

Minute
Consultation Meeting on the Project Refined Strategy
SCIANCE-WS project

Date: 10 August 2017

Time: 8.30 – 12.00 pm

Venue: Cambodiana Hotel, Phnom Penh

Attendance:

The meeting was co-chaired by Mr. Savuth Yin, Director of the Department of Hydrology and River Works (MOWRAM) on behalf of Mr. Mao Hak, Deputy Director General of Technical Affair, MOWRAM, and Mr. Napoleon Navarro, Senior Policy Advisor, UNDP.

Total of 24 participants from development agencies, private sector, experts were in the meeting (Find in *Attachment 1- Participant list*).

Participants to the meeting: total of 24 participants

Government counterparts	Development agencies	Private Sector, academic institution, and experts
<ul style="list-style-type: none"> • H.E. Ross Sovann, Deputy Secretary General, NCDM • Mr. Savuth Yin, Director, Department of Hydrology and River Work, MOWRAM; • Mr. Am PHIRUM, Deputy Director, General Directorate of Agriculture, MAFF • Mr. Tong Seng, Chief Office, Department of Water Resource and River Work; • Mr. Lim Hak, Officer, Department of Meteorology, MOWRAM; • Mr. Ho Lyhong, Officer, Department of Meteorology, MOWRAM; 	<ul style="list-style-type: none"> • Mr. Nash Modin, Coordinator, DCA • Mr. James Happel, Innovation Manager, PIN • Mr. Harald Gulers, DRR Technical Leads, AAC • Mr. Chea Chanthorn, Project Coordinator, FAO • Mr. Proyuth Ly, FAO • Mr. Napoleon Navarro, Senior Policy Advisor, UNDP • Ms. Pen Rany, Head of Programme, UNDP • Ms. Clara Landeiro, Climate Change Specialist, CCCA project, UNDP; • Mr. Sous Pinreak, Project Advisor, SRL project, UNDP • Ms. Chea Vanny, project assistant, UNDP • Ms. Ratana Norng, Programme Analyst, UNDP 	<ul style="list-style-type: none"> • Mr. Phorn Daravuth, VAS Product Specialist, Smart Axiata; • Ms. Saem Phissara, Senior UAS, Smart Axiata; • Mr. Ly Sarann, Dean, Faculty of Hydrology and Water Resource, Institute of Technology, Cambodia; • Mr. Vuthy Lic, Local Expert; • Mr. Uttam Ghimire, Hydrologist, RIMES, Thailand; • Mr. Atiq Kainan Ahmed, Strategy Refinement Consultant, UNDP • Georgie George, Meteorology Engineer, Consultant from UNDP

Rational of the meeting and key expected outputs from the meeting

In Q1 2017, the SCIANCE- WS project recruited an expert to help refine the project strategy which will guide its implementation in a sustainable manner. As of July 2017, following various stakeholder consultations, the update draft of the project refined strategy was available for the review/comment from key project stakeholders namely Ministry of Water Resources and Meteorology, Ministry of Agriculture, National Committee for Disaster Management, key development agencies and experts who have extensive experience in the relevant areas.

To ensure that the refine strategy is at the level of quality required and suitable to the current context of Cambodia, the project is going to organize a focus consultation meeting with the above-mentioned group of the key stakeholders to get their critical feedback/recommendation before the finalization of the document.

Key expected outputs from the meeting

- Comment generated from key stakeholder for the consultant to finalize the refined strategy;
- Feedback from key stakeholders particularly on the selection of the locations to install the weather stations, stage of stations installation, number of stations for each selected locations/stage, type of technology/weather stations that should be used.

Agenda:

1. Welcome remark, Mr. Napoleon Navarro, Senior Policy Advisor, UNDP
2. Remark by Mr. Savuth Yin, Director, Department of Hydrology and River Works, WOWERAM
3. Presentation on project refined strategy, Mr. Atiq Ahmed Kainan, Consultant, UNDP and Mr. Georgie George, Meteorology Expert, Consultant, UNDP
4. Discussion session
5. Wrap up

I. Welcome Remarks: by Mr. Savuth Yin and Mr. Napoleon Navarro

Both Mr. Savuth and Mr. Napoleon welcomed all participants and expressed the importance of the insightful input generated from all the relevant stakeholders who had been actively engaged during the refinement stage of the project strategy. Without those inputs, the project would not be able to produce this refined strategy.

Mr. Savuth expressed the genuine interest from MOWRAM to have this project moving forward as the project is providing support in the area that the country is currently needed in complement to other ongoing initiatives aiming at promoting early warning system in Cambodia. He also highlighted that the refined strategy shall consider addressing the issue of high turnover of the staff, incentive, and as well capacity development on top of the investment in hardware of early warning stations (both hydro and meteorology).

Mr. Napoleon also expressed the need to hear the feedback from the participants on the overall refined strategy, particularly on the potential engagement with private sector, and the overall comment on the approach used for the investment on early warning stations. Hopefully the project can move in parallel in starting the process to procure the early warning equipment needed to move the project back to its implementation track.

Without further due, Mr. Napoleon, invited Mr. Atiq to present the final draft of the refined strategy, and was followed by the presentation from Mr. George George.

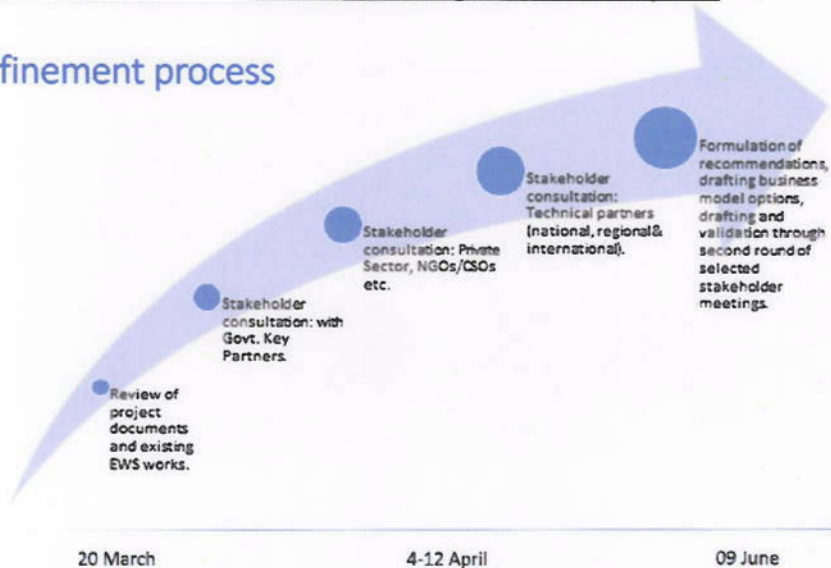
II. Presentation

i. Presentation on project refine strategy, by Mr. Atiq Ahmed Kainan

(Find in *Attachment 2: Slide presentation from Mr. Atiq*).

- **Recent disasters in Cambodia and challenges in meteorology and hydrology early warning system (MHEWS)**
 - Disaster: more frequent - Typhoon Ketsana 2009, 2015-16 El Niño period, Prolonged drought 2016, Flooding 2016, Ground water shortage, Lightening
 - Challenges in MHEWS: Limited observation network, Flood forecasting (MRC transition, tributaries etc.), Limited lead time of forecast products, Location accuracy, Seasonal forecast for agriculture and other sectors, Interpretation of the forecast products, Operation & Maintenance cost financing, Existing Capacity of the technical staffs.
- **Project of project refinement: consultative process was being used**

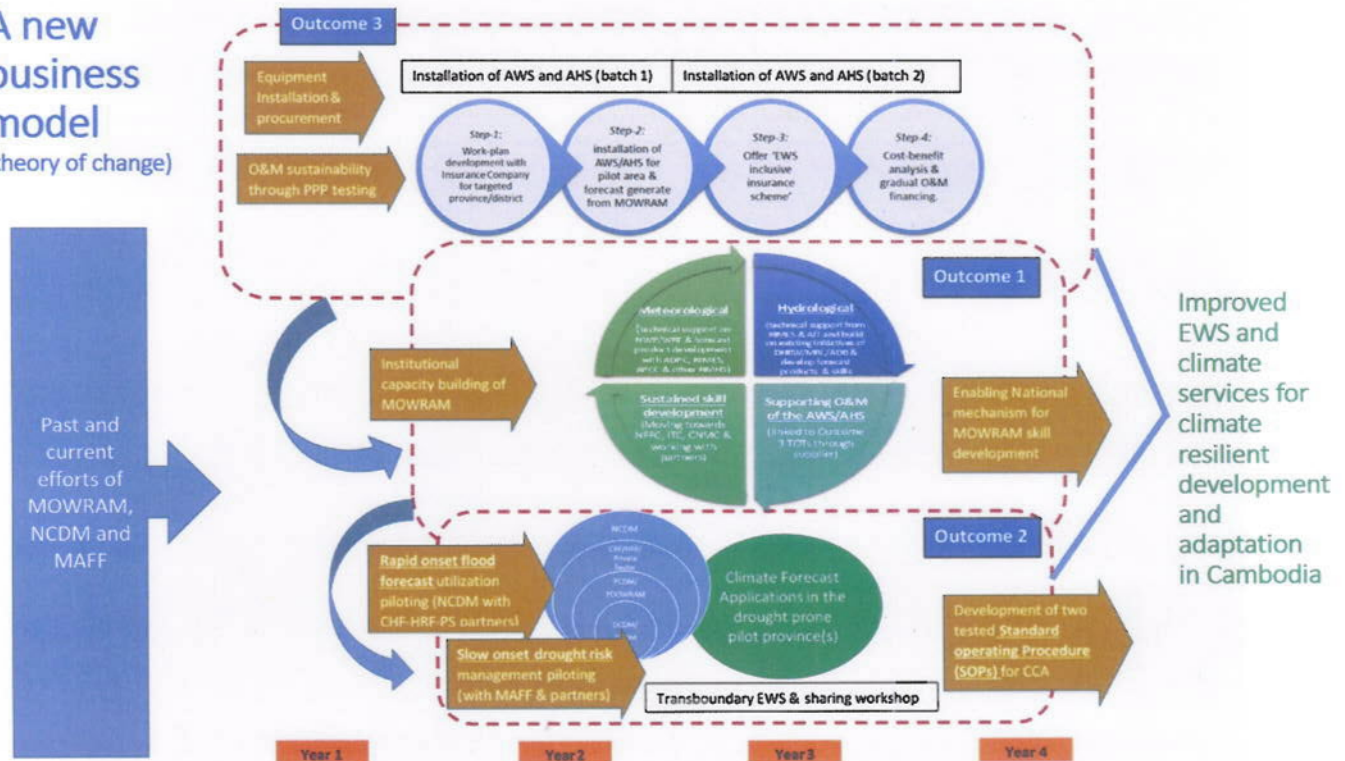
Refinement process



- **List of stakeholders consulted during the refinement stage:** various key stakeholders from development agencies, private sector, academic institutions, key government agencies. Follow up field visit. (find more detail info on stakeholders consulted in *Attachment 2: Slide Presentation of Mr. Atiq*).

- **Recommendation and refinement:**
 - New business model (theory of change)

A new business model (theory of change)



- **Recommendation for outcome 1** - Increased institutional capacity to assimilate and forecast weather, hydrological, climate and environmental information.
 - Issues: Increased institutional capacity building, improved forecast generation and sustainable enablement of in-country capacity building mechanism through collaborative institutional arrangements;
 - Recommendations:
 - This is recommended that developing capacity of MOWRAM takes a two-step initiative: a) enhance the institutional capacity of staffs; and b) sustain future mechanisms for that. In this respect, this outcome needs a bit of modification.
 - Step 1, separate specialized collaborations are established with the regional institutions for skill development support for **hydrologists and water resources modelers**. These modeling capacities of DHRW should also be developed in collaboration with the in-country centers such as ITC and others in the initial trainings.
 - **Numerical Weather Prediction (NWP)** in collaboration with regional and international centers. At this point, ADPC and RIMES are providing such trainings in the region and either of them or both can be invited for providing the regional and national level trainings under contract provisions for the project.
 - Develop **training curriculum with MOWRAM and ITC** in collaboration with the technical services providers from year 2 onwards for sustained in-country training.
- **Recommendation for outcome 2** - Climate and weather information available and utilized for national, sectoral and sub-national planning as well as for transboundary communication in the region
 - Issue 2.1: A targeted piloting with NCDM and MAFF and other MOWRAM and CSO/Humanitarian networks;
 - Recommendation 2.1:
 - This is recommended that outcome 2 is refined taking a **“Piloting Approach”** instead of growing a nationwide activity implementation approach with two pronged approaches:
 - a) **“rapid onset flood forecasting and dissemination piloting”** and
 - b) **“slow onset climate forecasting for drought adaptation piloting”**.
 - Both the piloting will bring lessons for strengthening two different types of **“Standard Operating Procedure (SOP)”** or process for risk reduction and adaptation needed for the climatic contexts of Cambodia.
 - **Rapid onset flood forecasting and dissemination piloting:** This could be for flood early warning rapid notification and done through a systematic planning formation of working group. In this case end-to-end early warning dissemination piloting can be considered. **ere NCDM’s Capacity Building Directorate** can be given primacy to engage and collaborate with this project and work with MOWRAM for enhancing the pilot demonstration of rapid and effective demonstration of ‘flood warning’s’ from national to provincial and commune levels.
 - In this case, the project through **NCDM can collaborate with CHF, HRF partners and collaborate with some private sector cell phone companies** or others to enhance the wider dissemination coverage.

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- Issue 2.2: A targeted piloting with NCDM and MAFF and other MOWRAM and CSO/Humanitarian networks
- Recommendation 2.2:
 - **Slow onset climate forecasting for drought adaptation piloting:** This piloting should adopt a climate forecast application (CFA) approach can be piloted in the drought prone areas. A working group on this can be formed taking various types of partners and **MAFF can be the lead for this pilot testing**. In this piloting exercise, the project can take up a seasonal forecasting product development in collaboration with Outcome 1 where MOWRAM is working improved forecast product development. ADPC, APCC (Korea) or IRI Columbia can be invited for seasonal forecast training and showing how some seasonal forecast products can be developed.
 - MAFF has grown capacity for agricultural extension and this piloting would set up a good climate forecast application process that can be replicated to the wider Cambodia contexts through other supportive projects of UNDP such as SRL project among others.
 - **Transboundary workshop:** The World Bank and CNMC has started to implement the Cambodia part of their IWRM project and potentially be collaborated with UNDP Policy Section for transboundary workshops and information sharing.

Two pilot testing with NCDM (with CHF, HRF, PS) and MAFF

• **Rapid onset flood forecasting and dissemination piloting (with NCDM lead, CHF/HRF, Private Sectors..)**



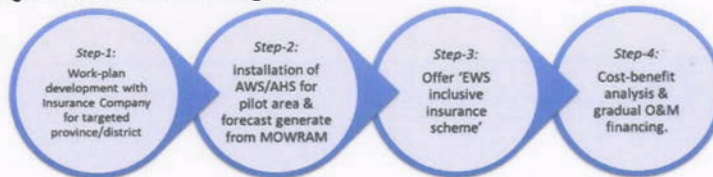
• **Slow onset climate forecasting for drought adaptation piloting (with MAFF)**



Two working groups simultaneously would work, share and develop the activities

- **Recommendation for outcome 3 - Strengthened institutional capacity to operate and maintain EWS and climate information infrastructure, both software and hardware, to monitor weather and climate change**
 - Issue: Options for selective installation of AWS/AHSs and moving towards collaborative PPP
 - Recommendation: Two different options are there:
 - **Option 1 (targeted installation option):** Targeted installation of AWS/AHS to the target provinces where the installations would provide highest impact and would help provide better early warning information to specific risk prone areas; and
 - **Option 2 (wider coverage option):** installation of observation stations can be done in country wide but not having any targeted impacts. Both options have merits and demerits which is context specific and depends on the decision.

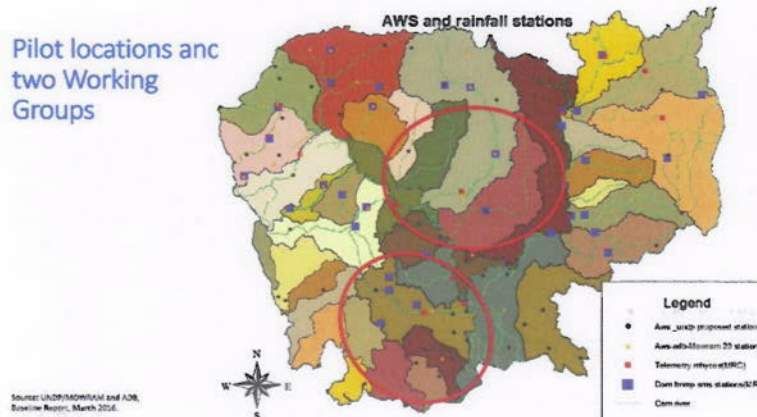
Option 1 (targeted installation option) is recommended to be adopted for the project through adopting a PPP approach with general insurance companies.



On investment in stations:

- Issue: Installation of AWS and AHS procurement and installations
- Recommendation:
 - AWSs and AHSs are not just hardware systems but an inter-operable system which depends on hardware, software, initial maintenance, locally availability of spare parts
 - Immediate procurement through UNDP in consultation with the project technical committee/board
 - Considerations:
 - a) The supplier should provide WMO standard specified quality AWS and AHS which can be operational in Cambodian context;
 - b) the equipment should have updated communication modules which is critical for transferring automated data to MOWRAM without complexities;
 - c) The software and system is compatible with the other observations network in the country and particularly compatible with the current data compilation process of MOWRAM so that they do not face problems in data assimilation for meteorological forecasts as well as flood forecasting in Cambodia;

d) the equipment should come up with solid on-site and follow up training process where the MOWRAM staffs can acquire skills for operation and maintenance.



ii. **Presentation from Mr. Georgie George**
(Find in *Attachment 3*: Slide presentation of Mr. Georgie)

- Opportunity for MOWRAM
- Opportunity for improvement
- Possible value-added services: and potential for collaboration with private sector
- Requirement for sustainability
- Example of public private partnership
- Benefit of PPP
- Risk of PPP
- Conclusion

III. Key discussions and recommendations from group

- **Engagement with private sector:**

- o Timely to engage with private sector through Public Private Partnership, and create a cost-recovery mechanism through a viable business model:

In the past recent years, some private sector (namely insurance and mobile phone companies) started to explore possible product derived from early warning information to give value added product to their customer. While the exploration has started since couple years ago, yet it is still considered as in its early stage and will need to be further expanded. From private sector side, they express the need to have more early warning info that can support to the development of product that their customer is looking for (other than the public early warning product that MOWRAM shared). On this note, bringing private sector using Public Private Partnership model is very timely and will bringing the sustainability aspect to the overall early warning system in the country. Each party can bring in their value added. While the government can share the info (the info for public will be assured to be shared from the government for free) to the private sector for them to further develop the product response to the customer need, the private sector can then in return pay for the info provided by the government and for them to use to cover O&M cost. With the viable business model, this can then create a cost-recover model that can address part of the issue of O&M which is the main sustainability challenge for the early warning system in Cambodia.

- o Need further technical support from the project in developing a viable business model for PPP in the context of Cambodia:

- *Cambodia needs a customized PPP approach:* PPP has happened in other country such as Philippines, India, Sri Linka, Bangladesh, Thailand (still growing), France, Australia, Netherland. Different models are being used, Cambodia needs to identify a model suitable to its context. To do this, it demands more collaboration and commitment to work together among all key stakeholders.
- *Support is needed to elaborate a viable PPP and business approach for Cambodia context:* On top of the above point, it is important to note that the concept of bringing in private sector through PPP model in this early warning sector is still new to stakeholders in Cambodia, hence the project shall focus on providing support to produce a viable Business Model that works even after the project end. The project will support to develop a concept note on engaging with private sector as the initial input to start rolling into the concrete discussion on engagement with private sector.
- *Start with overall commitment from key stakeholder, private sector, through the project:* While private sector has shown interest, the MOU between the project and private sector should be in place to confirm the overall commitment to work together. UNDP through the project can help to provide technical support to develop the MoU, and as per the discussion evolve help to coordinate, and provide technical support/capacity building, together work under the leadership of government to address any hurdle and make adjustment.

- **Investment in Early Warning (hydrology and meteorology) infrastructure:**

Many ongoing efforts have taken place to support early warning system in Cambodia since 2015 until now. The project is seeking the complementarity and build on what is in place already. Compare to the need of the country, the investment from the project together with other ongoing initiative are still not yet fulfil the country demand at big scale in term of number of hydrology and meteorology stations. Yet, the project can strategically use its available investment in way that lead to demonstrating a workable early warning system that response to the country needs, and that is ready for scale up by the national stakeholder after the project end.

Below recommendations/suggestion were generated during the meeting for the project to invest on hydrology and meteorology infrastructure wisely:

- *Using concentrated portfolio approach:* rather than installing the hydrology and meteorology station in all over the country, let's concentrate the establishment of the stations in the two mains areas of the country which are prone to flood and drought (as highlighted during the presentation of Mr. Atiq). Focus in Northern and Southern parts of the country;
- Ensure synergy among different sources of early warning data. This includes the project hydrology and meteorology stations, other data provided by the other types of hydrology and meteorology stations, and other sources in of data such as satellite data;
- It would be useful to as well to include the parameter on ground water monitoring in the stations purchased, as it is very important for forecasting of flood or drought. For the parameter/info on ground water, there is the possibility to collaborate with Action Aid who is having a project called "Mekong ground water". The project covers the pilot areas in Pursat, Kampong Spoeu, and Kampot. Action Aid is currently work on this project with the Ministry of Rural Development, and the project has just started.

- **Capacity development:** project has budget for capacity building for the three agencies:

- **MOWRAM:**
 - Collaboration with institution such as ITC, ADPC, RIMES, other experts network, e.g. French Telecom, to ensure that the capacity building to MOWRAM. On top of technical capacity (e.g. forecasting, maintenance), capacity building for MOWRAM shall as well focus in the areas related to engagement with private sector (e.g. overall engagement, how to bring value added to boost private sector engagement);
 - Issue of staff turnover and incentive are also important on top of limited technical capacity. While the issue of the incentive is a beyond the project control and further discussion is needed, particularly on the issue of high staff turnover, the project can take part in addressing the issue by ensuring that there is the system of replacement in place to replenish when there is staff movement.
- **MAFF:** MAFF as the key beneficiaries of the project, also highlighted that from their side, the capacity is also very limited. Hence, there is the need for capacity building in both using the early warning product from MOWRAM, in in-depth technical capacity to make use the info shared from MOWRAM for agriculture purpose, and as well in engaging with private sector, e.g. insurance company. For the moment, in Laos and Myanmar, they all have insurance for agriculture. In Cambodia, we should have the similar thing. In addition, there might be as well the need to engage with MEF regarding the private sector investment, revenue stream management.
- **NCDM:** like MAFF, NCDM also expressed the need for capacity building to make use of the early warning information. H.E. Ross Sovann also highlighted the importance of working together at national level among MOWRAM, NCDM, MAFF to bring in the best benefit to the country together with other national stakeholders. NCDM encouraged the piloting approach adopted under the project refined model and willing to collaborate on this.

- **Establishment of technical working group:**

Due to the fact the early warning is now very dynamic in term of stakeholders intervention/engagement in the sector, to ensure the effective intervention of the project in the areas of engagement private sector, effective decision on weather stations investment, capacity building, etc. the project should establish technical working group who can function under the leadership of national stakeholders (MOWRAM, MAFF, NCDM) together with other relevant national stakeholders who can be from private sector, development, academic, experts.

The technical working group shall function to enrich the discussion on the following topics:

- **Engagement with private sector:**

- Provide comment/advice on the proposed product/business model that can be explored in the different steps of private sector engagement. While there is the need to enhance PPP, on top of the comment/advice on the viability of the business model by considering its financial return, social and environmental return/impact needs to be as well the key consideration.

- Provide comment/advise on the proposed capacity development for the key national counterparts and as well the key project intervention in enhancing PPP;
- A concept paper for private sector engagement approach role out would be drafted to move ahead with the arrangement.
- **Consultative development of the Two Piloting (flood and drought) outlined in the project refinement:**
 - Two separate technical working group was proposed one on flood piloting and the other on drought piloting and called for formation of those two working groups in an inclusive manner. The flood dissemination piloting could be led by NCDM in collaboration with MOWRAM and CSO/NGO, Private sector entities while the drought piloting can be coordinated by MAFF and MOWRAM in collaboration with the CSO/NGO, Private sector entities respectively.
 - The meeting participants and representatives have adopted this two-piloting approach and called for immediate formation of the respective working group. UNDP and MOWRAM would take actions to move ahead with this arrangement soonest.
 - The working groups can also forward the discussion on selective installation of the equipment through a consultative manner.
- **Action on firming up project implementation modality and establish project board:**

With the finalization of the project refined strategy which will guide the project implementation approach, the project can get back to its implementation track. To ensure the project smooth implementation, there is the need for the project to 1) firm up formally its implementation modality (submit formal proposal to shift from NIM modality to DIM modality), and 2) set up project board compositing of key project stakeholders who will then govern the project implementation onward. Since currently the project is in the transition period where there is no project contracted staff (only one project assistant is currently hired), UNPD focal point will work closely with the MOWRAM to ensure the above two points in parallel.
- **Other:**
 - The project could work with MAFF to generate knowledge through research in the area related to agro-met. The possible topics might cover soil moisture, surface rain, water. To be further defined when the project makes further progress.
 - In the future, if the possibility is much promising, the project can as well explore the possibility of engaging with private sector having interest in ground water related info product.

IV. Closing

Mr. Napoleon expressed thank to all the participants for the active and insightful discussion session which help to confirm the way forward for the project. Based on the meeting discussion, he recapped the key outputs of the meeting which were:

- No objection on the project refinement strategy;
- No objection on the proposed approach used to invest in hydrology and meteorology infrastructure which is to use demonstrated portfolio approach by installing the hydrology and meteorology stations purchased in two areas identified as prone to drought and flood. The project team can then work with MOWRAM to finalize the spec of the stations, while the technical working groups will need to be established and discuss further on the detail plan as to the selection of specific location, number of stations to be installed in each location;
- The project needs to provide technical support in developing concept note to engage with private sector and further consult and engage with stakeholders suing consultation process.
- No objection on the plan to formally request to shift from NIM to DIM implementation modality. UNDP focal person will work with MOWRAM team with support from Project Assistance to take necessary action to fill in the formal procedure to request the shift from NIM to DIM implementation modality, then establish project board which will play role as management body of the project. The project board will follow the same composition as stated in the project document;
- When moving into implementation stage, the project will need to make sure the incorporation of the other points of advice in its workplan: e.g. areas related to capacity development.

Mr. Savuth expressed many thanks to all participants. He reiterated the importance of capacity development on top of the investment in hydrology and meteorology infrastructure. He also emphasised the importance of information sharing and as well welcome the idea of engaging with private sector which is yet to be further explore and refine to identify a viable business model.

The meeting was adjourned at 12.00 pm.

Date

Signature

Mr. Napoleon Navarro
Senior Policy Advisor, UNDP

2017/10/18

Napoleon Navarro