



# WG: Complex Study of the Gas Hydrates and Methane fluxes in the Indo-Pacific Region (CoSGas)

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# Guidelines



## What

To take stock of the **implementation status** and further catalyze ocean science solutions for sustainable development, this ppt template is designed to:

- Gather information on the **current development status** of the WESTPAC Programme/Project/Working Group, particularly since the Fourteenth Session of the IOC Sub-Commission for the Western Pacific (WESTPAC-XIV) in *April 2023*.
- More importantly, assess its **future development**, along with **potential action plans** for future implementation, i.e., for the period of *2025-2026 and beyond*.

## Why

- The Information will facilitate considerations concerning how to harness, stimulate and empower interdisciplinary ocean research that can increase our understanding and inform policy and decision-making.
- It will also aid in improving programme efficiency and effectiveness that will serve the requirement of Member States and the Sub-Commission as a whole.

## How

Filling out the following slides, which should not take much time, and return the completed slides to [iocwestpac@unesco.org](mailto:iocwestpac@unesco.org) by **20 September 2024**. We appreciate your kind cooperation.

### Note:

- *Feel free to use a different slide layout if it better suits your summary content.*
- *Failure to submit will be considered as a lack of substantive activity and may indicate difficulties in continuing the project.*



# Summary Outline



1. Justification
2. Objectives
3. Major activities, outputs & outcomes (particular those accomplished during 2023-2024)
4. Problems encountered and recommended actions
5. Strategic considerations/thoughts for future development
6. Potential action plans for 2025-2026 and beyond



# 1. Justification



## (Why this working group is needed for the Sub-Commission)

- Gas hydrates are important marine phenomena which significance is growing up from year to year but still studied poorly in marine expeditions due to the lack of international cooperation.
- Gas hydrates were found in many areas of the Western Pacific and Indian oceans. Numerous unique gas hydrate accumulations nowadays are object of many focused studies in different countries.
- Nature and evolution of the gas hydrate system in the lithosphere and hydrosphere, which in respect to environmental agent is one of the most uncertain and debatable problem of the World Ocean.
- Fluxes of methane from sea bottom are associated with gas hydrates located below surface sediments
- Methane fluxes from the marginal seas plays a significant climatic and social role, but remains one of the most debated topics in ocean sciences.
- **Initiation of a long-term collaborative international project** to study gas hydrates by Western Pacific and Indian oceans community on bases of mutual understanding, scientific, and administrative collaboration would be timely and efficient.

## 2. Objectives

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- Preparation of the international project to study gas hydrates and methane fluxes in the Indo-Pacific region and their impact on climate, ecosystem and socio-economic development

### Expected outcomes

- established network of the researchers interested in gas hydrates and methane fluxes in the Indo-Pacific;
- generalization and complex interpretation of all accessible available gas fluxes, gas hydrate information from the Indo-Pacific region;
- report and inventory on the status of the gas hydrates studies and associated phenomena in the WESTPAC countries;
- raised awareness on the gas hydrates and methane problem in the Indo-Pacific region;
- preparation of a long-term international collaborative project under WESTPAC

# 3. Major activities, outputs & outcomes (1)



Latest accomplishment, particular those during 2023 to 2024

## Major activities

- 1<sup>st</sup> CoSGas WG Meeting and introductory workshop, March 18, 2022, on-line
- 2<sup>nd</sup> CoSGas WG Meeting and 1<sup>st</sup> CoSGas conference, “Recent advances and current challenges of gas hydrates and methane research in the Indo-Pacific region”, May 17, 18, 24, 2022, on-line
- 3<sup>rd</sup> and 4<sup>th</sup> CoSGas WG Meetings, March 1 and June 13, 2023, on-line
- Topic Session D5 at the 11<sup>th</sup> WESTPAC Conference, April 23, 2024, Bangkok, Thailand : “Gas Hydrates and Methane fluxes in the Indo-Pacific Region”
- 5<sup>th</sup> CoSGas WG meeting, April 23, 2024, Bangkok, Thailand (first time face to face)
- Preparation of the report on gas-hydrates and methane fluxes in the Indo-Pacific Region has been started
- ...

## Timeframe

2021– 2024  
(3 years)



### 3. Major activities, outputs & outcomes (2)



Latest accomplishment, particular those during 2023 to 2024

#### Outputs & Outcomes

- A list of WG members is formed (13 members and 5 observers),
- A network of the researchers interested in gas hydrates and methane fluxes in the Indo-Pacific is established,
- WG Action plan and key activities for the future are discussed
- Some advances and challenges on Gas-hydrates and methane in the Indo-Pacific Region that are interesting for WETSPAC countries has being discussed,
- Preparation of the report on Gas-hydrates and methane in the Indo-Pacific Region has been started
- ...

#### Timeframe

2021– 2024  
(3 years)

# 4. Problems encountered & recommended actions



## Problems encountered

- Lacking of experts from some WESTPAC countries
- Weak activity caused by an absence of face-to face meetings and lack of direct and informal communication,
- Lack of financial support for travel and participation at the WG meetings
- ...

## Actions

- Request to WESTPAC office to support in advertising the WG acidity and recruiting more members
- Contacting with national delegates of WESTPAC countries to recommend WG members from their countries
- Arranging more face-to-face meetings
- Preparing a dedicated web site
- ...

## Timeframe

2021– 2024  
(3 years)



# 5. Strategic considerations/thoughts for future development

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- Delay in the beginning of the WG activity in 2021 was caused by COVID and uncertainties how to arrange the 1<sup>st</sup> meeting
- Good and fast start in 2022-2023, 4 on-line meetings and 1 conference encouraged more participants, especially from China and Russia. Some participants, however slowed down their activity, especially from New Zealand, Japan and Vietnam because of various reasons
- Face-to-face meeting and scientific session during 11<sup>th</sup> WESTPAC Conference in April 2024 helped to add more enthusiasm in the WG activity
- Next step is a completion of the Report and preparation of the CoSGas project to submit to the WESTPAC

## 6. Potential action plans for future implementation

for the period of 2025-2026 and beyond

- Completion of the report and inventory on the status of the gas hydrates studies and associated phenomena in the WESTPAC countries;
- Submit a proposal on a long-term international collaborative project under WESTPAC on CoSGas in the Indo-Pacific region;
- Continue to raised awareness on the gas hydrates and methane problem;
- Continue thematic sessions on CoSGas at future WESTPAC conferences;
- To organize a series of targeted workshops focused on specific problems of gas hydrates and methane fluxes research;
- To organize comparative studies, training schools, joint cruises;
- Encourage joint bi-lateral or multi-later core project on CoSGas thematic;
- Facilitate exchange of information and methodology between the countries, exchange of national experience;
- Use a opportunities provided by the UN Decade of Ocean Science activities.

# Planned activities for 2025-2026



Program	Plan				Funding Required		Remark
	Activities	Objectives	Expected outputs/outcomes	Date and place	IOC	Other sources (i.e. from national or international)	
WG CoSGas	1.7 <sup>th</sup> CoSGas meeting	Finalization of WG report and new project on Gas-hydrates and methane studies under WESTPAC	Draft report, project proposal	Feb, 2025, on-line	none	none	On-line
	2. WESTPAC IG Session	Presentation on a proposal on new project on Gas-hydrates and methane studies under WESTPAC	Accepting a new project proposal	April, 2025, Tokyo, Japan	1000	1000	travel for some members
	3. 1 <sup>st</sup> Workshop of new project and Meeting of CoSGas SC	Developing of the implementation plan, formation of Steering Committee	Implementation plan for next period, Steering Committee (SC)	May, 2025, online	none	none	On-line
	4. 2 <sup>nd</sup> CoSGas Workshop/Conference	Exchange information on national and international activities	To develop the implementation plan	Sep, 2025, China or Russia	2000	3000	travel for some members
	5. Meeting of the CoSGas SC	Discuss future activity, proposal for the 12 <sup>th</sup> WESTPAC Scientific Conference	Future activity plan, proposal for Scientific Session/ incubator	March, 2026, on-line	none	none	On-line





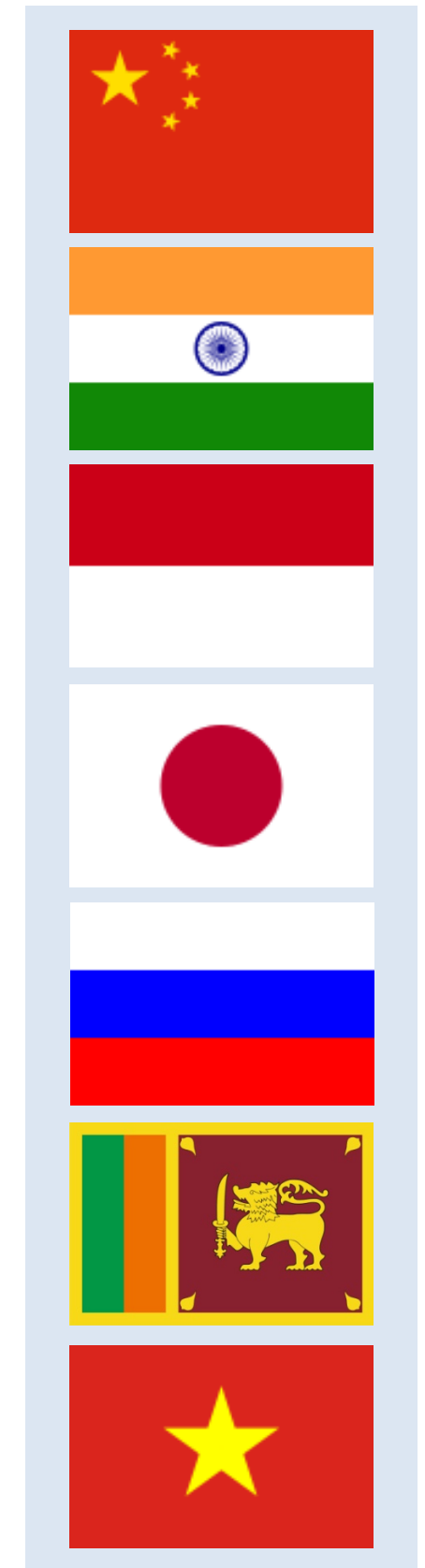
# Supplementary slides



# WG CoSGas Steering Group

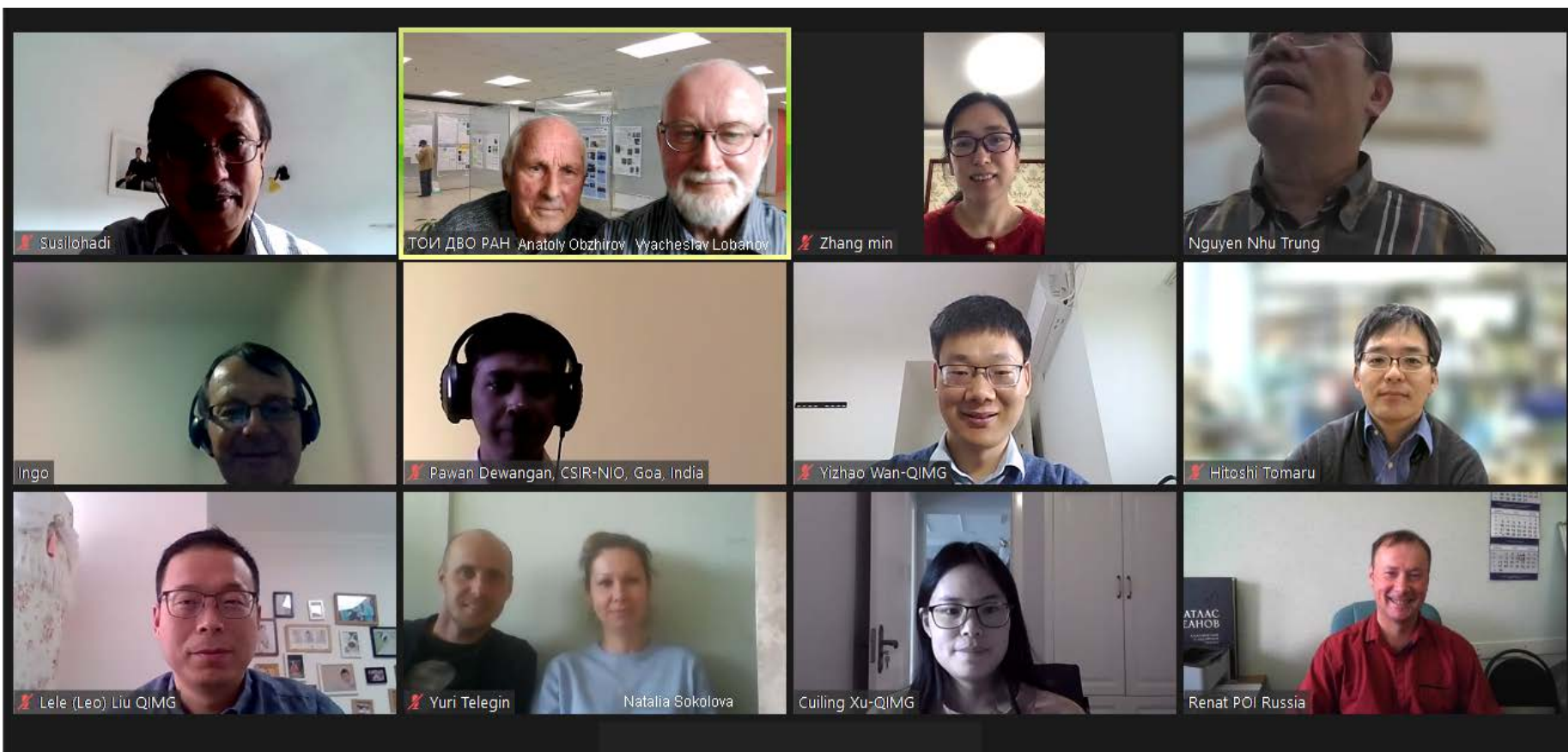


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# CoSGas 1<sup>st</sup> Meeting and 1<sup>st</sup> Workshop



## March 18, 2022: 15 participants from 7 countries

**Agenda**  
**for the WESTPAC Working Group on Complex Study of the Gas Hydrates and Methane fluxes in the Indo-Pacific Region (CoSGas) first meeting**  
*March 18, 2022 (online video-conference)*

1. Introduction of the participants
2. Introduction of the WESTPAC and CosGas WG – *V. Lobanov*
3. Main topic of gas geochemistry and gas hydrates – *A. Obzhirov*
4. Discussion on the WG outputs and their implementation - *All*
5. Proposal on a workshop in April- *All*
6. Other matters - none
7. Summary and closing - *V. Lobanov*

CoSGas Workshop on 17-18 May, 2022

**Methane and Carbon dioxide studies in FIO**

Min Zhang (Sophia), Fangli Qiao

Sources, China

**Indian National R&D Projects on Gas Hydrates Exploration and Exploitation**

**Dr. P. Dewangan**  
**Gas Hydrate Group**  
**CSIR-NIO, Goa, India**

**SMI distribution in the Northern Okhotsk Sea and Northern Japan Sea**

Hitoshi Tomaru (Chiba University)

The use of gas geochemical studies in the solution: geological, geophysical, biological mineralogical, environmental problems in the Sea and on land

Anatoly Obzhirov

*Обжиров А.И. - главный научный сотрудник ТОИ, д.г.-м. наук, профессор Владивосток-, 18 May, 2022*

**COUNTRY REPORT METHANE HYDRATE RES IN INDONESIA**

By  
 Susilohadi Susilohadi  
 Marine Geological Institute (MGI)/ Marine Geological Survey and Mapping Office  
 Geological Survey of Indonesia  
 Ministry of Energy and Mineral Resources  
 Email: susilo.hadi@esdm.go.id; s.susilohadi@gmail.com

**May 17, 18 and 24, 2022: 14 participants, 7 talks from 6 countries**



# CoSGas 3<sup>rd</sup> Meeting, March 1, 2023

8 participants from 2 countries



## Agenda:

1. Introduction of the participants
2. In a memory of Prof. Anatoliy Ivanovich Obzhirov
3. Brief overview of the WG activity over last year
4. WG membership – need for expansion
5. Status of preparation of the Report
6. WG CoSGas web site
7. Next activity – overall discussion
8. Other matters
9. Next meeting

## Endnote 2

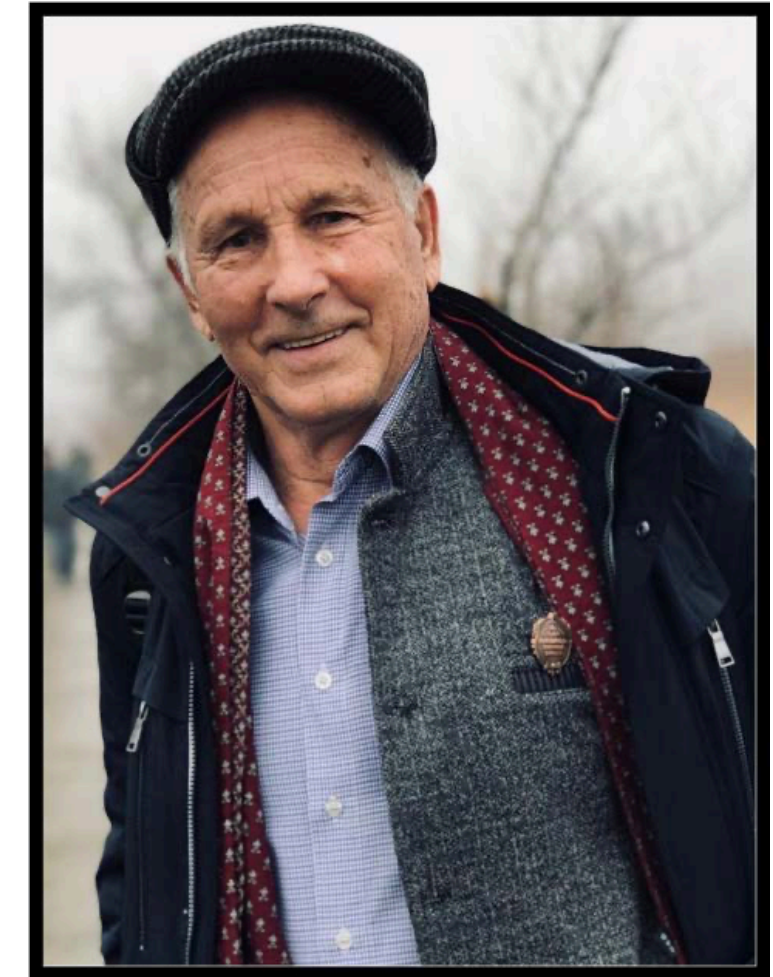
### A template for national/organizational report

- Introduction: brief information about the laboratory/ working group, national and international GH programs, social effects (young scientists, gender etc.)
- Methods and equipment
- Distribution of gas hydrates and methane flares in research area
- Gas hydrates: geological, geophysical, oceanographic and biological aspects
- Methane flows and its environmental impacts in gas hydrate provinces
- Current challenges for international collaboration
- Results and discussions (up to members)
- Summary and conclusion

## Endnote 3

### Action points

1. Contact researchers who are interesting in CoSGas activity from Taiwan and Korea to invite them to the WG - *Prof. Wu*
2. Discuss with the IOC/WESTPAC secretariat to help in recruiting more members from other countries – *Dr. Lobanov*
3. Modify the national/laboratory reports according to the template and submit them by April 30 to WG Secretariat (Natalia Sokolova, [pestrikova@poi.dvo.ru](mailto:pestrikova@poi.dvo.ru) with a copy to [lobanov@poi.dvo.ru](mailto:lobanov@poi.dvo.ru) and [syrbu@poi.dvo.ru](mailto:syrbu@poi.dvo.ru)) – *all WG members involved*
4. Summarization and synthesis of the received material and circulation of the Draft Report among the WG members by May 22 – *Dr. Syrbu*
5. Review of the Draft Report and be ready to discuss it and the 4<sup>th</sup> GoSGas meeting on May 30-31 – *all WG members*
6. Develop a structure and tentative content of the CoSGas web site and presented it at the 4<sup>th</sup> GoSGas meeting on May 30-31 - *Dr. Sokolova*
7. Discuss with the WESTPAC office location of the CoSGas web site and recommended content and structure – *Dr. Lobanov*
8. Discuss a possibility to have a face to face CoSGas meeting during the 10<sup>th</sup> ICGH symposium in Singapore on 9-14 July 2023 – *Prof. Wu*



Prof. A.I. Obzhirov, 1940-2023

## 7. Discussion on the WG outputs and their implementation

**How to move forward to achieve the main expected outputs:**

- generalization and complex interpretation of all accessible available gas fluxes, gas hydrate information from the Indo-Pacific region;**
- report and inventory on the status of the gas hydrates studies and associated phenomena in the WESTPAC countries.**

1. To organize a special workshop with presentations on the current activity and plans to study gas hydrates and methane fluxes in the Indo-Pacific region
2. To organize a series of targeted workshops focused on specific problems of gas hydrates and methane fluxes research
3. July 9-14, 2023, Singapore, 10<sup>th</sup> ICGH- discuss with organizers to have a short meeting of CoSGas – Prof. Wu
4. To organize comparative study, training school, joint cruise
5. Please invite expert from other countries/agencies to join the WG
6. Make a chat-group in ~~Telegram or What's App~~, WeChat



# WESTPAC WG:

## Complex Study of the Gas Hydrates and Methane fluxes in the Indo-Pacific Region (CoSGas)

4<sup>th</sup> Meeting, June 13, 2023, 13:00 UTC+10

### Agenda:

1. Introduction of the participants
2. Current status and activities of CoSGas – Lobanov
3. Status of preparation of the CoSGas Report – Nadezhda Syrbu
4. CoSGas website, logo, booklet - Nadezhda Syrbu
5. Other matters
6. Next meeting







## 2<sup>nd</sup> UN Ocean Decade Regional Conference & 11<sup>th</sup> WESTPAC International Marine Science Conference

“Accelerating Ocean Science Solutions for Sustainable Development”



2021 United Nations Decade  
of Ocean Science  
for Sustainable Development

### Title of Scientific Session:

D5: Gas Hydrates and Methane fluxes in the Indo-Pacific Region

**Date and Time:** 23.04.2024 10:00-15:00

### General description on the conduct of the Session

The session was organized by the WG on .Presentations from studies including, but not limited to gas hydrates and methane fluxes and their impact on climate, ecosystem and socio-economic development in the Indo-Pacific region.

Gas hydrates are important marine phenomena which significance is growing up from year to year but still studied poorly in marine expeditions due to the lack of international cooperation. Gas hydrates were found in many areas of the Western Pacific and Indian oceans. Numerous unique gas hydrate accumulations nowadays are object of few focused projects studies in different countries. Nature and evolution of the gas hydrate system in the lithosphere and hydrosphere, which in respect to environmental agent is one of the most uncertain and debatable problem of World Ocean. Fluxes of methane from sea bottom are associated with gas hydrates located below surface sediments. Methane fluxes from the marginal seas plays a significant climatic and social role, but remains one of the most debated topics in ocean sciences. This session would summarize and share the knowledge and experience in gas hydrates and methane fluxes in the Indo-Pacific region and is associated with activity of the CoSGas working group of WESTPAC.





# Thank You

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