – EXPLANATIONS (MONTHLY/3-MONTHLY – ONE ACTIVITY SAMPLE)
Activity X: Objectives, Description, Links to Sub-programme and Programme Goals (Explain)
Analyse to what extent the targets are met, what remains and why. Give break-up of the causes by external and internal. Even if the targets are met, a statement in regard to issues in the implementation process needs mention. Procedural/legal: Capital Expense Resources: O&M: Personnel (incl. training): Supplies: Project design: External factors: Others (specify):

PROFORMA TABLE 8: BUDGET DATA – ACTIVITIES												
	Budget 1-3rd Month			Budget 4-6th Month			Budget 7-9th Month			Budget 10-12th Month		
	BE	RE	%RE spent	BE	RE	%RE spent	BE	RE	%RE spent	BE	RE	%RE spent
Activity X												

BE = Budgeted expenditure; RE = Released Expenditure Amount

Guidelines for filling in Proforma Table 7 and 8:

1. X could take values 1,2,3, or any, depending upon the number of activities. This proforma is to be filled-in for all activities, separately.
2. The Objectives, Description, Links to Sub-programme and Programme Goals mentioned in this table are the same as in Table 5. They have to be reproduced from there in this table for ready reference
3. The key factors identified that could affect or strain a project are seven: procedural problems and associated delays, inadequate or non-availability of resources for putting up a project, inadequate or non-availability of Operations and Maintenance (O&M) resources, personnel issues, issues related to timely arrival of material supplies, problems related to project design (in-built inefficiency), and others. The project in-charge should fill in these with brief description (no more than 1-2 sentences) to explain the constraining issues.
4. The sanctioned budget and actual release are to filled in Proforma Table 8. These are the same numbers submitted to the audit authorities and entered in the financial legers, certified by the project in-charge.

PROFORMA TABLE 9: SUB-PROGRAMME MONITORING – EXPLANATIONS (6-MONTHLY – ONE SUB-PROGRAMME SAMPLE)
Sub-programme Y: Objectives, Description, Links to Programme and Higher Level Goals (Explain)
Analyse to what extent the targets are met, what remains and why. Give break-up of the causes by external and internal. Even if the targets are met, a statement in regard to issues in the implementation process needs mention. Procedural/legal: Capital Expense Resources: O&M: Personnel (incl. training): Supplies: Sub-programme design: External factors: Others (specify):

PROFORMA TABLE 10: BUDGET DATA – SUB-PROGRAMMES						
	Budget 1-6th Month			Budget 7-12th Month		
	BE	RE	%RE spent	BE	RE	%RE spent
Sub-prog. Y						

BE = Budgeted expenditure; RE = Released Expenditure Amount

Guidelines for filling in Proforma Tables 9 and 10:

1. Y could take values 1,2,3, or any, depending upon the number of sub-programmes. This proforma is to be filled-in for all sub-programmes, separately.
2. The Objectives, Description, Links to programme and Programme Goals mentioned in this table are the same as in Table 4. They have to be reproduced from there in this table for ready reference
3. The key factors identified that could affect or strain a project are seven: procedural problems and associated delays, inadequate or non-availability of resources for putting up a project, inadequate or non-availability of Operations and Maintenance (O&M) resources, personnel issues, issues related to timely arrival of material supplies, problems related to project design (in-built inefficiency), and others. If the problems are specific to 1-2 activities under the sub-programme, name those activities. The sub-programme in-charge should fill in these with brief description (no more than 1-2 sentences) to explain the constraining issues.
4. The sanctioned budget and actual release should be entered in Proforma Table 10. These are the same numbers submitted to the audit authorities and entered in the financial legers, certified by the sub-programme in-charge.

PROFORMA TABLE 11: PROGRAMME MONITORING – EXPLANATIONS AND BUDGETS (ANNUALLY – ONE PROGRAMME SAMPLE)

Programme Z: Objectives, Description, Links to larger national goals (Explain)

Analyse to what extent the targets are met, what remains and why. Give break-up of the causes by external and internal. Even if the targets are met, a statement in regard to issues in the implementation process needs mention.

Procedural/legal:

Capital Expense Resources:

O&M:

Personnel (incl. training):

Supplies:

Sub-programme design:

External factors:

Others (specify):

PROFORMA TABLE 12: BUDGET DATA – PROGRAMMES

	Budget 1st Year			Budget 2nd Year			Budget 3rd Year		
	BE	RE	%RE spent	BE	RE	%RE spent	BE	RE	%RE spent
Prog. Z									

BE = Budgeted expenditure; RE = Released Expenditure Amount

Guidelines for filling in Proforma Table 11 and 12:

1. Z could take values 1,2,3, or any, depending upon the number of programmes. The proforma requires filling in for each sub-programme separately.

2. The Objectives, Description, Links to programme and Programme Goals mentioned in this table are the same as in Table 3. They have to be reproduced from there in this table for ready reference
3. The key factors identified that could affect or strain a project are seven: procedural problems and associated delays, inadequate or non-availability of resources for putting up a project, inadequate or non-availability of Operations and Maintenance (O&M) resources, personnel issues, issues related to timely arrival of material supplies, problems related to project design (in-built inefficiency), and others. If the problems are specific to 1-2 sub-programmes under the sub-programme, name those activities. The sub-programme in-charge should fill in these with brief description (no more than 1-2 sentences) to explain the constraining issues.
4. The sanctioned budget and actual release should be entered in Proforma Table 12. These are the same numbers submitted to the audit authorities and entered in the financial legers, certified by the sub-programme in-charge.

PROFORMA TABLE 13: FIELD VISITS – ONE PROGRAMME, TWO SUB-PROGRAMMES AND TWO ACTIVITIES (SAMPLE – MONTHLY)

State Objectives of Activity AA1.1: Description, Links to Sub-programme and Programme Goals (Explain)

State Objectives of Activity AA1.2: Description, Links to Sub-programme and Programme Goals (Explain)

State Objectives of Activity AA2.1: Description, Links to Sub-programme and Programme Goals (Explain)

State Objectives of Activity AA2.2: Description, Links to Sub-programme and Programme Goals (Explain)

	Sub-progAA.1		Sub-progAA.2	
Gaps Identified	ActivityAA.1.1	ActivityAA.1.2	ActivityAA.2.1	ActivityAA.2.2
Procedural and legal				
Capital Expense Resources				
Operations & Maintenance Expenses				
Supplies				
Personnel				
External factors				
Project design				
Others (specify)				
Recommendations				

PROFORMA TABLE 14: SUMMARY OF FIELD VISITS AT SUB-PROGRAMME LEVEL (SAMPLE – 3-MONTHLY)

State Objectives of the sub-programme: Description, Links to Sub-programme and Programme Goals (Explain)

	Sub-progAA.1	Sub-progAA.2
Gaps Identified		
Procedural and legal		
Capital Expense Resources		
Operations & Maintenance Expenses		
Supplies		
Personnel		
External factors		
Project design		
Others (specify)		
Recommendations		

Guidelines for filling in Proforma Tables 13 and 14:

1. AA could take values 1,2,3, or any, depending upon the number programmes (to be filled-in for each activity separately, for all sub-programmes and activities).
2. Information to be filled in at the Objective of the Activity is the same as in Proforma Table 7. It is reproduced here for ready reference.
3. Field visits are not carried out for all the activities: they are done for a select number.
4. There would be more than one field visit carried out by more than one authority. A summary statement of several field visits need to be put together and processed further. It is proposed that the summary statement is collated at the sub-programme level.
5. Table 14 primarily compiles information gathered in Proforma Table 13.

PROFORMA TABLE 15: SUB-PROGRAMME EVALUATION

		ASSESSMENT STATUS				
	Process evaluation	**Fully met**	**Somewhat fully met**	**Partly met**	**Only a little met**	**Not met**
1	Is the Sub-programme designed to meet the objective?					
2	Is the Sub-programme cost effective?					
3	Has the Sub-programme made the right assumptions?					
4	Is the Sub-programme adequately staffed?					
5	Is the Sub-programme adequately provided with other resources?					
	Outcome Evaluation					
1	Have the results (see by indicators) been met?					
2	Have the programme/sub-programme met the higher objectives?					
3	Has the programme/sub-programme expected benefits to the people?					

Definitions: *Process evaluation focuses on how a programme or sub-programme is implemented and how it operates. It identifies the procedures undertaken and the decisions made in designing the programme/sub-programme. Outcome/impact evaluation: Outcome evaluation informs planners what changes have actually occurred due to the programme's implementation.*

Note: To be filled-in for all sub-programmes.

PROFORMA TABLE 16: PROGRAMME EVALUATION

Sub-programme#	Status (1=completed, 2=on-going)	Assessment	Released Amount	Actual Spent
Sub-prog1		(From Table 15)		
Sub-prog2		(From Table 15)		
Sub-prog3		(From Table 15)		

Note: To be done for all sub-programmes under a programme. Use weights for sub-programmes if necessary.

PROFORMA TABLE 17: MINISTRY EVALUATION

Programme #	Status (1=completed, 2=on-going)	Assessment	Released Amount	Actual Spent
Programme1		(From Table 16)		
Programme2		(From Table 16)		
Programme3		(From Table 16)		

Note: To be filled-in for all sub-programmes under a programme

Guidelines for filling in Proforma Tables 15-17:

1. Proforma Table 15 is to be filled in for all sub-programmes, Proforma Table 16 for all programmes and Proforma Table 17 for all ministries
2. Table 15 requires building a scale, from target 'fully met' to 'not met'. This is to be developed with consensus between different stakeholders.
3. Table 16 is a summation of Table 17.
4. Table 17 is a summary statement from Table 16.

3.4. Summing up

69. A comprehensive M&E system requires a close association between itself, the programme structure and budgets at different levels. It is only then that an assessment of what effort and resources have been invested *vis a vis* what has been achieved can be made. Next, the targets at each level are required to be closely matched with the programmes and sub-programmes. At the same time, realistic targets require setting, which should be clear, relevant, economic, adequate and monitorable (CREAM).[17]

[17] Some writings say that indicators should be SMART. The meaning is the same, only the terminology differs.

PART 4: STATISTICAL CONSIDERATIONS

4.1. M&E Organisation

4.1.1. Structure and Reporting

Economy level

70. At the highest level, i.e. the economy, the targets are set based on need-based criteria and political commitments, as was stated earlier in Part 3. In principle, these targets are (expected to be) broadly consistent with the sectoral programmes (outputs) and the associated budgets (inputs). Put conversely, each ministry is expected to draw up its programmes, projects and activities and the associated budgets, which are to be consistent with these national targets. Whichever the way it is seen, the national targets are (to be) linked to the sector / ministry targets, programmes sub-programmes and activities. Since the national targets have been set, it is the responsibility of the line ministries to align their programmes and work plans with these targets.

71. The Monitoring Indicators of the NSDP cycle 2014-2018 are presented in Part 5 of this paper. At this level, it suffices to put forth a set of indicators and targets as derived from criteria mentioned in the above paragraph. These indicators fall in five categories:

(a). There are aggregate outcome indicators, which are matched against set targets for a particular year – poverty reduction, GDP growth, or forest cover.
(c). There are aggregate output indicators standing for outcomes, which are matched against set targets – balance of payments, import/export, structure of the GDP, or composition of the workforce.
(c). There are sectoral outcome indicators, which are matched against set targets –IMR, Maternal Mortality Rates (MMR), or school completion rate.
(c). There are sectoral output indicators, standing for sectoral outcomes, which are matched against set targets – crop yield rates, area under crops, roads made, attended births, or enrolment rates.
(e). Proxy indicators – e.g. for governance, inclusive growth, others.

Ministry Level

72. The actual linking of programmes, budgets and M&E, happens at the ministry level. Here, the department of planning in the concerned ministries (are expected to) notionally have the overall responsibility in the management of the M&E system for 'programme planning and budgeting'. They are expected to operate in close cooperation with the departments of accounts and finance and the implementing departments to prepare the annual programme budget. They are also expected to regularly prepare data profiles as in Proforma Tables 1-14 and additionally be responsible for overseeing programme evaluations and producing formal Programme Evaluation Reports for tracking progress for the NSDP. If proforma like those in Proforma Tables 1-14 are not developed already, effort should be made to develop them. A sample checklist could be seen in Box 4.

73. However, the departments of planning alone cannot be responsible for all planning, M&E, etc. The M&E function must be included into each of the technical and provincial departments' existing planning and statistics offices or / and accounts offices. If some ministries do not have the appropriate outlets at the provincial levels, either they should be created or the responsibility should be given to other authorities – assign additional work. The findings and data from the provincial

and technical levels must be shared with the central ministries' planning departments periodically.

Activity/Project Level

74. Quantitative data at the micro/project level required as in Proforma Tables 1-14 are fairly straightforward: resources deployed in a time period, tasks completed, etc. They would be a part of the PERT Charts (programme evaluation and review techniques) in most engineering projects, though other service delivery activities also maintain their own proforma (see Box 6).

75. The challenge in the collation and reporting of data lies beyond the activity or project level. In Cambodia, different ministries and authorities use their own methods. In the health sector, this is presently done at the Operational District level (there are some 80-82 in the country), and in agriculture this is done at the commune or district level. Education, Rural Development, others, all maintain their own records at their pre-determined levels, with differing periodicity, definitions, etc. There is nothing wrong in this approach, though the system could be made more efficient if there were to be an M&E office at the district level or for a group of districts if districts in some areas are small and unequipped, to which information from all projects and facilities (cutting across sectors) is reached. This office would then collate and aggregate the information in a scientific manner and pass it onwards to ministries in electronic form. If there are discrepancies in definitions, filling up the proforma or data error, they could be fixed at the district M&E office level. The district M&E office could be directly reporting to the provincial governor's office.[18]

76. There are many issues requiring resolution and tasks requiring completion if such an office were to be created.

(a). Foremost, each ministry and central agency must agree to share its grassroots information to a relatively autonomous M&E office at the district having a dual chain of command: to the provincial governor and to ministries.
(b). Along with agreeing to share their information, the ministries must also agree to the scrutinising, aggregating and computerising of data, which will be done at the district M&E office.
(c). For (1) and (2) to happen, a dialogue mechanism between the ministry level and the district M&E office must be established.
(d). Logistics on how the data would flow-in from the field and flow-out to the provinces and ministries will require putting in place. Wide Area Networks and VSAT[19] are some options for information outflow, practiced elsewhere in the world, and could be examined.
(e). The M&E office will require full equipping (computers, air-conditioners, vehicles) and staffing by skilled data- and computer-literate personnel.
(f). The office must be adequately funded.

4.1.2. Training and Capacities

77. A network consisting of government officials, technical experts, civil society organisations and the private sector, led by the NWGM&E can identify capacity gaps and capacity development initiatives in M&E. At both, the national and sub-national levels they can establish standards, analyse gaps, and formulate capacity development plans based on international good practices. NWGM&E could also advise on implementing and monitoring those proposals at the individual

[18] A number of line ministries/agencies draw their data from the commune and village records. However, when aggregated, the numbers do not necessarily tally with the numbers that the Commune Database (CDB) brings out, also based on the commune and village records. This suggests that there is need to set up offices at the district level to scientifically reconcile the data coming from different sources
[19] VSAT is Very Small Aperture Terminal. It is used for electronically transmitting data.

ministry levels. The NWGM&E can further define core attributes, share good practices, and engage in dialogue with development partners. To encourage this effort, the Development Partners could be requested to support the NWGM&E on a sustained basis for, say five years.

Box 5: A Checklist of M&E Data Collection and Management

Personnel and Capacities
-In the sub-programme, programme or ministry's organizational structure, position(s) responsible for M&E are defined.
-Job descriptions for those positions clearly define M&E responsibilities and M&E positions filled in.
-Those with M&E responsibilities have access to technical assistance and/or training and they communicate and collaborate with M&E staff of other units within the ministry.
-Each sub-programme, programme or ministry has a manager responsible for ensuring strategic use of M&E data for decision-making.

The M&E Plan
-Each sub-programme, programme or ministry has an M&E plan and each sub-programme's M&E plan is linked to the programme's M&E plan, in turn which is linked to the ministry's M&E plan.
-Sub-programme/programme staff members participate in the preparation of the M&E plan.
- Each sub-programme, programme or ministry's outcomes and outputs are clearly defined, aligned to the indicators.
-Indicators are fully defined, and disaggregated (by gender, region, other) and have baseline and target values defined
-The data collection method for all the indicators is clearly stated and data sources of all indicators specified.
-The frequency of data collection is stated for all indicators.
-There is an annual M&E work plan (which describes the priority M&E activities and defines responsibilities, costs, funding and timeline for delivery of outputs).
-Responsibilities for data collection are clearly defined.
-Costing is done for the M&E plan and resources are available to implement the M&E plan.

Routine Monitoring
-The M&E system generates routine data for relevant (e.g., input/process and outputs) indicators.
-Information is readily available from existing databases or other sources.
-All data collecting personnel use the same operational definitions for the routine monitoring indicators when the data are gathered from different points of service (e.g., schools or districts).
- Data collected by different entities is entered on standardised proforma.
- Completeness and timeliness of data is verified and mistakes corrected before data are aggregated.
- Procedures are in place to reconcile discrepancies in data.
- Data are analysed (e.g., by comparing changes over time; actuals v. targets).

Periodic Surveys
- The M&E system includes periodic surveys to generate data for specific indicators.
- Beneficiary/stakeholder perspectives are solicited.
- The sample is appropriately determined so that the results are generalizable.
- Surveys are appropriately timed to enable trend analysis.
- Controls are in place to prevent pitfalls and biases.

Databases
- The M&E system is fully electronic: methods, store, profile generation, and retrieval.
- IT equipment and supplies are available to maintain the database.
- Quality control mechanisms are in place to ensure data are accurately captured.
-Human resources for maintaining and updating the databases and IT equipment and infrastructure are adequate.

Quality Control
-Supportive supervision takes place (e.g., a national level M&E official goes to a district to find out how the M&E system is being implemented at the district level).
-The results of supportive supervision are recorded and feedback is provided
-Data auditing processes are in place to verify the completeness and accuracy of data management processes (e.g., field visits, and internal consistency checks)
-Data auditing results are written down and feedback provided to those entities whose data was audited

Evaluation
- Evaluations are planned to collect data for specified indicators
- Financial resources are available for planned evaluations
- Evaluation findings are disseminated and discussed

Use of M&E
- Reports are regularly disseminated to a range of stakeholders (including data providers)
- Data reported meets the needs of the director, manager and other stakeholders
- M&E data is used to inform the decision-making process

Source: Adapted from Ministry of Health, RGC

4.2. Data generating Process

4.2.1. Surveys

78. As stated earlier, data on inputs and outputs could be collected from departmental records and reported to the next higher authorities. The challenge lies in measuring outcomes. This requires conducting field surveys and inquiries to determine the impact on the recipient/beneficiary populations. Example, the impact of agricultural extension (in the form of farmers actually adopting scientific agricultural practices), or of spreading information about scientific MNCH practices (in the form of young couples actually adopting scientific practices), can be known only through talking to or observing the behaviour of the target populations, for which conducting field surveys is essential. Of course, in a few instances there is possibility of knowing such information through administrative records, like tuberculosis cure rate or child vaccination rate, but such instances are not too common.

79. Too many large-scale targeted surveys, however, are too expensive to conduct. In the more general and all-purpose surveys like the CSES or CDHS[20], the data generated indicate both, the effect of policies and effects of independent events outside the realm of policy. Thus, if the poverty rate in Cambodia reduced by 7-8 percentage points between 2008 and 2009, a significant portion of the credit was definitely because of factors outside the realm of public policy (like a huge price rise of agricultural products internationally). [21] Interpreting data from surveys in terms of establishing causal relationships requires skills at data interpretation, some quantitative modelling and also TC-based modelling.

80. As stated above, large surveys are broad based inquiries meant to answer many more questions in addition to presenting a profile of the state of the economy and society. They might not be directly answering queries in regard to a specific intervention. In fact, they might not even address certain questions. Thus, interpreting survey data could be a trick task. Take two cases that have required discretion in interpreting results:

(a). The CSES of 2012 suggests that the proportion of households to total households receiving free or subsidised health service was 12%. Yet, the policy requires that this option be extended to all households identified to be below the poverty line (about 20% – i.e. those holding the ID-Poor Card). Does it mean that some otherwise eligible persons are not getting the service? The answer could be, yes or no. While an interpretation of 'yes' is obvious, the interpretation of 'no' is equally compelling: that the 8% who did not avail of the medical services in that year, in all probability did not require the health services offered under the scheme's spectrum in that year.
(b). There was a serious exploration made to assess the possibility of measuring the impact of a cash transfer schemes on the wellbeing of the beneficiaries through some of these large surveys. However, all surveys other than the population census—which is conducted 10-yearly and collects data on a relatively few variables—are (nationally representative) samples. In all likelihood, they will not capture the impact of cash transfer programmes since these programmes have been introduced very selectively, only in a few districts. Efforts to use these surveys for such evaluations were dropped after some deliberation.

81. This brings in the issue of conducting small sample / targeted surveys. Small sample surveys are like other survey-based studies but their scope is often purposive: they probe only specific problems but they probe deeper into issues as compared to large-scale surveys. In several

[20] CSES = Cambodia Socioeconomic Survey; CDHS = Cambodia Demographic Health Survey
[21] See, 'Poverty Alleviation: An Approach to an Approach', General Directorate of Planning, Ministry of Planning, RGC Phnom Penh, 2014

instances, it is essential to know about 'how' 'why' of the economic, societal and behavioural aspects, for informing on effective policy intervention. These surveys provide data on these aspects and fill in the gap. Some typical examples are given in Box 5.

Box 6: Sample List of Studies

AGRICULTURE
1. Farm size and land/labour productivity, efficiency and profitability
2. Fertiliser/irrigation response curves – incl. ecological impacts
3. Water logging and drainage – impact upon farming, productivity and profits
4. Studies on the adoption of High Yielding Variety (HYV) seeds or Systematic Rice Intensification methods
5. Marketing, contract farming, storage, wastages and prices
6. Crop-farming, fishing, livestock, cropping systems
7. Roads, connectivity information and farm prices/profits
8. Water-sharing, head-end versus tail-end water distribution, user fees, water-user societies

RURAL DEVELOPMENT
1. KAP studies with regards to using health, water, sanitation and hygiene, and child health
2. Cash transfers and their impact (intended and unintended)
3. Food/cash for work programmes (intended and unintended)
4. Impact of nutrition schemes on health, schooling, women's status

CHILD/EDUCATION
1. Child labour – how is it invoked and promotes, how it could be stopped
2. Children's school (non) attendance, children lagging behind
3. Key issues in teaching quality, teacher attendance
4. Training needs and employability

82. Small sample studies could deploy a combination of quantitative and qualitative methods to determine the 'how' and 'why', in turn which form the building blocks for TC-based modelling to explain certain phenomena.

83. The government will do well conducting such studies with assistance from its own research outfits (institutes working under ministries) as well as independent research outfits (universities, private sector) in the country.

4.2.2. Administrative Statistics

84. Most ministries collect administrative statistics from their field outlets (custom points on custom revenues, immigration authorities for tourism, border checkpoints on international movement of goods and services for trade, etc.). Some statistics on outcomes, however, are collected through 'heuristic methods', not necessarily scientific. These need to be interpreted with care. Also, the quality of statistics, data collation and comparison over time and across locales, and many statistical aspects require some extra attention. Effort should also be made to match administrative generated from more than one source.

4.2.3. Issues in computing indicators from Meta Data

85. M&E Indicators are at times ratios and also complicated formulations arrived at from meta-data. This is particularly so in the case of outcome monitoring at more aggregated levels. There are two issues here:

(a). Definition of indicators: There are several indicators, which could be defined in more than one way. Example: Fertility ratio can be calculated using the Brass P/F ratio; the Arriaga-Brass method; the Rele method; or direct estimate. Similarly, Mortality Rates (different age groups, including the IMR) can be calculated using the Palloni-Heligman: UN General Model; Trussel: Coale-Demeny

West Model; or a direct estimate. The M&E authorities have to choose which method to use, though the general principle is to follow the international practice, for which the data collection method and samples might also require re-visiting.
(b). Complex indicators: Some indicators are calculated using fairly complex approaches drawing data from multiple sources. Example, GDP is calculated from a range of data on many sectors, some directly observed, some estimated based on samples, and some from proxy variables. Also, most ratios in the sectors of health and education consist of a technical variable in the numerator (drawn from the concerned sector) and population (drawn from the census forecasts or other survey updates). Actually, more than one estimate exists for population, as often these numbers are revised due to changes in migration patterns and / or the fertility and mortality rates. M&E authorities have to choose carefully those data sources, which are most compatible with each other and with the generic definitions of the indicators.

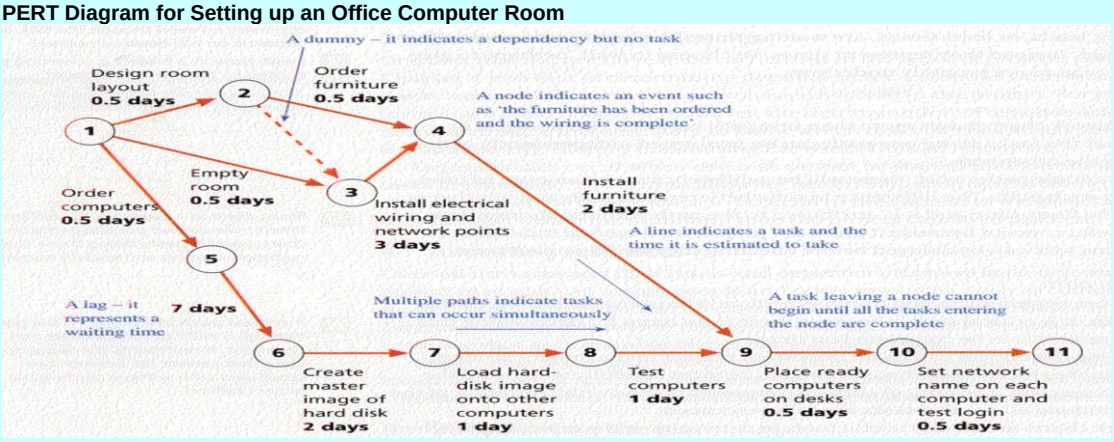
Box 7: Project Evaluation and Review Techniques

The Project Evaluation and Review Technique (PERT) is a method for planning and coordinating individual projects. PERT is a road map for a particular program or project in which all of the major events have been identified, together with their corresponding interrelations. PERT charts are often constructed from back to front because, for many projects, the end date is fixed and the contractor has front-end flexibility." A basic element of PERT-style planning is to identify critical activities on which others depend. The technique is often referred to as PERT/CPM, the CPM standing for "critical path method."

The chief feature of PERT analysis is a network diagram that provides a visual depiction of the major project activities and the sequence in which they must be completed. Activities are defined as distinct steps toward completion of the project that consume either time or resources. The network diagram consists of arrows and nodes and can be organized using one of two different conventions. The arrows represent activities in the activity-on-arrow convention, while the nodes represent activities in the activity-on-node convention. For each activity, managers provide an estimate of the time required to complete it.

The time estimates managers provide for the various activities comprising a project involve different degrees of certainty. When time estimates can be made with a high degree of certainty, they are called deterministic estimates. When they are subject to variation, they are called probabilistic estimates. In using the probabilistic approach, managers provide three estimates for each activity: an optimistic or best case estimate; a pessimistic or worst case estimate; and the most likely estimate. Statistical methods can be used to describe the extent of variability in these estimates, and thus the degree of uncertainty in the time provided for each activity. Computing the standard deviation of each path provides a probabilistic estimate of the time required to complete the overall project.

PERT Diagram for Setting up an Office Computer Room



4.3 Summing up

86. This section proposes setting up common decentralised administrative offices at the district level (or for a group of districts) to collect clean and collate data for M&E purposes. This component of an M&E system assumes importance since the correctness and timeliness of data are central to making informed decisions. The section further proposes integrating statistical analysis, including computation of indicators and indices from multiple data sources, into the system.

PART 5: THE NSDP 2014-2018, M&E FRAMEWORK

87. This part synoptically presents the monitoring framework of the NSDP 2014-2018 at the aggregate level. The text in this part is meant to inform the reader of the application of the concepts and definitions discussed in Parts 1-3 on the one hand, and also present the real life measurement of progress in a 5-year plan process on the other. At this level of aggregation, it is possible to conduct outcome and impact evaluations alone, as mentioned in the text earlier.

88. At the aggregate country level a 5-year plan sets very broad goals and targets, which are then translated into sectoral targets and then into programmes, projects, and so on. The government, in its Rectangular Strategy (RS) Phase 3, has set the broad targets. The NSDP translates these into workable propositions through formulating sectoral / ministry policies and planned actions. The planned actions are then further operationalized into programmes and projects. As the latter two lie within the domain of line ministries and other implementing agencies, they will not be discussed here.

89. The four broad targets of RS3 are:

(a). Ensuring an average annual economic growth of 7%. This growth should be sustainable, inclusive, equitable and resilient to shocks, through diversifying the economic base to achieve a more broad-based and competitive structure, with low and manageable inflation, a stable exchange rate and steady growth in international reserves.
(b). Creating more jobs, especially for youth, through further improvement in Cambodia's competitiveness to attract and encourage both domestic and foreign investments.
(c). Achieving more than one percentage point reduction in the poverty rate annually, including realising the Cambodia Millennium Development Goals (CMDG), while placing high priority on the development of human resources and sustainable management, and use of environmental and natural resources.
(d). Improving institutional capacity and governance at both national and sub-national levels and ensuring effectiveness and efficiency of public services to better serve the people.

90. These are inter-sectoral targets formulated with the aim to lift the economy to the next stage of development in an inclusive manner for the benefit of the larger masses, especially the poorer sections. When translated into practice, a Results-Framework would have these four points as the targets (or goals), and a Policy Matrix—as in Table 4—would form the RF's other components.

Table 4: A POLICY MATRIX – NSDP 2014-2018		
Goal	**Policy**	**Planned Action**
SECTOR: GOOD GOVERNANCE		
Fighting corruption	-Promote education for fighting corruption -Seek public participation -Enforce law	Undertake prevention activities; build institutional capacity & seek accountability; seek public support; ask for private sector participation
Reforming legal and judicial systems	-Strengthen professional capacities of law officials -Promote and strengthen court administration	Implement law and judicial reform strategy; develop new laws; make litigation efficient; increase institutional capacities
Reforming public administration incl. in D&D	- Strengthen quality & delivery in administration - Build capacities raise remunerations - Enforce Law of Finance, Regulation and Property Management of Sub-national Administration - Strengthen unified administration	Make public service transparent & efficient; transfer key central functions, resources and power to SNAs; Increase SNAs' collection of own source revenues; improve SNAs' vertical and horizontal accountabilities; increase councillors' authority.
Reforming armed forces	Develop human resources; modernise technologies; augmenting technical equipment; support veterans; strengthening relations between armed forces and public; involve armed forces in civilian work	
SECTOR: OVERARCHING ENVIRONMENT FOR IMPLEMENTING THE STRATEGY		
Peace, Political Stability, Security and Public Order	-Promote democratic values -Supress crimes and improve safety -Combat drugs	Civic education; capacity building of investigators; improve conditions of prisons; supress demand and supply of drugs, rehab, improve international cooperation on drugs
Favourable Macro-Economic and Financial Conditions and Environmental Sustainability	-Ensure a mutually consistent fiscal and monetary policies -Keep public debt manageable -Promote private sector & labour markets -Encourage economic diversification -Implement "Financial Sector Devp. Strategy 2011-2020" -Enhance links bet. budget and policies -Enhance capacity of ministries in finance	Fiscal: Implement PFMR; review Revenue Collection Policy and implement medium term revenue collection strategy 2013-2018 ;improve tax laws and widen tax net; audit all revenues; implement Law on Non-Tax Revenue Collection, and on State Property Management; improve contract enforcement with concessionaires; seek new revenue sources Policy: Speed-up economic diversification and growth; further the Tourism Development Plan 2011-2020; promote entrepreneurship among Cambodians
Partnerships in development	-Prepare the "Strategy on Development Cooperation and Partnership 2014-2018" to address: (1) the necessity to redefine the role of development cooperation financing; (2) anticipated decline in concessional financing; and (3) transfer of technologies -Enhance effectiveness of Government-Private Sector Forum to promote participation of private sector -Conduct annual meetings between the RGC and NGOs; enact the law on Associations -Strengthen the Cambodia Development Cooperation Forum, Government-Private Sector Forum, Consultative Meeting between the Government and NGOs, and Bilateral Consultation mechanisms, to transform all these forums into a "Cambodia Development Forum" to serve as a unified platform for dialogue between the government and other stakeholders	
Deepening Cambodia's integration into the world	-Continue policies to attract investments from domestic and foreign sources -Diversify the production base - Expand export markets thru transport connectivity and logistics systems - Strengthen conflict resolution - Join ASEAN as equal member	Production/export: Introduce Industrial Development Policy; increase exports through product diversification and new markets; improve transport infrastructure and logistics; comply with non-tariff barriers (product standards, sanitary and Phyto-Sanitary Standards) ASEAN: Fulfil Cambodia's role in regional and international affairs and manage changes resulting from participation in ASEAN integration in 2015

Goal	Policy	Planned Action
SECTOR: PROMOTION OF AGRICULTURE SECTOR		
Improved productivity, diversification and commercialisation	- Promote crop diversification and improve yield rate in all crops (thru generation and transfer of knowhow) - Commercialise agriculture and get market surplus - Adapt to climate change - Invest in irrigation (incl. setting up water user associations) - Improve collection and grain storage facilities for farmers to get stable prices -Improve regulatory framework for seeds -Mechanise agriculture, extend credit facilities - Promote contract farming - Improve farmers' skills - Control plant diseases	Land and facilities: Classify land by agro-ecosystems for crop zoning; create Agricultural Centres (communes) and tele-centres (districts); improve extension services; promote product exhibitions Farm level strengthening: Strengthen farmers' organisations and cooperatives; promote agri-business; promote farm diversification/ 'farming systems'; research on household/farm economics, and KAP Institutional: Improve agricultural machinery supply-chain and services and scale-up users' skills; promote networks between researchers, traders, manufacturers, agricultural-machinery sellers and farmers' cooperatives; develop standards and lab services for agricultural products; disseminate information on markets; implement the law on crop protection and phyto-sanitary law; legislate on copyright of breeders and farmers' cooperatives
Promotion of livestock farming and aquaculture	-Raise production & export of freshwater- and marine-fisheries, aquaculture (incl. processed products) -Develop livestock farming: improve breeds and feed production, and promote farming systems in livestock -Enforce sanitary standards for livestock products -Encourage investments in medium and large-scale animal- and fish feed - Improving livestock extension services, credit and market access to farmers -Establish modern slaughterhouses - Facilitate trade in livestock (and products), and fish (and products)	Livestock Provide better veterinary services; breed animals and improve quality of breeds; promote use of animal manures for biogas; strengthen research on animal health and livestock production; foster markets for livestock and livestock-originated products; Fish -Encourage fishing communities to participate in NR management -De-mark fishing lots; establish an efficient fish marketing mechanism; promote conservation with eco-tourism (act against illegal encroachment of flooded forests and illegal fishing gears) -Promote aquaculture; fish processing – facilitated by transfer of technology
Land Reform and Clearance of Mines and UXO	-Strengthen and expand the scope of laws on Land -Accelerate land registration -Ensure conservation/use of land and NR (prevent encroachments, act against speculation, confiscate land on violation of contracts) -Distribute state land, esp. land confiscated from economic land concessionaires and cleared minefields to the poor, disabled veterans, families of deceased soldiers and veterans -Resolve land disputes as per the law through either court or out-of-court land dispute settlement -Implement "National Mine Action Strategy 2010-2019"	Land administration: Speed up land registration (esp. state lands; indigenous lands) and reach 6-7 million parcels; accelerate dispute resolution; finalise a new Land Law (legislations: Pre-emption Law, Secularisation Law, Law on Land Tax, Land Measurement and Land Sub-division); adopt National Policy on Land and Properties Valuation System Land Distribution: Locate available land for social land concessions; provide for accessing credit service to social land concessionaires Clearance of mines and ERW: Reducing casualties by landmines and ERW through clearance operations and mine-risk education; improve national capacities
Sustainable Management of Natural Resources	-Demarcate & classify/register of forests (incl. flooded forests and mangroves); promote forest rehabilitation -Conserve fisheries; minimise water pollution - Conserve soil quality and water; manage protected national parks, wildlife sanctuaries, protected landscape areas, multiple-use areas, wetlands, biodiversity in conservation areas, and maritime parks -Implement regulatory mechanisms for carbon trading, climate change adaptation measures, environmental financing mechanisms, management of protected areas, and monitoring the environment. - Explore and commercialise in the oil and gas sector and other extractive industries	General Principles: Conduct environmental impacts of development projects; monitor water, soil and air; strengthen environmental education; safeguard biodiversity Climate change and green growth: Create a knowledge management system; monitor and manage greenhouse gases; adaptation; promote green investments, technologies, incentives Biodiversity: Access and share benefits of genetic resources; build biodiversity research centres and biodiversity information systems; strengthen bio-safety Environmental education: Integrate environmental in education; exchange information, skills and resources in the region Oil and gas: Prepare plans for use of gas, otherwise flared; enhance downstream activities for using oil and gas; promote R&D
Rural Development	-Improve access to safe-drinking water and sanitation in rural communities; encourage innovations in sanitation at localised environments; add O&M expenses in all rural development activities -Implement transport and small infrastructure projects -Promote "one village one product" schemes; increase of the scope of micro-finance; foster effective use of low interest rate credit	WATSAN: Expand water in rural areas (construct and maintain wells, ponds, giant jars, roads, small irrigation structures); establish national M&E System on rural water and sanitation Roads: Speed up rural road making; prepare inventory of rural roads for 24 capitals and provinces Climate change: Construct civil structures for climate change adaptations; train VDCs on climate change Other: Develop small-scale businesses and enterprises with credit

Target	Policy	Planned Action
SECTOR: DEVELOPMENT OF PHYSICAL INFRASTRUCTURE		
Development of transport and urban infrastructure	-Construct and upkeep national, provincial and rural roads: paving 300–400 Km of additional roads/year -Enforce measures against traffic violation (incl. overloading), strengthening vehicle safety inspection, installing traffic signs, improving skills of law enforcers -Connect all parts of the country and neighbouring countries by multi-modal, cross-border transport and a logistics systems; expand railways; improve airport and seaport and inland infrastructure -Prepare a master plan for urban public transport and connectivity of production centres on the outskirts of municipalities, main economic poles, industrial zones and special economic zones -Seek private sector participation in developing transport infrastructure	-Roads: Improve > 3,500 Km road infrastructure during 2014-2018; expand 1-Digit National Roads (NR) to AC pavement; widen 1-Digit roads from 2 lanes to 4 lanes; increase pavement ratio in 2-Digit National Roads to 90%; install drainage facilities in 1-Digit National Roads; install ICTV cameras on 1-Digit National Roads; introduce public transportation in capital -Inland waterways: Dredge navigation channels (key sectors); conduct water depth and hydro-graphic surveys in Mekong; construct jetties in in select river ports -Maritime: Formulate Cambodian Maritime Code; complete electric marine chart and multi-purpose terminal at Preah Sihanouk Port -Railways: Construct railways in the northwest and southeast and freight terminals at Phnom Penh and Preah Sihanouk -Freight Service, Multi-modal Transport, Logistics: Prepare a master plan on logistics supply and multi-modal transport incl. urban transport; examine commuter light train -Civil Aviation: Strengthen flight security and safety; strengthen air navigation and airport services
Water Resources and Irrigation System Management	-Expand irrigation systems with flexibility to adapt to climate change and for flood control -Maintain, repair and rehabilitate irrigation systems thru farmer and water user associations -Harmonise development of irrigation infrastructure, hydropower and transportation -Implement national strategy for safe drinking water -Strengthen hydrological and meteorological info -Cooperate internationally in the water sector.	-Irrigation: Rehabilitate/construct and maintain irrigation and drainage structures with farmer participation; promote water management technologies in rain-fed agricultural areas; promote studies in river basins on changing of water discharge, current, and aquifers; focus on prioritised river basin and aquifers conservation; link water with other sectors of environment -Flood and drought management: Construct flood-control and drainage structures; respond to needs in drought-, flood- and other calamities prone areas -Meteorology: Set up meteorological and hydrological systems for weather forecast – floods, droughts; develop maps for irrigation systems, flood control systems, river basins, and inundated land
Electrical Power Development	-Expand capacity of electricity production, especially from 'clean' sources - Encourage private investment in power generation -Aim at realising "by 2020, all villages in will have access to electricity from grid or other sources" -Enhance rural electrification fund - Pursue rationalisation measures for electricity consumption by reducing power tariffs during off-peak hours aimed at improving productivity - Participate in energy cooperation in the region	-Expansion: Explore energy sources (hydropower, natural gas, and coal for electricity generation); ensure stability in electricity supply; encourage efficient use of energy and mitigate adverse effects on the environment; encourage private investment in energy (generation, transmission and distribution); develop all types of renewable energy -Management: Maximise revenue-inflows through royalties, production sharing and income tax; enact laws, regulations and regulatory framework for the petroleum sector; promote regional energy trade through bi- and multi-lateral cooperation
Development of Information and Comm. Technology	-Prepare national policy for development of information and communication technology sector -Adopt laws on telecommunication, cyber-crime and e-commerce and strengthen supervision -Prepare National Broadband Plan -Expand coverage and increase efficiency -Develop e-Governance -Encourage private sector to invest in state-of-the-art technology: Broadband Internet, Cloud Technology and software development	Post and Telecommunications: Expand International Postal System Management at sub-national levels; expand use of postal code; set up postal banks; build optic cable network in provinces and districts (with economic potential); develop ASEAN-Cambodia Internet Exchange System; implement Broad Band; switch to Internet Protocol Version 6; put Submarine Cable network; install Universal Service Obligation where service not available Information: Encourage state and private media to provide services incl. at sub-national levels; modernise technical facilities; develop legal/regulatory instruments for information and broadcasting; improve quality and coverage

Goal	Policy	Planned Action
SECTOR: PRIVATE SECTOR DEVELOPMENT AND EMPLOYMENT		
Strengthening Private Sector and Promoting Investment and Business	-Promote diversified investments in high value adding industrial sectors (incl. in rural areas) -Modernise enterprises (op-grade technologies) -Rationalise incentives for investment projects; improve efficiency thru. Single Window" mechanism -Facilitate trade through: cross-border transport processes, reduced costs of doing business, & strengthened inter-agency coordination -Strengthen 'investment aftercare services' -Strengthen M&E in implementing investment projects -Promote investment in industrial clusters and parks and industrial corridors	Trade and industry: Enforce reforms required under the ASEAN and WTO (incl. intellectual property rights); increase competitiveness through reduced import/export costs; strengthen technical standards and SPS requirements; diversify markets for garments; increase domestic inputs in exports; develop industrial clusters/SEZ for light engineering (esp. along borders); diversify in the processed food and other sectors seeking new markets Business environment: Support industry through inter-ministerial facilitation; delegate authority to SNA for closer access to the clients; build institutional capacities in enforcing property rights, research, creativity and competition Tourism: Improve tourism infrastructure and tourism product quality; create a Marketing and Promotion Board; strengthen tourism security/safety systems at tourist destinations; promote Khmer culture, showcased for filming and festivals.
Development of Industry and Small and Medium Enterprises	-Update SMEs Development Framework to be consistent with the IDP; enhance SME's capacity to link with large enterprises and form clusters; promote entrepreneurship, productivity and specialisation through: technology transfer, access to finance, standards, business counselling centres	Assistance: Offer business development services through: Cambodia Industrial Laboratory Centre, National Productivity Centre, Hatching Technology Centre, Industrial Training Centre, National Standard Centre, and National Metrological Centre; set up a financial service system for SMEs; provide assistance to SME's in formulating business plans, developing accounting systems, and raising finances. Productivity: Enforce Law on Cambodia Standards; seek concurrence from international institutions for Cambodia to issue Product and System Certification Unit
Development of Labour Market	-Strengthen TVET -Strengthen Employment Forum, wherein employers, jobseekers and trainers participate -Develop labour market information system to share info on TVET, wages and skills demand -Facilitate TVET students to transit to higher education -Promote industrial harmony thru adopting law on trade unions; strengthen dispute prevention and resolution systems (labour inspectorate); establish labour courts -Strengthen administration of labour recruitment to work abroad	-Quality: Improve TVET quality and promote public–private partnerships for TVETs; conduct research on labour and skill gaps; improve and spread TVET (esp. in provinces) Promote good work conditions: Amend labour law to ensure good health, safety and work conditions; conduct inspections; control child labour; improve labour conditions thru supporting the 'Better Factory Programme' Employment overseas: Inspect recruiters; monitor Cambodian workers overseas thru Cambodian embassies (>3,000 workers) Enhance harmony in vocational relationships: Disseminate awareness about labour rights; promote collective negotiation and dispute resolution mechanisms Promote labour market information: Ensure one service in every province; finalise the Cambodian Qualification Framework; provide for health insurance, pensions and social security to workers
Banking and Financial Sector Development	-Implement policy/regulatory framework in finance -Strengthen financial infrastructure: payment system, money market, interbank market, others -Expand microfinance services at affordable rates / terms, esp. targeting poor/agricultural community; improve registration, licensing and supervision -Expand insurance and develop new products, especially in life- and micro-insurance -Develop securities market, encouraging firms and companies to launch IPOs -Strengthen financial component of social safety net systems -Strengthen the non-bank financial sub-sector: trust funds, real-estate markets, others	Financial regulation: Use Riel-denominated treasury cards and debt-cards; put in place risk-based monitoring method; implement bilateral SWAPS contract mechanism; create a conflict-resolution mechanism for financial sector; create a framework and Credit-Rating Agency; put in place legal standards related to bankruptcy; bring non-bank institution operations under regulation Financial products: Examine creating insurance institutions (incl. micro insurance); put in place an inter-bank market and money market development; scale up the micro-finance sector, broaden its coverage and reduce interest rates; develop a debt-security market, a state security market, a corporation license market, and other security markets; study establishing a Commodity Future Exchange; build structures for security keeping system, security verifying and clearing system and cash clearing system

Goal	Policy	Planned Action
SECTOR: CAPACITY BUILDING AND HUMAN RESOURCES DEVELOPMENT		
Strengthening and enhancing education, science and technology and technical training	-Update Education Strategic Plan (ESP), Master Plan on Information and Communication Technology (ICT) in Education, and Policy on R&D in Education -Promote science and technology, esp. in agriculture, livestock, aquaculture, industry technologies, energy, construction, ICT, healthcare and environment -Construct more educational facilities -Raise enrolment rates: allow teachers to work in their own villages and communes; increase dormitories; reducing costs incurred by parents; increase budget spending for educational institutions -Increase quality of educational services at all levels -Draw up a national policy on TVET -Implement National Policy on Youth: Physical Education and Sports; further develop sports facilities	Schools: ≥ 80% children attend early childhood care; construct lower-sec schools (1 per commune) and/or upgrade primary schools; set up labs (sciences, computers) and workshops (apprentices); expand scholarships at primary and secondary school levels; set up one branch of university in each province Develop Quality Framework: Train pre-service and in-service teachers; improve curriculum and teaching; provide learning materials; strengthen classroom tests and national assessment tests; participate in international student assessments; implement National Qualifications Framework (TVET); appraise teachers Higher education: Strengthen Accreditation Committee of Cambodia; teach and research in science, technology, engineering and maths; review fees; increase merit-based scholarships; implement student loan scheme; improve libraries and labs Others: Promote literacy and lifelong learning; promote physical education and sports in schools
Science and technology	Establish legal system for S&T; secure numbers and quality enhancement of S&T human-power; enhance investment from government for S&T; promote technologies necessary for national development; promote international cooperation in technology for technology transfers and S&T human-power development; promote green technologies	
Promotion of health and nutrition	-Improve regulatory framework for private health services; enhance awareness about patient rights -Expand outreach: construction of fully equipped referral hospitals, health centres and health posts -Access: expand equity fund; create health insurance -Enhance quality through: (a) improved training; (b) deployment of more health providers in rural areas -Improve MNCH and awareness about WATSAN -Reduce morbidity/mortality from communicable and non-communicable diseases -Draw up guidelines on micronutrient fortification and expand provision of fortification	Improve sexual, reproductive, MCNH and nutrition: Immunise and manage child diseases; deliver children by professionals; extend maternal emergency and newborn baby care services; administer micro-nutrients to infants during the initial 1,000 days Morbidity and mortality: Promote prevention (treated mosquito nets for malaria, early detection for TB/cancer, HIV/AIDS, etc.); expand care for HIV/AIDS, substance treatment; promote oral health, hygiene, sanitation and food safety; strengthen disaster response Access: Ensure access to quality and timely health services through expanding coverage (1 health centre/commune); strive for universal insurance/other coverage Nutrition: Promote breast- and complementary-feeding; expand Vitamin A supplementation and deworming; increase coverage of multiple micro-nutrient supplements; strengthen integrated outreach and community-bases services; scale-up management of severe acute malnutrition with complication.
Development of social protection system	-Implement the national policies on: pensions for veterans and former civil servants, disabled and elderly people; implement Law on Protection and Promotion of the Rights of Persons with Disabilities -Strengthen food security, especially the "Cambodia Food Reserve Management Committee" -Create job opportunities thru training in technical, professional, and entrepreneurship skills; provide state assistance in financing business; expand occupational risk insurance	Social protection: Scale-up the NSPS programmes – social protection for the poor and vulnerable, cash transfers (linked to pregnant women's health and child health/education), public works (for job creation), nutrition, Health Equity Fund, school feeding, and scholarships Eight welfare programmes: social and family welfare; develop child welfare and youth rehabilitation; welfare for people with disability; elderly welfare; services for former civil servants; services for the veterans; social security for general people; institutional capacity and strengthen partnerships
Enhancing implementation of gender equity	**Gender** -Promote women's economic role thru technical and vocational training and entrepreneurial skills -Raise sex ratio in ministries esp. in leadership roles -Fight against gender violence -Enforce laws in measures against trafficking and sexual exploitation of women (and children) -Promote rights of children as stipulated in the International Convention on Children's Rights	Six areas of action 1. Women's Economic Empowerment 2. Legal Protection for Women and Girls 3. Women in Decision-Making in Public Sector and Politics 4. Gender in Health 5. Gender in Education 6. Gender and Climate Change and Green Growth

91. At this level of aggregation and the inter-dependence between goals and policies, a unique target indicator for each action is difficult for identify.

92. The government, in the NSDP cycle 2014-2018, decided to establish a hierarchy of indicators, with the 19 indicators at the highest level expected to capture the impact of several activities at the disaggregated levels. Then a set of 48 sectoral indicators have been decided upon to gauge the impact of the sectoral policies stated in the central and right-side columns of Table 4. The hierarchy of indicators could be seen in Table 5.

Table 5: Hierarchy of M&E Indicators of the NSDP

GOAL INDICATORS **(19)**	**(1) Sustainable Growth**: Real GDP Growth Rate, Per-capita GDP, Inclusive Growth (Index), Structure of GDP, %Forest Cover, Total Cumulative Areas Cleared of Mines/ERW
	(2) Poverty Reduction: Poverty Rate, Gini Coefficient of Consumption Inequality
	(3) Stability: Investment Rate
	(4) Human Development *Education and Skills*: Completion Rate Grade 6 (by sex), Completion Rate Grade 9 (by sex), Skill Level (Index) *Gender*: % Women Holding Decision-making Positions in Public Sectors *Health:* Attended Births, IMR, % Stunted Children, MMR *Water and Sanitation*: % Population Having Access to Safe Water, % Population Having Access to Improved Sanitation
OUTCOME INDICATORS **(48)**	**(1) Macroeconomic Management**: Budget Revenues and Expenditures, Inflation Rate, FDI, Current Account Balance, Two-way Trade, International Assistance **(2) Sectoral Growth and Diversification**: Sectoral Growth Rates, Paddy Yield Rate, Tourist Arrivals, Distribution of Employment by Sectors, Irrigated Area (All Crops), Land Under All Crops, Crop Diversification Index, Marketable Surplus Index, Annual Victims Caused by Mines/ERW **(3) Management of Natural Resources**: Surface of 23 Protected Areas, Community Protected Areas **(4) Infrastructure**: Length of Paved roads, Railway Track Rehabilitated and Constructed, TV/Radio, Print Medium, Per-capita Electricity Use **(5) Governance**: Rate of Issuance of Land Certificates to Farmers, Conflict on Land/Property, Criminal Offences **(6) Human Development Details** *Poverty:* Poverty (rural), Child Poverty, Food Poverty *Education*: Net Primary Level Enrolment Rates (boys and girls), Gross Lower Sec. Enrolment (boys & girls), Proportion of Children in schools Aged (6-17), Proportion of Persons Graduating from University (age 18-35 years) *Gender:* Proportion of Women in Public Sectors, Female share in Wage Employment (sector-wide), Net Enrolment of girls in Hr. Sec. and Higher Education, % Girls to Total Completing TVE, % Women Visiting Antenatal Care at Least Twice, No. of Families Having Problems of Violence at Home *Health*: U5MR, Malaria Fatality Rates, HIV Prevalence, Prevalence of All Forms of TB, Birth Registration, Children Underweight, Women 15-49 years with Anaemia, Children (6-59 months) with Anaemia *Water and Sanitation:* Access to Safe Water, Improved Sanitation (by rural/urban)
OUTPUT INDICATORS	A list is provided in Table 5.2; however, this might not be exhaustive and each implementing ministry is expected to define these as per their sectoral programs and projects
INPUT INDICATORS	Project and Programme-level Indicators to be maintained by implementing ministries and agencies as per the RF developed for each programme

93. Chapter 6 of the NSDP 2014-2018 document contains the computing details of these 67 indicators and also the data sources.

PART 6: CONCLUDING OBSERVATIONS

94. This paper is the third exercise carried under the aegis of the National Working Group on Monitoring and Evaluation, the earlier exercises being on identifying indicators for M&E of the NSDP, and standardising indicators and identifying data sources to ensure uniform comparability.

95. The paper develops a Results Framework, which is fundamental to setting targets, against the performance of an activity, project, programme, etc. could be assessed. It additionally proposes application of the Theory of Change to establish relationships in a RF. It also makes a case for using the Theory of Change for analysing complex situations in regard to how changes happen, and the application of such analyses in the M&E Framework. Unlike the earlier two exercises, this exercise delves into micro/project level analysis. However, it does not stop there: in fact, it walks through activities, sub-programmes, and programmes right though to the ministry level.

96. This is not a research paper. Its main audience are policy makers and programme evaluators in the Royal Government of Cambodia. The key contributions of this paper, put succinctly, are:

(a). Evolution of a Results Framework based on the Theory of Change to disentangle complex situations to establish realistic 'pipelines' in the RF.
(b). Placing M&E within the larger context of a dynamic planning cycle.
(c). Presenting a simplified set of proforma for data collection at the activity, sub-programme, programme, ministry and national levels.
(d). Putting forth issues in the management of statistical data.
(e). Putting forth the NSDP 2014-2018's M&E Framework.