

TRAVEL REPORT FORM

출장보고서

결 재	사원	원장		
	09/05 오수진	09/06 권원태		
협 조				

I. Travel Overview 출장개요

1. Traveler(s) 출장자

Department 소속	Position 직위(직급)	Name 성명	Note 비고
APCC	원장	권원태	-

2. Travel Period 출장기간

- 2019년 8월 24일(토) ~ 2019년 9월 1일(일)

3. Occasion and destination 행사 및 출장지

- 행사명: IPCC 제1실무그룹 6차 평가보고서 제3차 주저자회의
(The Third Lead Author Meeting of the IPCC Working Group I Sixth Assessment Report)
- 출장지: 프랑스 툴루즈 소재 프랑스 기상청
- 참석자: WG1 공동의장단 및 각 장별 저자 약 250여명 참석

II. Major Activities 주요업무 수행내용

1. Main Contents and Activities 주요내용 및 활동

(1) 출장 배경 및 목적

- APCC 권원태 원장은 2018년 2월, IPCC WG1 6차 평가보고서 Chapter10-Linking global to regional climate change의 주저자로 선정됨
- IPCC WG1 AR6의 개요는 2017년 캐나다 몬트리올에서 개최된 IPCC 제46차 총회에서 승인되었으며, 제1차 주저자회의는 2018년 6월 중국 광저우, 2차 주저자회의는 2019년 1월 캐나다 밴쿠버에서 개최되었음
- 해당 회의에 참석하여 보고서 집필 내용을 공유 및 검토하고 관련 연구 동향 파악 및 세계 기후 분야 전문가들과의 연구 협력 강화를 목적으로 함

(2) 출장 세부 내용

- 세부 일정

날짜	세부 내용
8.24.(토)~8.25.(일)	칠레 → 프랑스 툴루즈 이동 ※ 2019년 APEC 기후심포지엄 참석 후 IPCC 행사지로 이동하였음
8.26.(월)~8.30.(금)	제6차 평가보고서 내용 검토 및 작성 방안 관련 회의
8.31.(토)~9.1.(일)	프랑스 툴루즈 → 한국 이동

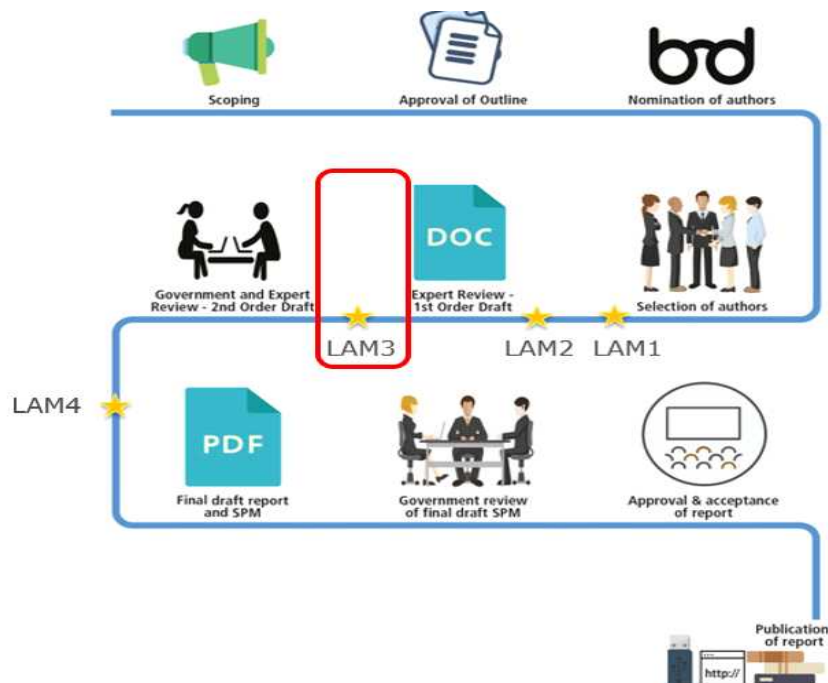
- 회의는 전체회의(Plenary Session) 및 각 장별 회의(Chapter Meeting)으로 구성됨

- 회의 일정 및 주요 내용

- 8/26(월): 개회식 및 각 장별 주요 의제 발표 및 토론
 - . 10장 초안(FOD) 검토 의견에 대한 대응 논의
- 8/27(화): 주제별 그룹토의
 - . 10장 2차 원고(SOD) 작성 논의
- 8/28(수): 10장 각 절 별 Figure/Table 작성 및 개선 방안 논의
- 8/29(목): 주요 메시지 및 BOX, FAQ, Glossary 작성 논의
 - . SOD 작성 향후 추진일정 논의
- 8/30(금): 10장 SOD 작성을 위한 계획 완료
 - . 각 장별 추진방안을 주저자 전체 회의 보고

- 세부 논의 내용은 외부에 유출하는 것을 금지하여 보고 내용 구성에 제한이 있음

- 3차 주저자 회의와 AR6 추진과정: 현재 위치는 1/3 지점에 와 있음



- FOD대한 전문가 검토의견의 개수는 약 23,000개이며, 각 장별 550~3000개로 구성됨

- 1차 초안(FOD)에 대한 모든 전문가 검토의견은 10월 7일까지 담당 저자가 답변을 작성하여 기술 지원팀(TSU)에 제출. 향후 검토의견과 답변은 공개될 예정임.

- 각 장별 원고 페이지가 당초 계획보다 많은 경우 원고 내용을 조정, 보완하여 당초 계획에 맞도록 수정 필요
- 1차 초안에 대한 전문가 검토의견을 충분히 고려하고 관련 분야의 최신 참고문헌을 적극 활용하여 2차 원고 작성
- 1차 초안에서 각 장별 내용 중 중복되거나 상충되는 부분에 대해서 집중 검토하여 관련 분야에 대한 분석 및 평가를 보완하는 것이 필요함
- 2차 원고(SOD)는 2020년 1월 7일까지 TSU에 제출 완료
- 이번 3차 회의에서는 작성과정의 공정성을 감시하기 위한 검토편집자(Review Editor, 각 장별 2~3인) 및 각 장별 지원을 위한 Chapter Scientist(각 장별 1~3인) 참석
- SOD 작성 이후 정책결정자를 위한 요약문(Summary for Policy Makers, SPM) 작성 예정
- 10장에서는 SOD 작성을 위하여 계속해서 정기 tele-conference는 주 1회 추진하여 전반적인 내용을 토의하고 추진과정에서 필요에 따라 tele-conference를 통해 문제를 논의하기로 함



IPCC 제1 실무그룹 6차 평가보고서 3차 주저자회의 참가자(2019.08.26. 프랑스 툴루즈, 프랑스 기상청내)

(3) 향후 일정

- 2020.1.12: 2차 원고(SOD) 작성
- 2020.3.2.~4.26: 2차 원고(SOD) 정부 및 전문가 검토
- 2020.6.1.~6.6: 제4차 주저자회의 개최(장소 미정)
- 2020.10.18: 최종 원고(FGD) 작성 완료
- 2020.12.7.~2021.1.31: 각 회원국 정부에 최종 배포 및 정부 검토
- 2021.4.12.~4.16: IPCC 제54차 총회에서 최종 승인

2. Relevance to APEC Climate Center's Activities 결론 및 소감

- 제6차 평가보고서의 10장 내용은 APCC의 기후정보서비스 업무와 관련성이 있으므로 향후 원고 작성 과정에 연구 성과가 반영될 수 있음
- 최근 기후정보서비스에 대한 논의가 전문가들 사이에서 매우 중요한 이슈로 떠오르고 있으며 기후정보의 생산뿐만 아니라 의사결정과정과 사용자 및 시민들에게 소통될 수 있는 storyline/narrative 구성이 필요하다는 것을 인식하고 이에 대한 논의가 매우 활발히 진행되고 있음
- APCC에서도 현재 제공하는 기후예측정보가 최종 사용자들이 이해하고 사용할 수 있는 맞춤형 정보를 개발하고 이의 활용도를 높이기 위한 노력이 필요함

3. Suggestions and Remarks 건의사항

없음

III. References (Presented and Collected Materials) 주요 수집자료

(with attachment of any information or report in case of attendance of conferences, workshops and meetings) 학술대회, 워크숍, 회의 등 참석 시 관련 정보 및 문서 첨부

IPCC AR6 WG1 Outline 및 Schedule 첨부

IPCC AR6 WGI SCHEDULE (19 July 2018)

2018

JUNE	25-29 June First Lead Author Meeting (LAM1)
OCT	14 October Submission of the Internal Draft to the TSU 15-28 October TSU compile Internal Draft 29 October - 25 November Internal Review of the Internal Draft
DEC	3 December TSU sends compiled Review Comments to CLAs
JAN	7-12 January Second Lead Author Meeting (LAM2)
APRIL	7 April Submission of the First Order Draft (FOD) to TSU 8-21 April TSU compiles FOD 29 April - 23 June Expert Review of FOD
JULY	1 July TSU sends compiled Review Comments to CLAs
AUG	26-31 August Third Lead Author Meeting (LAM3)
OCT	7 October Comment responses & RE First interim report due to TSU
DEC	31 December <i>Literature submission cut off</i>

2019

2020

JAN	12 January Submission of the Second Order Draft (SOD) to TSU 13-26 January TSU compile SOD
MAR	2 March - 26 April Expert and Government Review of the SOD and of the FOD of the Summary for Policy Makers (SPM)
MAY	4 May TSU send compiled Review Comments to CLAs
JUNE	1-6 June Fourth Lead Author Meeting (LAM4) 29 June RE second Interim report due to TSU
JULY	27 July SOD Review Comments response due to TSU
SEPT	30 September <i>Literature acceptance cut off</i>
OCT	18 October Submission of the Final Draft (FGD) to TSU 19 October - 1 November TSU compiles FGD
DEC	7 December - 31 January Final Government Distribution
FEB	8 February TSU send compiled Review Comments to SPM Drafting Team

2021

APR	12-16 April IPCC 54 - Approval Session
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FORTY-SIXTH SESSION OF THE IPCC
Montreal, Canada, 6 – 10 September 2017

(10.IX.2017)
Agenda Item: 7
ENGLISH ONLY

DECISION

**CHAPTER OUTLINE OF THE WORKING GROUP I CONTRIBUTION
TO THE IPCC SIXTH ASSESSMENT REPORT (AR6)**

As Adopted by the Panel at the 46th Session of the IPCC

Disclaimer
Posted as adopted subject to copy editing

CHAPTER OUTLINE OF THE WORKING GROUP I CONTRIBUTION TO THE IPCC SIXTH ASSESSMENT REPORT (AR6)

The Intergovernmental Panel on Climate Change decides:

(1) to agree to the outline of the *Working Group I contribution to the IPCC Sixth Assessment Report* as contained in Annex 1 to this document.

(2) that this report assesses relevant literature, especially since the Fifth Assessment Report (AR5), in a manner consistent with the IPCC guidance on the use of literature.

(3) that the bulleted text in Annex 1 to this Decision, that resulted from the scoping process and refined through comments by the Plenary, be considered by authors as indicative.

(4) to invite the Co-Chairs of Working Group I and the Co-Chairs of WGII and WGIII to develop appropriate mechanisms to ensure the effective co-ordination of Working Group contributions to the IPCC Sixth Assessment Report, to oversee the treatment of cross-cutting themes, and to prepare a Glossary common to Working Groups I, II and III.

(5) In order to achieve this, the timetable for the production of the IPCC Working Group I contribution to IPCC Sixth Assessment Report is as follows:

15 September – 27 October 2017	Call for author nominations
29 January – 4 February 2018	Decision on Selection of authors
25 June – 1 July 2018	First Lead Author Meeting
7 – 13 January 2019	Second Lead Author Meeting
29 April – 23 June 2019	Expert Review of the First Order Draft
26 August – 1 September 2019	Third Lead Author Meeting
2 March – 26 April 2020	Expert and Government Review of the Second Order Draft
1 – 7 June 2020	Fourth Lead Author Meeting
7 December 2020 – 31 January 2021	Final Government Distribution of the Final Draft and Final Government Review of the Summary for Policy Makers
12 – 18 April 2021	Submission to the WGI Session for approval of the Summary for Policymakers and acceptance of the underlying Report

(6) that the budget for the production of the Working Group contribution to the IPCC Sixth Assessment Report is as contained in Decision (IPCC/XLVI-1) on the IPCC Trust Fund Programme and Budget.

Chapter outline of the Working Group I contribution to the IPCC Sixth Assessment Report (AR6)

Summary for Policy Makers

Technical Summary

Chapter 1:

Framing, context, methods

Executive Summary

- Synthesis of key findings from AR5 and earlier assessment reports, and connections to AR6 Special Reports
- Framing of the physical science information relevant for mitigation, adaptation, and risk assessment in the context of the Global Stocktake
- Assessment approach
- Observational and reanalysis developments since the AR5
- Model and experimental design developments since the AR5
- Emissions and forcing scenarios
- Treatment and evaluation of uncertainty throughout the report

Frequently Asked Questions

Chapter 2:

Changing state of the climate system

Executive Summary

- Multi-millennial context, pre-industrial to present day
- Natural and anthropogenic forcings
- Radiative forcing
- Large-scale indicators of observed change in the atmosphere, ocean, cryosphere, land, and biosphere
- Modes of variability

Frequently Asked Questions

Chapter 3:

Human influence on the climate system

Executive Summary

- Overview of model performance and development since the AR5
- Simulated large-scale indicators of change in the atmosphere, ocean, cryosphere, land, and biosphere
- Simulated modes of variability
- Natural variability versus anthropogenically-forced change
- Attribution of large-scale observed changes

Frequently Asked Questions

Chapter 4:

Future global climate: scenario-based projections and near-term information

Executive Summary

- Projections of global mean surface temperature and other key global indicators
- Evaluation of multi-model ensemble methods
- Large scale patterns of climate change
- Committed climate response, climate targets, overshoot, irreversibility, abrupt change
- Climate response to greenhouse gas removal scenarios
- Climate response to solar radiation management scenarios
- Interplay between internal variability and response to forcings, including short-lived forcings
- Variability and unexpected changes of global mean surface temperature
- Near-term predictability, sources and capabilities
- Synthesis of climate information in the near-term

Frequently Asked Questions

Chapter 5:

Global carbon and other biogeochemical cycles and feedbacks

Executive Summary

- Feedbacks between climate and biogeochemical cycles, including paleoclimate information
- Ocean acidification
- Historical trends and variability of CO₂, CH₄ and N₂O; sources and sinks
- Projections of global biogeochemical cycles from near-term to long-term
- Abrupt change, irreversibility
- Model evaluation, emergent constraints
- Transient climate response to cumulative emissions and remaining carbon budgets for climate targets
- Biogeochemical implications of land and coastal management mitigation options and greenhouse gas removal
- Biogeochemical implications of solar radiation management scenarios

Frequently Asked Questions

Chapter 6:

Short-lived climate forcings

Executive Summary

- Key emissions: global overview, natural, anthropogenic, historical and scenarios
- Observed and reconstructed concentrations and radiative forcing
- Direct and indirect-aerosol forcing
- Implications for greenhouse gas lifetimes
- Implications of different socio-economic and emission pathways, including urbanisation, for radiative forcing
- Connections to air quality and atmospheric composition

Frequently Asked Questions

Chapter 7:

The Earth's energy budget, climate feedbacks, and climate sensitivity

Executive Summary

- Energy budget and its changes through time
- Radiative forcing: definitions, estimates, and its representation in models
- Climate feedbacks
- Sensitivity of the climate system: methods and uncertainty
- Empirical constraints on the sensitivity of the climate system, including paleoclimate
- Global warming potential, global temperature change potential, and other metrics

Frequently Asked Questions

Chapter 8:

Water cycle changes

Executive Summary

- Observations, models, methods and their reliability
- Past, present and projected changes, trends, variability and feedbacks in the physical components of the water cycle
- Circulation, processes and phenomena (e.g. monsoon systems) affecting moisture and precipitation patterns, including extremes
- Cloud-aerosol processes affecting the water cycle
- Changes in seasonality of natural storage and water availability
- Abrupt change
- Confidence in projections

Frequently Asked Questions

Chapter 9:

Ocean, cryosphere, and sea level change

Executive Summary

- Past and future changes in ocean circulation and properties (trends, variability and extremes)
- Past and future changes in marine and terrestrial cryosphere
- Evaluation of models and projection methods
- Detection and attribution
- Past global and regional sea level changes
- Projections of global and regional sea level change
- Abrupt change and long-term commitment
- Extreme water levels (tides, surge and ocean waves)

Frequently Asked Questions

Chapter 10:

Linking global to regional climate change

Executive Summary

- Regional phenomena, drivers, feedbacks and teleconnections
- Regional scale observations and reanalyses
- Interplay between internal variability and forced change at the regional scale, including attribution
- Evaluation of model improvements, methods, including downscaling and bias adjustment and regional specificities
- Confidence in regional climate information, including quantification of uncertainties
- Scale specific methodologies e.g. urban, mountains, coastal, catchments, small islands
- Approaches to synthesizing information from multiple lines of evidence

Frequently Asked Questions

Chapter 11:

Weather and climate extreme events in a changing climate

Executive Summary

- Extreme types, encompassing weather and climate timescales and compound events (including droughts, tropical cyclones)
- Observations for extremes and their limitations, including paleo
- Mechanisms, drivers and feedbacks leading to extremes
- Ability of models to simulate extremes and related processes
- Attribution of changes in extremes and extreme events
- Assessment of projected changes of extremes and potential surprises
- Case studies across timescales

Frequently Asked Questions

Chapter 12:

Climate change information for regional impact and for risk assessment

Executive Summary

- Framing: physical climate system and hazards
- Region-specific integration of information, including confidence
- Information (quantitative and qualitative) on changing hazards: present day, near term and long term
- Region-specific methodologies
- Relationship between changing hazards, global mean temperature change, scenarios and emissions

Frequently Asked Questions

ANNEXES

Options for cross-WG integration including Regional Atlas

Cross Working Group Glossary

Technical Annexes

List of Acronyms

List of Contributors

List of Reviewers

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