

Managing the El Niño Risk Together

Report on the El Niño 2015-2016 Outlook
Forum and Stakeholder Consultation in
Myanmar

16 February 2016
Nay Pyi Taw, Myanmar



Organized by
Department of Meteorology and Hydrology (DMH), Myanmar and
Asian Disaster Preparedness Center (ADPC), Bangkok

Supported by
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Report on the El Niño 2015-2016 Outlook Forum and Stakeholder
Consultation in Myanmar

Event held on 16 February 2016 at ParkRoyal Hotel in Nay Pyi Taw, Myanmar

Prepared by

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March, 2016
Bangkok, Thailand

Introduction

El Niño is a recurrent phenomenon that occurs in irregular periodic intervals ranging from 3 to 7 years resulting extreme drought conditions in some parts of the world namely, Africa, Indonesia, northern Australia, etc. This phenomenon originates in the Eastern and Central Pacific Oceans with observed above normal sea surface temperatures (SST) by disturbing cold water upwelling off South American coasts (Peru) and weakening trade wind (easterlies) over the Pacific Ocean. El Niño events often prevail more than one year period starting from April / May in particular year and having the peak in December. As a result extreme heavy precipitation events observe over Peru and adjacent countries during El Niño years. El Niño as a slow onset but wider impact situation has now been regarded as a key disaster risk management related concern in the countries globally including in the Asia-Pacific region where Asian Disaster Preparedness Center (ADPC) operates.

In rise of the heightened levels of global and regional predictions on the El Niño situation since the 2015, the Department of Meteorology and Hydrology (DMH) under the Ministry of Transport in Myanmar in collaboration with ADPC has decided to organize an El Niño Outlook Forum in Myanmar to generate a consultation and briefing process in Myanmar at an early stage of El Nino impacts in 2016.

The forum aims a wider sharing of knowledge, dialogue and interaction which would eventually help them understand the adverse impacts and early actions on the ground with higher level of information and knowledge on the El Niño phenomenon which is underway. This would help concern authorities and stakeholders to take informed decisions to predict, monitor and manage the situation in a concerted manner in Myanmar. ADPC's specialized technical professionals from the Climate Change and Climate Risk Management (CCCRM) Department has been providing technical support to the DMH and the sectoral departments to generate a dialogue and to share knowledge for actions. The El Niño outlook forum was organized on 16 February 2016 in the Myanmar's capital Nay Pyi Taw where the involvement of the key sectors and leading multi-agency stakeholders can be ensured.

The event was organized as part of the ongoing regional project on "Strengthening weather and climate services of Myanmar, Bangladesh and Vietnam to deal with hydro-meteorological hazards" supported by the Ministry of Foreign Affairs of Royal Norwegian Government (MOFA-Norway) and implemented by the ADPC's Climate Change and Climate Risk Management Department with an ongoing technical collaboration with MET-Norway.

1. The global El Niño situation in early 2016

Since last year, global and regional centers have predicted that the El Niño 2015-2016 could become one of the strongest on record. We are now observing the impacts globally with increased risk to extreme weather and adverse effects on vulnerable people including Asia, Africa, the South Pacific, and Central America. Right before (on 11 February, 2016) conducting the Myanmar El Nino Forum, the global El Nino and Southern Oscillation (ENSO) diagnostic discussion issued jointly by the Climate Prediction Center/NCEP/NWS and the International Research Institute (IRI) indicated that the El Niño has already produced significant global impacts. The ENSO phenomenon contributes significantly to seasonal climate fluctuations in many regions of the globe, often with social and economic implications for human populations and the environment. They also forecasted, however, the El Niño will

weaken, with a transition to ENSO-neutral during the late spring or early summer 2016. Thereafter, the chance of La Niña conditions increases into the fall. While there is both model and physical support for La Niña following a strong El Niño, considerable uncertainty remains.

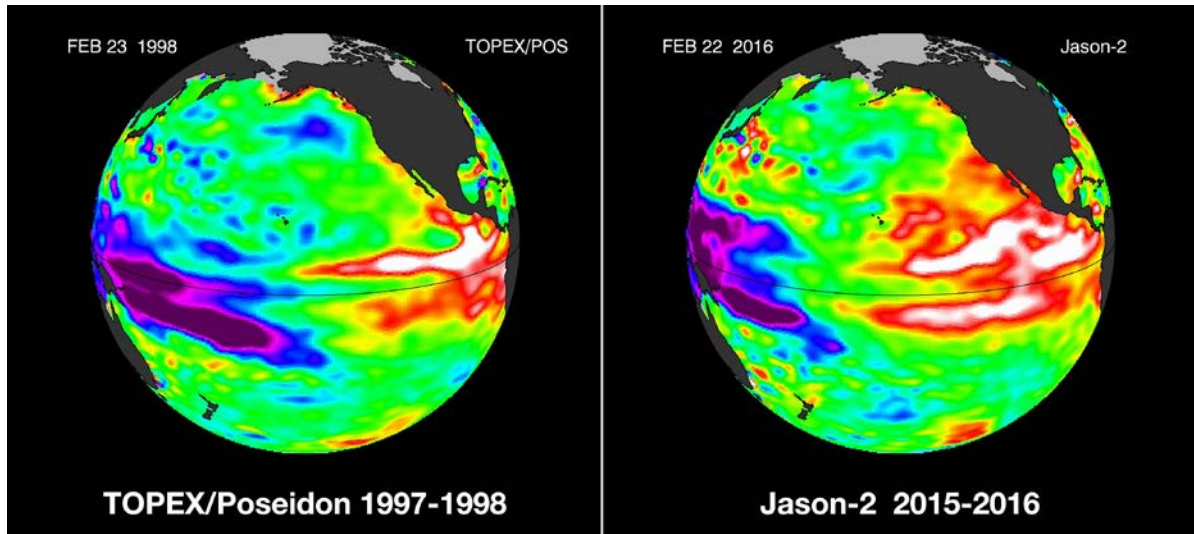


Figure 1. Sea Surface Temperature compared between 1997-1998 and 2015-2016 Episodes.

The Oceanic Niño Index (ONI) is one measure of the El Niño-Southern Oscillation, and other indices can confirm whether features consistent with a coupled ocean-atmosphere phenomenon accompanied these periods. The past ONI index is shown in the table below which indicates the historical episodes of El Niño/ La Niña episodes (1990-present). Red color text indicating El Niño episodes and the blue text is for La Niña months and years.

Year	DJF	JFM	FMA	MAM	AMJ	MJJ	JJA	JAS	ASO	SON	OND	NDJ
1990	0.1	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.4	0.3	0.4	0.4
1991	0.4	0.3	0.2	0.2	0.4	0.6	0.7	0.7	0.7	0.8	1.2	1.4
1992	1.6	1.5	1.4	1.2	1.0	0.8	0.5	0.2	0	-0.1	-0.1	0
1993	0.2	0.3	0.5	0.7	0.8	0.6	0.3	0.2	0.2	0.2	0.1	0.1
1994	0.1	0.1	0.2	0.3	0.4	0.4	0.4	0.4	0.4	0.6	0.9	1.0
1995	0.9	0.7	0.5	0.3	0.2	0	-0.2	-0.5	-0.7	-0.9	-1.0	-0.9
1996	-0.9	-0.7	-0.6	-0.4	-0.2	-0.2	-0.2	-0.3	-0.3	-0.4	-0.4	-0.5
1997	-0.5	-0.4	-0.2	0.1	0.6	1.0	1.4	1.7	2.0	2.2	2.3	2.3
1998	2.1	1.8	1.4	1.0	0.5	-0.1	-0.7	-1.0	-1.2	-1.2	-1.3	-1.4
1999	-1.4	-1.2	-1.0	-0.9	-0.9	-1.0	-1.0	-1.0	-1.1	-1.2	-1.4	-1.6
2000	-1.6	-1.4	-1.1	-0.9	-0.7	-0.7	-0.6	-0.5	-0.6	-0.7	-0.8	-0.8
2001	-0.7	-0.6	-0.5	-0.3	-0.2	-0.1	0	-0.1	-0.1	-0.2	-0.3	-0.3
2002	-0.2	-0.1	0.1	0.2	0.4	0.7	0.8	0.9	1.0	1.2	1.3	1.1
2003	0.9	0.6	0.4	0	-0.2	-0.1	0.1	0.2	0.3	0.4	0.4	0.4
2004	0.3	0.2	0.1	0.1	0.2	0.3	0.5	0.7	0.7	0.7	0.7	0.7
2005	0.6	0.6	0.5	0.5	0.4	0.2	0.1	0	0	-0.1	-0.4	-0.7
2006	-0.7	-0.6	-0.4	-0.2	0.0	0.1	0.2	0.3	0.5	0.8	0.9	1.0
2007	0.7	0.3	0	-0.1	-0.2	-0.2	-0.3	-0.6	-0.8	-1.1	-1.2	-1.3
2008	-1.4	-1.3	-1.1	-0.9	-0.7	-0.5	-0.3	-0.2	-0.2	-0.3	-0.5	-0.7
2009	-0.8	-0.7	-0.4	-0.1	0.2	0.4	0.5	0.6	0.7	1.0	1.2	1.3
2010	1.3	1.1	0.8	0.5	0	-0.4	-0.8	-1.1	-1.3	-1.4	-1.3	-1.4
2011	-1.3	-1.1	-0.8	-0.6	-0.3	-0.2	-0.3	-0.5	-0.7	-0.9	-0.9	-0.8
2012	-0.7	-0.6	-0.5	-0.4	-0.3	-0.1	0.1	0.3	0.4	0.4	0.2	-0.2
2013	-0.4	-0.5	-0.3	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	-0.3
2014	-0.5	-0.6	-0.4	-0.2	0	0	0	0	0.2	0.4	0.6	0.6
2015	0.5	0.4	0.5	0.7	0.9	1.0	1.2	1.5	1.8	2.1	2.2	2.3
2016	2.2											

Source: NOAA/CPC, Feb., 2016.

http://www.cpc.ncep.noaa.gov/products/analysis_monitoring/ensostuff/ensoyears.shtml

2. El Niño situation in Myanmar

Myanmar has remained vulnerable to the ENSO related impacts in the past decades. There has not been much evidences and documentations to understand deeper level of impacts of the past El Niño phenomenon in the country. It was evident that many parts of Myanmar is vulnerable to slow onset hazards such as drought conditions during the past El Niño years and having strong impacts in water resource, agriculture and health sectors. There are evidences of varied nature of the past El Niño episodes in 1982/83, 1997/98, 2009/10 and other periods in scattered manner and data.

The World Meteorological Organization (WMO), which was mentioned in the El-Nino/La-Nina outlook issued in November 2015 that El Niño and La Niña are not the only factors that drive global climate patterns, and at the regional level, seasonal outlooks need to assess the relative impacts of both the El Niño/La Niña state and other locally relevant climate drivers, for example, Indian Ocean Dipole (IOD), Madden-Julian Oscillation (MJO), North Atlantic Oscillation (NAO), etc which is capable of affecting the climate in the adjacent land areas. Regionally and locally applicable information is available from WMO Regional Climate Centres (RCCs), Regional Climate Outlook Forums (RCOFs) and also from National Meteorological and Hydrological Services (NMHSs).

This ENSO context had a spiral impact on food security and the conditions in the country that had often decreased the crop production in various parts of the country. Since there is a strong signal of impacts in the country during El Niño years, the Department of Meteorology and Hydrology and other respective sectoral departments are found very keen in growing further knowledge and information through discussions and forums on a regular basis which can facilitate actions for sector specific policymakers, planners, researchers, university professionals, etc.. This type of discussions and forum seems quite critical to discuss and disseminate outlook of El Niño for the coming months and to have a dialogue with sector specific stakeholders of possible adaptive measures to minimize the risks associated with the event.

In Myanmar, the Department of Meteorology and Hydrology is responsible for providing relevant information, forecast products, alerts, and warnings on likelihood of meteorological phenomenon to the public and concerned agencies to take proactive measures for sector specific planning to minimize negative impacts.

3. The forum as proceeded

The El Nino outlook forum in Myanmar aimed at wider sharing of knowledge, encourage forecaster-user dialogue and discussions for early action and risk management measures for the El Niño onset. The objective for organizing this Forum is to bring relevant stakeholders to discuss local El Niño outlook, share knowledge and to discuss possible impact and adaptation measures for the related socio-economic sectors such as Agriculture, Water Resources, Health and Energy.

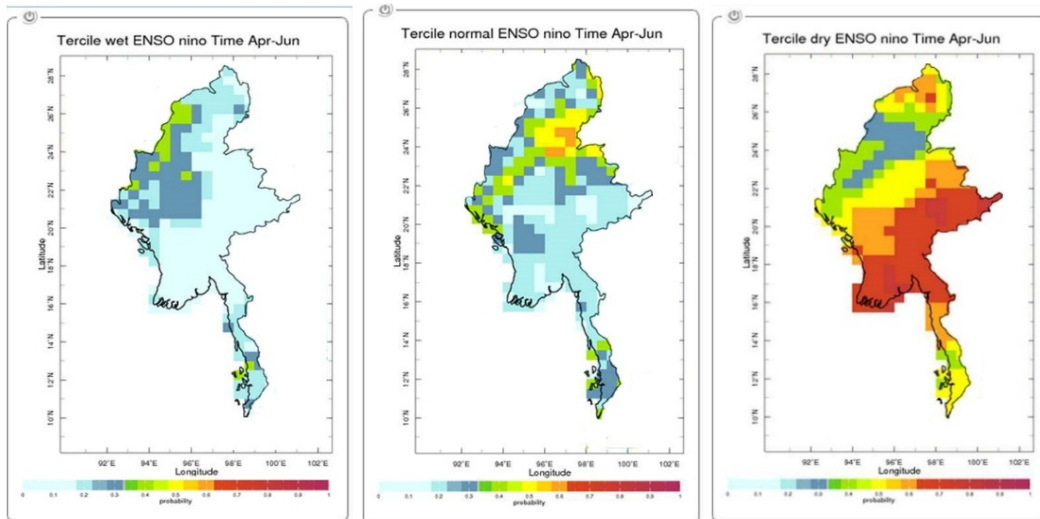
Opening ceremony. The forum was inaugurated by Dr. Hrin Nei Thiam the Director General of Department of Meteorology and Hydrology in Myanmar and Mr. N.M.S.I. Arambepola, Deputy Executive Director of Asian Disaster Preparedness Center, Bangkok. Dr Hrin mentioned that the Department of Meteorology and Hydrology (DMH) is responsible for providing relevant information, forecast products, alerts, and warnings on likelihood of meteorological phenomenon to the public and concerned agencies to take proactive measures for sector specific planning to minimize negative impacts and this particular event will help all the participants and their respective agencies to prepare with more information and knowledge for this ongoing El Nino situation. She has also mentioned that some of climate-sensitive sectors would also present their related activities highlighting how to minimize the expected adverse impact of their relative sectors. The DMH Director General had thanked to ADPC and all distinguished participants for sparing their valuable time here to share their valuable knowledge and to discuss possible impact and adaptation measures for all climate sensitive sectors. Mr. Arambepola in his opening speech from ADPC has highlighted that this forum could bring more information and analysis to support for the policymakers in formulating the strategy to manage the risk and the impacts of El Niño in the country.



Figure 2. A cross section of the multi-agency participants in the El Niño Outlook Forum in Myanmar.

Technical session on past El Niño and current situation and predictions. The event was participated by various sections of DMH, all the key sectoral departments in Myanmar, journalists, international organizations and technical experts from ADPC. Dr Senaka Basnayake, Head of the ADPC’s Climate Change and Climate Risk Management Department has shared the global and regional predictions. The global/ regional predictions of ENSO and

national implications of of El Niño was discussed in detailed in his presentations. Some of the available predictions of early February onwards are outlined in the ANNEX III. Mr Hla Tun, Deputy Director of DMH shared the seasonal outlooks for the country. Mr Atiq Kainan Ahmed, Programme Manager of ADPC illustrated anticipated regional impacts and preparedness issues for the 2015/2016 El Niño.



It was discussed that IRI- has identified six past events of El Niño beyond the year 1980 such as 1982-83, 1986-87, 1991-92, 1997-98, 2002-03 and 2009-2010 which had an impact on Myanmar and among them, 1986-87 and 1997-98 El Niño were well noted with great impacts in terms of temperature rise and the changes of precipitation patterns. In the recent El Niño year 2010, the highest temperatures were recorded at 25 stations, most of them from central areas of Myanmar, during the month of April and May. Up to now, the highest ever recorded maximum temperature in Myanmar is 47.2 degree centigrade observed at Minmu, Sagaing Region on 14 May 2010. Several international centers and institutes announced that the El Niño was becoming strong from moderate condition since August 2015, and would continue to strong up to early 2016. Knowing well the impact of El Niño, the concerned authorities instructed the related Ministries to take preparedness measures to manage impacts of the strong El Niño. During September 2015, DMH had submitted a report including the phenomena of El Niño, the expected weather pattern during the months of October, November and December 2015 and the possible impacts on the agriculture, water resources and health sectors, and this Report was also issued in Myanmar Newspaper accordingly. After that, DMH had updated the El Niño Report and issued again the expected weather for the coming summer period from Feb-April 2016, including the advisory for related sectors on 26 January 2016. The Ministry of Agriculture and Irrigation issues advisories for farmers and the Ministry of Health for the public on how to manage the impacts of El Niño, which indicate the Government concerns in responding the impacts of El Niño.

Sectoral presentations. A set of sectoral presentations on impacts by the respective government agencies representing water resources, agriculture, energy, health and others made discussed their point of view and actions on the ground. Several presentations were made to inform the forum on the El Niño phenomena and its current forecasts and impacts. A cross section of about sixty participants attended the event involving multi-sectoral government agencies, media, international organizations and others. The national media published news of the forum afterwards. Participants highlighted the need for organizing such El Niño forum in the country with the sectoral agencies as well.

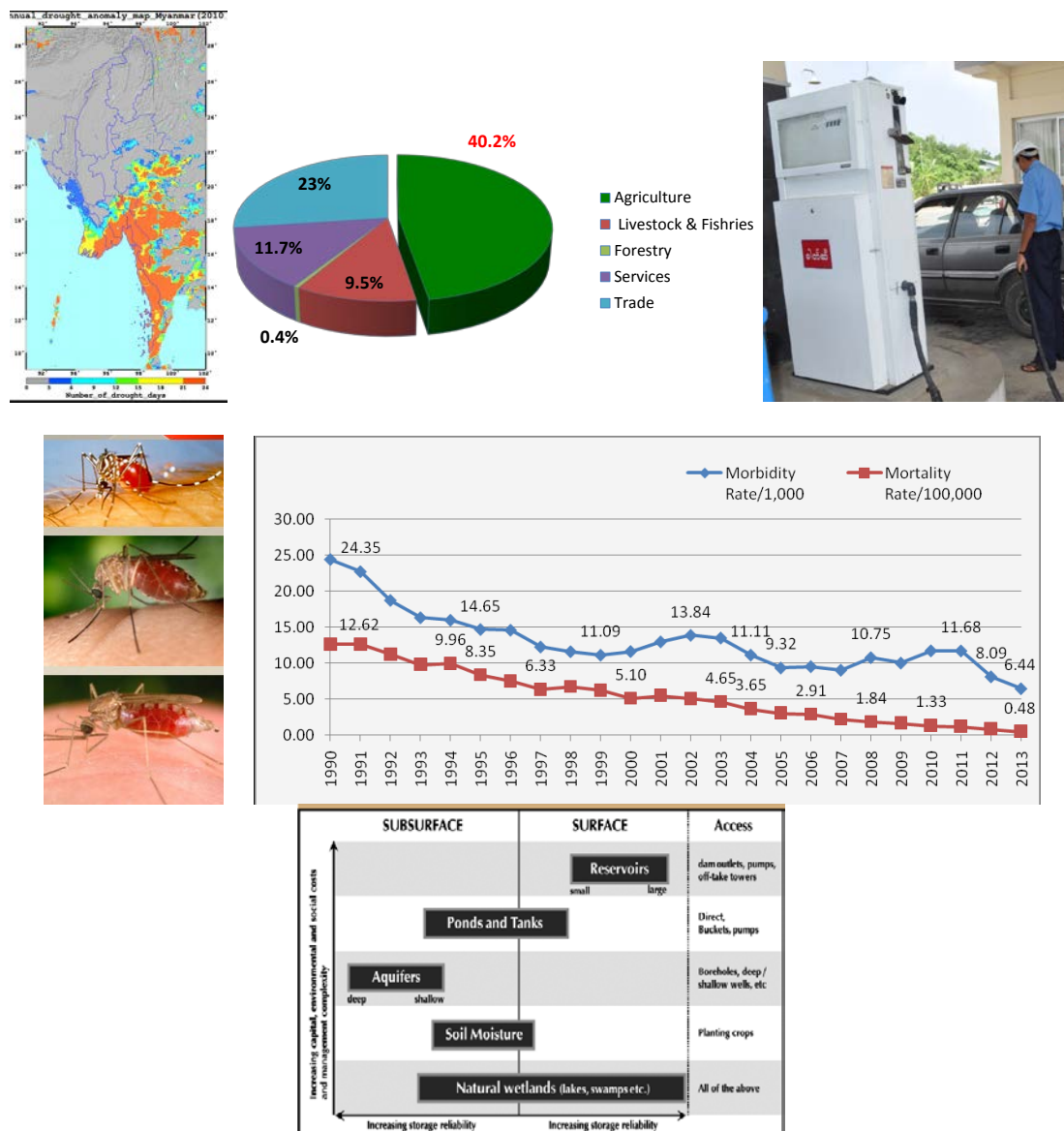


Figure 3. Various issues raised in the sectoral presentations.

Break-out group discussions and plenary. During second half of the forum, a well-rounded facilitated group work was conducted taking following key working groups. The group discussions identified impacts and the possible risk management measures by the respective broader sectors for both short and long-term time horizons. Four break out groups were formed on: a) agriculture; b) water resources, irrigation and utilization; c) public health; and d) energy.



Some of the discussions and findings from the group work are outlined in the tables below.

Impact on the sector	Short-term risk management measures	Long term risk management
Sector: Agriculture		
<i>a) Reduce the agricultural areas (50%)</i>	- Change/ Drought resilient short term variety (Aerobic Rice) (100 Days)	- Climate Sensitive Land Use Planning - Development of Irrigation system
<i>b) Reduce in crop production (major crops)</i>	- Substitute other suitable crops (Sesame, Green Gram) -WD (Alternate wetting and Drying) - CRH (Carbonized Rice Husk, Biochar)	- Development of Seed - Industry
<i>c) Failure of the crop (especially upland and summer rice and oil crop)</i>	- Resistant Variety to biotic and abiotic (Green Gram, Yezin 14)	- Use the advanced technology and Infrastructure
<i>d) Poverty(Household income)</i>	- Crop Insurance - Market control	- Income generating activities (upgrading traditional Career)
Sector: Health		
<i>Impact 1: Increase in morbidity and mortality of communicable diseases (Vector borne diseases- Malaria, DHF, Zika; Rodent borne diseases – Plague; Water borne diseases – cholera etc.)</i>	- Increase surveillance - Immediate logistics management HR, other logistics, Budget management - Strengthen existing cooperation mechanism among sectors	- Continue above activities - Prioritize health problems related to El Nino and La Nina - Research on CD vs Climate Change - Sector wise coordination and cooperation including international cooperation
<i>Impact 2: Disaster related health problem (CD as well as NCD)</i>	- DRR - HE on disaster related health problem	- Continue to above activities - Prioritize high risk area and management

Impact on the sector	Short-term risk management measures	Long term risk management
	<ul style="list-style-type: none"> - Logistics management - Cooperation with among sectors 	<ul style="list-style-type: none"> - National and International cooperation - Disaster resistance community and health structure
<i>Impact 3: Public health infrastructure (buildings, equipments, human resources).</i>	<ul style="list-style-type: none"> - Risk communication - Evacuation plan - Readiness and activation of contingency plan 	<ul style="list-style-type: none"> - Mainstreaming DRR into health sector - Climate change and/ or Variability - Regional and national multi-sectorial management body for reduction health impact by El Nino and climate change
Sector: Water resources, use and irrigation		
<ul style="list-style-type: none"> - <i>Agriculture</i> - <i>Hydropower</i> - <i>Domestic</i> - <i>Navigation</i> 	<ul style="list-style-type: none"> - Water Harvesting Scheme - Irrigation Planning and Cropping Pattern - Optimum Operation Plan - Identify alternative water sources - Education and Awareness - Information sharing and coordination 	<ul style="list-style-type: none"> - Watershed Management - Reforestation - Silt Detention - Dams/Supplementary water Storage pond - Rules and Regulations for Sustainable Development - Education and Awareness
Sector: Energy		
<ul style="list-style-type: none"> - <i>Fire safety challenges</i> - <i>River transportation difficulties</i> - <i>Raw Water and boiler feed water qualities decreasing</i> 	<ul style="list-style-type: none"> - Water saving and more water stock pilling - Enforcement in fire lighting preparation arrangements - More stock of chemical firefighting agents 	<ul style="list-style-type: none"> - More water storage capacitive infrastructure - Awareness raise to staff and workers about El Nino - Alternative transportation way to move our petroleum products

4. Way forward

The forum members have made various comments on the way forward. Some of the suggestions came through dialogue are as below.

- Organizing this type of forums are particularly critical for understanding of the climatic phenomenon such as El Nino. There are great need for increasing technical knowledge from each other on this issue.
- Particularly in the current season and future months this is critical that any issues relating to ENSO/El Nino is regularly discussed among the various stakeholders in Myanmar and DMH can play a key role in it to start up this process in the country.
- Particularly when the forecasts are in aggravated trend, involvement of the respective sectors are critical for reducing the impacts of the phenomena.
- Similar El Nino forums can also be organized by the respective climate-sensitive sectors where DMH and ADPC can also join and share knowledge and information for future understanding and risk management.
- DMH in collaboration with the international and regional climate prediction centers and WMO should develop further analysis of the ENSO phenomena and try to find more concrete information on the observations and impacts for Myanmar for the national and sub-national scales.
- This is important that each of the climate-sensitive sectors carry on with this initial discussion from the forum and briefs further to their own sector within and generate a firm discussion among the sectoral officials and decision makers.
- For reducing the El Nino induced risks all the sectors should come up with their own immediate as wells as the long term strategies to prepare for in the future years to come. The immediate actions for risk management are essential for El Nino 2015-2016 but this could also be useful for future long term strategies.
- Unbundling the impacts of the El Nino phenomenon for Myanmar and respective sensitive sectors are urgently needed for devising the future risk management.
- A great deal of education and awareness campaigns should be unfolded targeting the general public, professionals in the sectors, media and government representatives in all the critical regions of Myanmar.
- Media should play an active role this year and maintain a close contact with the DMH and the sectoral departments for creating good awareness of the situation. They can play a dual role in dissemination of the forecast products to the wider communities and increasing the mass awareness and education for similar events.
- DMH capacity is increasing on gradual basis and the strengthening further capacity of DMH on seasonal forecasting needs to be a continued part of modernization of the NMHS in the country.

- Future analysis and research relating to the El Nino and seasonal forecast related factors should be kept as a priority as well.
- Further enhancement and increasing number of hands-on trainings for the professionals and managers are needed on the ground. Departments and professionals from science and practices needs to be collaborated for that in future.
- Science policy and practices related platforms and collaborative mechanisms should be enhanced in future and the regional and international centers such as ADPC and others can play a good role in this in future.

ANNEX I**List of some of the participating organizations in the event**

SL #	Name	Organization
1.	Dr. Hrin Nei Thiam	Director General, DMH
2.	Dr. Kyaw Moe Oo	Deputy Director General, DMH
3.	Ms. Ye Ye Nyein	Director, DMH
4.	Ms. Khin Cho Cho Shein	Director, DMH
5.	Ms. Tin Yi	Director, DMH
6.	Ms. Htay Htay Than	Director, DMH
7.	Mr. Kyaw Lwin Oo	Director, DMH
8.	Ms. May Khin Chaw	Deputy Director, DMH
9.	Mr. Hla Tun	Deputy Director, DMH
10.	Ms. Nyein Nyein Naing	Assistant Director, DMH
11.	Dr. Than Naing	Staff Officer, DMH
12.	Mr. Myo Tun Oo	Staff Officer, DMH
13.	Ms. Chaw Su Hlaing	Deputy Superintendent, DMH
14.	Mr NMSI Arambepola	DED, ADPC
15.	Dr Senaka Basnayake	Department Head-CCCRM, ADPC
16.	Mr Atiq Kainan Ahmed	Programme Manager, ADPC
17.	Ms Katevilai Ni-Lon	Senior Administrative Associate, ADPC

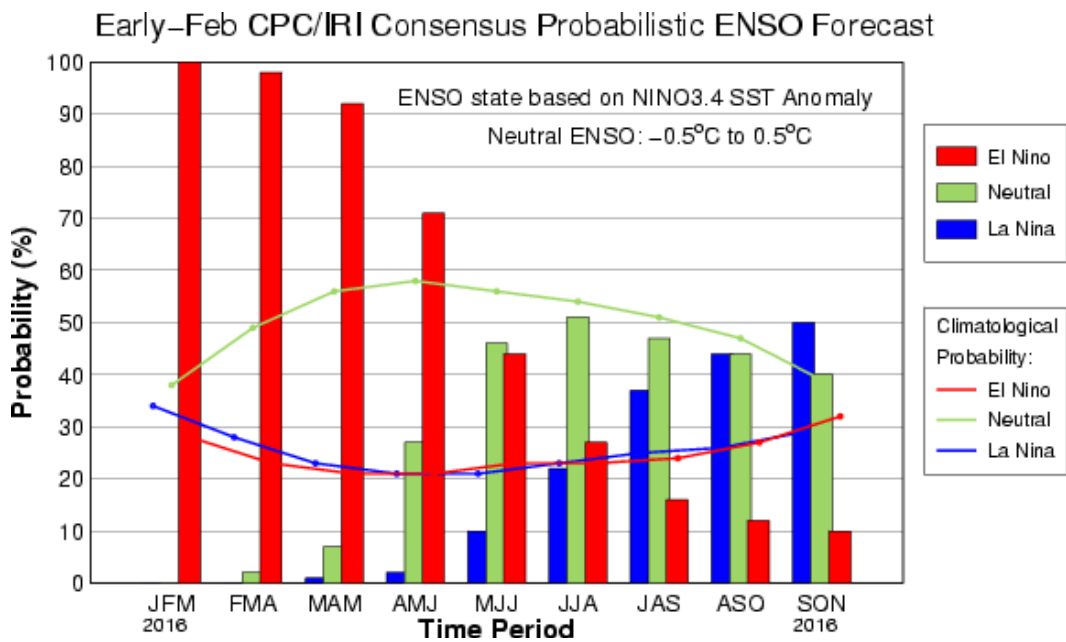
ANNEX II

AGENDA for the El Niño Outlook Forum in Myanmar

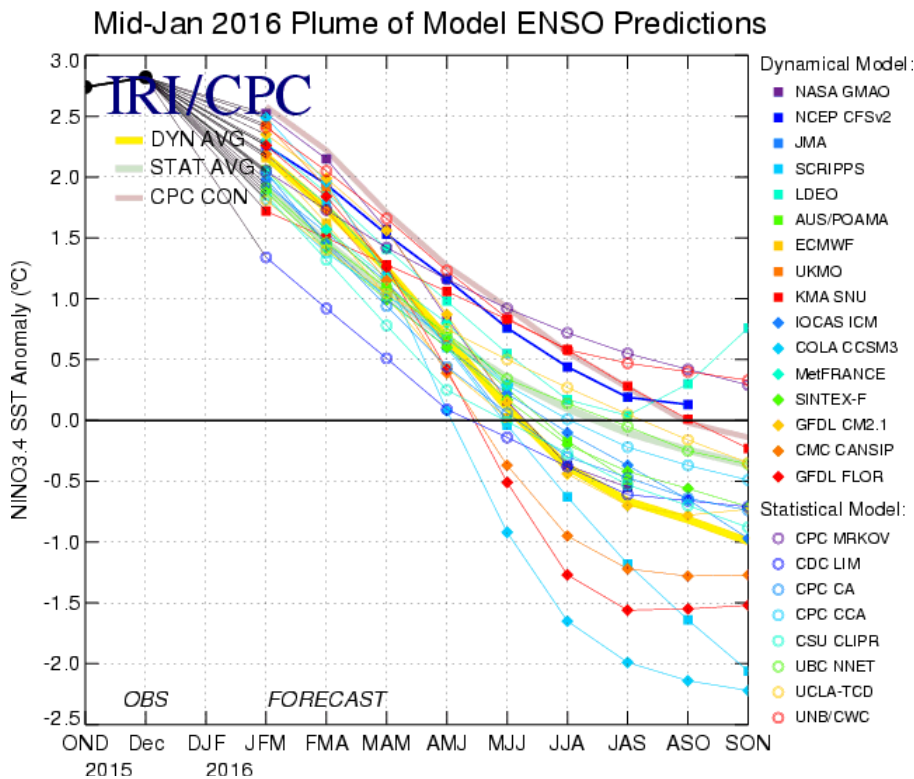
Park Royal Hotel in Nay Pai Taw, 16 February, 2016

Time	Content	Responsibility/Presenters
08:30-09:00	Registration	DMH
09:00-09:30	Opening ceremony <ul style="list-style-type: none"> • Opening Remarks from DMH • Opening Remarks from ADPC 	Dr Hrin Nei Thiam, Director General, DMH Mr NMSI Arambepola, Deputy Executive Director, ADPC
09:30-10:00	Global and regional El Nino Outlooks	Dr Senaka Basnayake, Head CCCRM Department, ADPC
10:00-10:30	Seasonal outlook for Myanmar	Mr Hla Tun, Deputy Director, DMH
10:30-10:45	Q&A and discussions on the initial presentations	All
<i>Tea break</i>		
11:00-11:30	El Nino 2015-2016: Global and Regional Impacts and Preparedness	Mr Atiq Kainan Ahmed, Program Manager, CCCRM Department, ADPC
11:30-11:50	Possible impacts of El Nino on Agriculture sector	Agriculture Department and Agricultural Planning Department
11:50-12:30	Possible impacts of El Nino on Water Resources sector <ul style="list-style-type: none"> • Water resources • Irrigation • Water utilization 	Irrigation and Water Management Department (Irrigation & Water Resources Utilization)
<i>Lunch break</i>		
13:30-14:15	Possible impacts of El Nino on Energy sector	Ministry of Energy
14:15-14:30	Possible impacts of El Nino on Health sector <ul style="list-style-type: none"> • Public health and Epidemiology • Health Services 	Ministry of Health
14:30-14:45	Q&A and discussions on the sectoral presentations	All
14:45-16:00	Group discussions on possible risk management measures by the respective broader sectors: <ol style="list-style-type: none"> a) Agriculture; b) Water Resources, irrigation and utilization; c) Public health; and d) Energy 	Facilitated by ADPC and DMH
<i>Tea break</i>		
16:15-17:15	Plenary Discussions <ul style="list-style-type: none"> • Group presentations and Q&A • Discussions and Feedback consolidation 	<ul style="list-style-type: none"> • Presenters from the sectoral break out groups • ADPC
17:15-17:30	Way forward and closing	ADPC and DMH

Some of the El Niño related forecasts products discussed in the Forum.

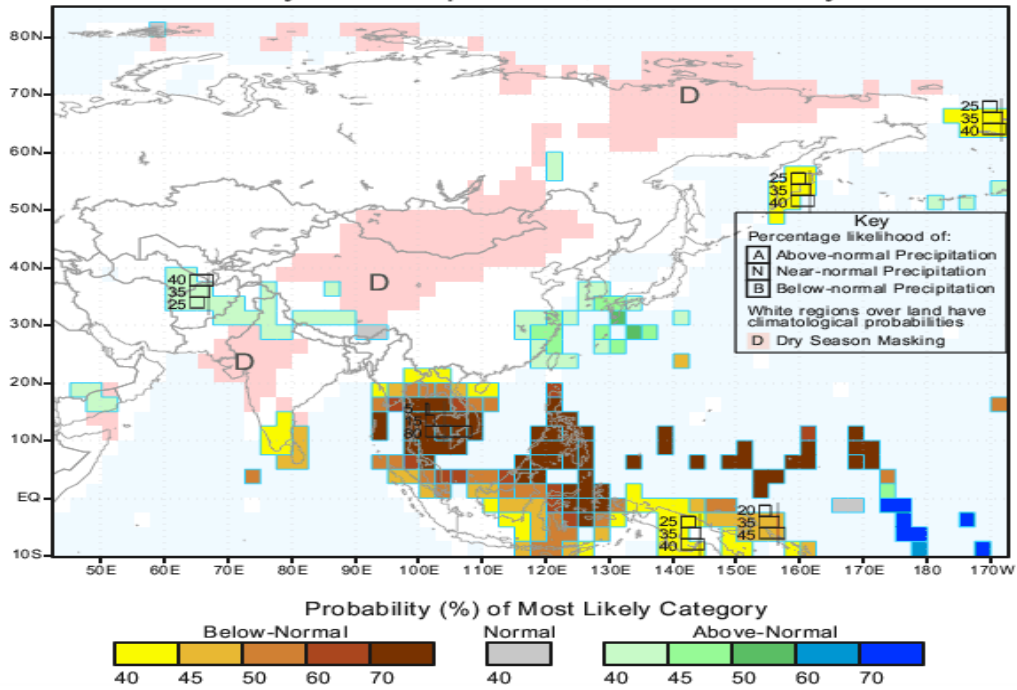


Source: CPC/IRI, Feb., 2016.

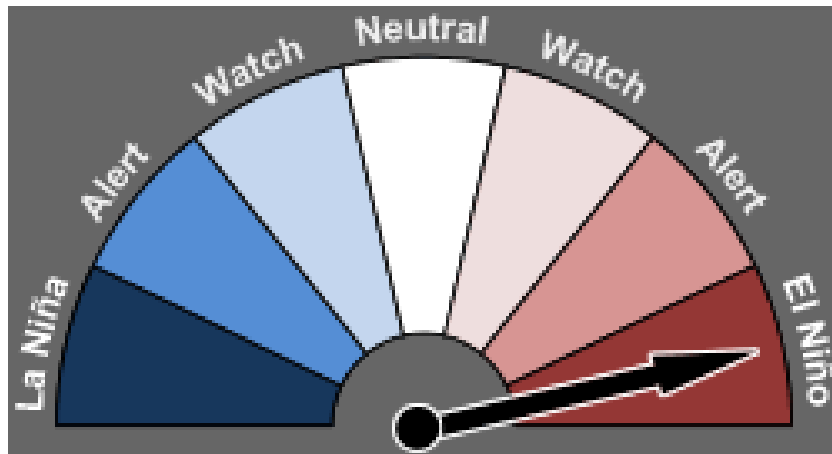


Source: CPC/IRI, Feb., 2016.

IRI Multi-Model Probability Forecast for Precipitation for February-March-April 2016, Issued January 2016



Source: IRI, Feb., 2016.



Source: BOM Australia. (15 Feb., 2016) <http://www.bom.gov.au/climate/enso/tracker/>

ANNEX IV

A reflection from the participants on recommended priorities (for managing El Nino 2015/2016) and bottlenecks in implementing these actions.

No.	Participants brief responses on recommended priority actions for managing El Nino 2015/2016 in Myanmar	Responses on identified major bottlenecks/ barriers in implementing this priority action(s)?
1	To control global warming	Coordination
2	Action plan for various sector and community awareness programme	Coordination and cooperation among agencies
3	Inventory and assessment of all existing and potential sources of water supply	Cooperation and collaboration
4	Agriculture	Coping capacity
5	Specific impact assessment	Limited awareness system
6	Action plan for fire	Contingency-detailed drill to community / Decision making for rescue plan
7	Enhanced EWS and climate information	Technical assistance
8	Select the zone (AEZ) and crops (suitable)	Good infrastructure and the understanding / Follow-up training
9	Water harvesting scheme	Proper design for structure measures
10	Reforestation (Nurse green land)	Low level of knowledge and education
11	Prepare the El Nino adaptation activities	Need to know the useful information everyone
12	Fire safety preparation enhancing	At El Nino time high surrounding temperature and water shortage occur, therefore water stock may be insufficient
13	Forest conservation and management	Budget allotment
14	Selecting suitable crop for agriculture, livelihood (for local people do not know well)	Technical support / Seeds availability and market
15	Necessary to manage for preventing water shortage	Technology and awareness (make use of water)
16	Drought-resilient crop variety, change cropping pattern, information on climate	Sort policy, long term planning
17	To establish forest plantations	Less staffs for conservation
18	Emerging & reemerging communicable diseases related to El Nino	HR management and technical support
19	Specific impact assessment	Weak awareness system
20	Specific impact assessment	Weak awareness system

Some reflections and news from the forum

A News clip from the Daily Mirror of Myanmar with a news of the El Niño forum held.



အယ်လ်နီညိုရာသီဥတုဖြစ်စဉ်အပေါ် ကြိုတင်ပြင်ဆင်ဆောင်ရွက်နိုင်ရန် ဝိရိယကူငြိမ်းပ

နေပြည်တော် ဖေဖော်ဝါရီ ၁၆
 အယ်လ်နီညိုရာသီဥတုဖြစ်စဉ်နှင့် ပတ်သက်၍ ကြိုတင်ပြင်ဆင်ဆောင်ရွက်နိုင်ရန် အယ်လ်နီညိုညိုသုံးသပ်ချက်ဖွဲ့စည်း (El Niño Outlook Forum) ကို ယနေ့နံနက် ၉ နာရီတွင် နေပြည်တော် ဟိုတယ်ရန်ရှိ Park Royal ဟိုတယ်၌ ကျင်းပရာ (၁၅) နိုင်ငံလုံးနှင့် လေ့လာရေး ညွှန်ကြားမှုဦးစီးဌာန ညွှန်ကြားရေးမှူးချုပ် ဒေါက်တာဟာရင် နိုင်တီယမ်နှင့် အာရှဒေသ သဘာဝဘေးကြိုတင်ကာကွယ်ရေးဗဟိုဌာန ဒုတိယအမှုဆောင်ညွှန်ကြားရေးမှူး Mr. N.M.S.L Arambepola တို့တက်ရောက်၍ ကမ္ဘာလုံးဆိုင်ရာ ဒေသဆိုင်ရာနှင့် မြန်မာနိုင်ငံဆိုင်ရာ အယ်လ်နီညို ဖြစ်စဉ်များနှင့် စပ်လျဉ်း၍ ဖွဲ့စည်းသုံးသပ်ဆွေးနွေးကြသည်။
 ထို့ပြင် အဆိုပါဖွဲ့စည်းမှု အာရှဒေသ သဘာဝဘေး ကြိုတင်ကာကွယ်ရေးဗဟိုဌာနမှ ကွမ်းကျပ်ပညာရှင်များ၊ ဦးစီးဌာနမှ အရာထမ်း၊ အမှုထမ်းများ ဆက်စပ်ဝင်ရောက်ကြည့်ရှုခဲ့ပြီး အစည်းအဝေး အစိုးရမှတစ်ဆင့် နိုင်ငံတကာအဖွဲ့အစည်းများမှ ကိုယ်စားလှယ်များ တက်ရောက်ခဲ့ကြပြီး လွန်ခဲ့သည့် လများအတွင်း ဖြစ်ပေါ်ခဲ့သော အယ်လ်နီညိုဖြစ်စဉ်များ ဖြစ်ပွားခဲ့သည့် အယ်လ်နီညိုဖြစ်စဉ်များကိုအခြေခံ၍ ဖြစ်ပေါ်လာနိုင်သည့် အယ်လ်နီညိုရာသီဥတုဆိုင်ရာ အခြေအနေများ၊ ကျန်းမာရေး၊ စိုက်ပျိုးရေး၊ ရေအရင်းအမြစ်နှင့် စွမ်းအင်ကဏ္ဍများအပေါ် အယ်လ်နီညို သက်ရောက်နိုင်မှုအခြေအနေနှင့် ယင်းသက်ရောက်မှုများကို လျော့ချနိုင်ရေးအတွက် လိုက်လျောညီထွေ ပြုမူဆောင်ရွက်သင့်သည့် အစီအမံများနှင့်ပတ်သက်၍ ဆွေးနွေးကြသည်။
 (သတင်းစဉ်)

