



ISA-CHINA JOINT TRAINING
AND RESEARCH CENTRE

中国-国际海底管理局
联合培训和研究中心

ANNUAL REPORT

2023-2024

2023-2024

年年度报告

DECEMBER 2024
2024年12月



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Acknowledgements 致谢

Annual report 2023-2024 of the ISA - China Joint Training and Research Centre was produced by National Deep Sea Center of China with the support of the Secretariat of the International Seabed Authority. Special thanks go to the Communications Unit of the Secretariat for their editorial, graphic and production work.

Artwork and design

This annual report was designed by Anica Novak.

Photography

Front cover courtesy of National Deep Sea Centre of China.

The latest version of this document is available on the ISA website at: www.isa.org.jm/publications/isa-china-jtrc-annual-report-2023..

For additional information or feedback on this annual report, please write to us at jtrc@isa.org.jm.

中国-国际海底管理局联合培训研究中心2023-2024年年度报告由中国国家深海基地管理中心在国际海底管理局秘书处的支持下编写。特别感谢国际海底管理局秘书处宣传组的编辑、绘图和制作工作。

美工与设计

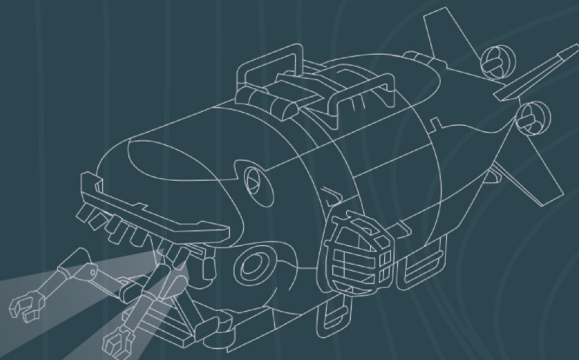
本年度报告由Anica Novak设计。

图片

封面照片由中国国家深海基地管理中心提供。

本文件的最新版本可查阅ISA网站：www.isa.org.jm/publications/isa-china-jtrc-annual-report-2023.

有关本年度报告的更多信息或反馈，请致信我们jtrc@isa.org.jm。



Acronyms

BPHDC	Beijing Pioneer Hi-Tech Development Company
CIMA	China Institute for Marine Affairs, MNR
CODF	China Ocean Development Foundation
COMRA	China Ocean Mineral Resource R&D Association
FIO	First Institute of Oceanography, MNR
GMGS	Guangzhou Marine Geological Survey, MNR
ISA	International Seabed Authority
JTRC	Joint Training and Research Centre
LTC	Legal and Technical Commission
MNR	Ministry of Natural Resources of China
NDSC	National Deep Sea Center of China
OUC	Ocean University of China
REMP	Regional Environmental Management Plan
SDG14	United Nations' Sustainable Development Goal 14
SIO	Second Institute of Oceanography, MNR
TIO	Third Institute of Oceanography, MNR
UNCLOS	United Nations Convention on the Law of the Sea

缩写

北京先驱高技术发展公司
自然资源部海洋发展战略研究所
中国海洋发展基金会
中国大洋矿产资源研究开发协会
自然资源部第一海洋研究所
自然资源部广州海洋地质调查局
国际海底管理局
中国-国际海底管理局联合培训和研究中心
法律与技术委员会
中国自然资源部
中国国家深海基地管理中心
中国海洋大学
区域环境管理计划
联合国可持续发展目标14
自然资源部第二海洋研究所
自然资源部第三海洋研究所
联合国海洋法公约

FOREWORD

It is my great pleasure to present the Annual Report 2023-2024 of the ISA-China Joint Training and Research Centre (ISA-China JTRC). This report encapsulates a year of significant achievements and collaborative efforts that have advanced our mission of promoting and encouraging marine scientific research and capacity development for developing States.

Through the partnership established between the Ministry of Natural Resources of China (MNR) and the International Seabed Authority (ISA), the first in-person training workshop was organized in Qingdao. This landmark event brought together 25 trainees from 21 different countries, providing them with extensive knowledge and hands-on experience in deep-sea exploration and technology. The participation and feedback from trainees underscored the workshop's success in enhancing their professional capabilities.

The ISA-China JTRC Steering Committee's fourth meeting was another highlight, creating the enabling conditions to discuss and agree on the way forward, including the priorities for the years ahead.

I wish to extend my heartfelt gratitude to our partners, supporters, and the dedicated team of the ISA-China JTRC for their ongoing efforts and commitment. Your unwavering support and collaboration have been instrumental in our achievements. Together, we will continue to build on this momentum, advancing marine scientific knowledge and understanding for all and contributing to promote capacity development and the transfer of marine technology to developing States in support of sustainable management and protection of the deep ocean and its environment.

Secretary-General **Michael W. Lodge**
International Seabed Authority

前言

我很高兴向大家介绍中国-国际海底管理局（“海管局”）联合培训和研究中心（“联合中心”）2023-2024年年度报告。本报告概括了两年来取得的重大成就和合作努力，这些成就和努力推进了我们促进和鼓励发展中国家海洋科学研究和能力发展的使命。

通过中国自然资源部和国际海底管理局之间建立的伙伴关系，在青岛组织了第一次线下培训班。这一具有里程碑意义的活动汇集了来自21个不同国家的25名学员，为他们提供了深海勘探和技术方面的广泛知识和实践经验。学员参与和反馈强调了研讨会在提高他们的专业能力方面取得的成功。

中国-海管局联合中心指导委员会第四次会议是另一个亮点，为讨论和商定下一步工作以及未来几年的优先事项创造了有利条件。

我衷心感谢我们的合作伙伴、支持者和中国-海管局联合中心的敬业团队，感谢他们一直以来的努力和承诺。大家坚定不移的支持和合作为我们取得成绩发挥了重要作用。我们将以此为基础，共同再接再厉，增进公众对海洋科学知识的理解，促进能力发展和向发展中国家转让海洋技术，以支持深海及其环境的可持续管理和保护。

国际海底管理局迈克·洛奇秘书长



01.

ACTIVITIES HIGHLIGHTS 2023-2024

2023-2024 年主要工作

1.1. The fourth meeting of the ISA-China JTRC Steering Committee

1.1 联合中心指导委员会第四次会议

On 10th May 2023, the fourth meeting of the ISA-China JTRC Steering Committee was held in a hybrid format. The committee was fully recognized for its achievements including the design and implementation of the first training workshop. Sincere gratitude was expressed for the exceptional contributions of its members. The meeting also introduced and welcomed the new Steering Committee members and elected Mr. José Dallo Moros, Director of the Office of Environmental Management and Mineral Resources of ISA, as its new Chair for a two-year term.

2023年5月10日,中国-海管局联合中心指导委员会召开第四次会议,会议充分肯定上一届指导委员会在第一期培训班设计实施等方面取得的成绩,对委员们做出的杰出贡献表示衷心感谢。会议介绍并欢迎新的指导委员会委员,推选国际海底管理局环境管理和矿产资源办公室主任塞·达洛·莫罗斯先生为新主席,任期两年。



Fig 1. The fourth meeting of the ISA-China JTRC Steering Committee

1 联合中心指导委员会第四次会议

Composition of the ISA-China JTRC Steering Committee

联合中心指导委员会 (2023-2024)

Mr. José Dallo Moros
Director, Office of Environmental Management and Mineral Resources, ISA (Chair)



何塞-达洛先生
海管局环境管理与矿产资源办公室主任 (主席)；

Dr. Suzan Mohamed El-Gharabawy
Head of the Marine Geophysics Department at the National Institute of Oceanography and Fisheries, Egypt



苏珊·穆罕默德·艾伊-格拉巴威博士
埃及国家海洋与渔业研究所副主席

Dr. Georgy Cherkashov
Research Director of The All-Russia Scientific Research Institute for Geology and Mineral Resources of the Ocean, Russian



格里高利·戚卡谢夫博士
俄罗斯联邦全俄海洋地质矿产资源科学研究所研究主任

Ms. Chen Danhong
Director-General of the Department of International Cooperation, Ministry of Natural Resources of China



陈丹红女士
自然资源部国际合作司司长

Mr. Fan Jingsheng
then-Deputy Director-General of China Deep Ocean Affairs Administration



范京生先生
时任中国大洋事务管理局副局长

Ms. Gu Wu
then-Director-General of National Deep Sea Centre of China



古妩女士
时任国家深海基地管理中心主任

Mr. Pan Xinchun
Vice President and Secretary-General of China Oceanic Development Foundation



潘新春先生
中国海洋发展基金会副理事长、秘书长

The Steering Committee reviewed and adopted the 2022 ISA-China JTRC Annual Report and noted the successful conduct of the 2022 online training workshop. The work plan for the 2023 ISA-China JTRC training workshop was also adopted, and a decision was taken to hold the training workshop with the theme of marine science and technology in October 2023 in Qingdao. The training workshop contributed to the implementation of the ISA Capacity Development Strategy and the ISA's Action Plan for Marine Scientific Research¹ in support of the UN Ocean Decade of Ocean Science for Sustainable Development, while facilitating international cooperation among developing States to practice the vision of building a maritime community with a shared future. The meeting also exchanged views on strengthening cooperation on deep-sea projects, and promoting collaborative research. Participants agreed to work together to define and conceptualize joint research programs.

会议审议通过中国-海管局联合中心2022年年度报告,对2022年线上培训班成功举办表示充分肯定。会议审议通过2023年中国-海管局联合中心培训班工作计划,决定于2023年10月在中国青岛以深海资源勘探开发与生态保护为主要内容的培训班,支撑联合国可持续发展目标14能力建设和海管局能力发展战略,促进发展中国家之间的国际合作,实现建设海洋命运共同体的愿景。会议还就加强深海项目合作、促进合作研究交换了意见。与会者同意共同努力,定义和概念化联合研究项目。

1 ISBA/26/A/4

1.2 ISA-China JTRC 2023 training workshop

1.2.1 Preparations

The ISA Secretariat announced the training course on 14th July 2023, and the applications remained open until the end of August 2023. In total, 92 applications were received from applicants from 33 different countries. The list of trainees was jointly finalized by the ISA Secretariat and the ISA-China JTRC on 10th September 2023.

1.2.2 Opening ceremony

The ISA-China JTRC 2023 training workshop opened on 16th October 2023, in Qingdao. H.E Mr. Wang Hong, then Vice Minister of the Ministry of Natural Resources of China and Director of the State Oceanic Administration, H.E. Michael W. Lodge, ISA Secretary-General, and Ma Xinmin, Director of the Department of Treaties and Laws of the Ministry of Foreign Affairs of China, delivered opening remarks. Guests from the China Oceanic Affairs Administration, the China Ocean Development Foundation, and other relevant organizations attended and were invited to delivered opening statements. International and Chinese experts, as well as 25 trainees from 21 developing States including Antigua and Barbuda, Argentina, Bangladesh, Benin, Brazil, Ghana, Indonesia, Fiji, Mexico, Morocco, Mozambique, Nigeria, Papua New Guinea, Peru, Sierra Leone, South Africa, Sri Lanka, Tanzania, Togo, and Tunesia and China attended the ceremony.

1.2 联合中心2023年培训班

1.2.1 筹备工作

2023年7月14日,海管局秘书处发布公告,启动学员招募工作。截至8月31日,海管局秘书处共收到来自33个国家的92名候选人提交的报名申请。2023年9月10日,中方与海管局共同确认形成了学员建议名单。

1.2.2 开班仪式

2023年10月16日上午,中国-国际海底管理局联合培训和研究中心2023年培训班在青岛正式开班。时任中国自然资源部副部长、国家海洋局局长王宏先生,国际海底管理局秘书长迈克·洛奇先生,中国外交部条约法律司司长马新民先生发表视频致辞,中国大洋事务管理局、中国海洋发展基金会、青岛市等有关机构领导出席并致辞。海管局秘书处和法技委相关专家、国内外授课专家以及来自阿根廷、安提瓜和巴布达、巴西、巴布亚新几内亚、贝宁、秘鲁、多哥、斐济、加纳、孟加拉国、墨西哥、摩洛哥、莫桑比克、南非、尼日利亚、塞拉利昂、斯里兰卡、坦桑尼亚、突尼斯、印度尼西亚和中国共计21个发展中国家的25位学员参加开班仪式。





Fig 2. Group photo of attendance in opening ceremony
图2 开班仪式全体参会人员合影

Mr Wang Hong highlighted China's constructive role in the surveying and exploration of the contract area, its contributions to the development of Regional Environmental Management Plans (REMPs) and advancing the discussions on the regulations for seabed minerals in the Area through active participation in ISA-led initiatives and programs. It was also noted that China has continued to actively supporting developing States in improving their capacity to participate in international seabed affairs and in providing training for research in deep sea related topics. He highlighted that trainees were expected to acquire extensive knowledge about the ocean and specifically the deep-sea, experience the immersive marine culture in Qingdao, deepen their understanding of China, and contribute to the advancement of future marine cooperation.

开班仪式上，自然资源部副部长王宏指出，中国积极参与和支持海管局发起的倡议和项目，在矿区调查勘探、区域环境管理计划、开发规章制度等方面发挥了建设性作用。同时，中国积极支持广大发展中国家提升参与国际海底事务的能力，尽己所能协助有关国家培养国际海底科研和管理人才。相信各位学员在培训期间，不仅能获取丰富的海洋知识和娴熟的技术能力，还会加深对新时代中国的了解，感受中国浓厚的传统文化。



Fig 3. Mr. Wang Hong delivering his opening remarks in opening ceremony

图3 王宏先生在开班仪式上视频致辞

H.E. Michael W. Lodge recalled that the ISA-China JTRC was launched as the first-ever joint training and research centre established by ISA in partnership with one of its members. He recalled that the overall objectives of the ISA-China JTRC consisted of supporting the mandate and work of ISA to the promotion of marine scientific research and the development of the capacities of developing States, members of ISA. He also noted that the programme of the training workshop had been designed to offer a better understanding of the deep-sea and its ecosystems and how ISA, through the mandate assigned to it by UNCLOS, continues to act as a responsible custodian for this global common.

海管局秘书长迈克·洛奇先生表示,中国-海管局联合中心是海管局与其成员国建设的首个联合培训和研究中心。自成立以来,中国-海管局联合中心根据海管局成员确定的需求和战略研究优先事项组织、设计和实施相关活动,促进海洋科学研究和发展中国家的能力建设。本次培训班将帮助学员深入理解深海的潜力和奥秘并了解海管局在《联合国海洋法公约》框架下的工作任务及方式。



Fig 4. H. E. Michael W. Lodge delivering his remarks in opening ceremony

图4 海管局秘书长迈克·洛奇先生在开班仪式视频致辞

Mr. Ma Xinmin from the Ministry of Foreign Affairs of China said, this program is conducive to the dissemination of deep sea knowledge, sharing of experience and practices, helping the international community to understand, protect and exploit the deep sea, and enhancing the well being of all humankind. During the opening ceremony, Mr. José Dallo Moros, Director of the Office of Environment and Mineral Resources of ISA, explained ISA's role and mandate under UNCLOS and the main work of his office. Mr. Liu Feng, Vice-President of the China Ocean Mineral Resource R&D Association (COMRA), described China's active participation in the work of ISA. He also mentioned China's provision of training and research support to developing States, as well as its commitment to promoting international cooperation for the development of deep-sea science and technology.

中国外交部马新民司长表示，本次培训班有利于传播深海知识，分享经验和做法，帮助国际社会了解、保护和开发深海，增进全人类的福祉。海管局环境矿产办公室主任何塞·达洛·莫罗斯先生在开班仪式上介绍了海管局在《联合国海洋法公约》下的作用和任务以及环境管理和矿产资源办公室的主要工作。中国大洋矿产资源研究开发协会副理事长刘峰先生介绍了中国积极参与海管局工作，为发展中国家提供培训和研究支持，致力于推动国际合作，促进深海科学和技术的发展。



Fig 5. Mr. Ma Xinmin from the Ministry of Foreign Affairs of China delivered video speech in opening ceremony
图5 中国外交部马新民司长在开班仪式视频致辞



Fig 6. Mr. José Dallo Moros and Mr. Liu Feng in their respective lectures
图6 何塞·达洛·莫罗斯先生和刘峰先生在开班仪式上作报告

1.2.3 Theoretical training

The 12-day training workshop on the theme "Marine science and technology" covered the assessment of mineral resources in the international seabed area, the protection of typical habitats and ecosystems, deep-sea exploration and data acquisition and application, deep-sea governance, and marine culture and capacity development. Ten international experts invited by ISA, including members of its LTC, as well as ten experts from the COMRA, the China Oceanic Development Foundation (CODF), the China Institute for Marine Affairs of the MNR (CIMA), the First Institute of Oceanography of the MNR (FIO), the Second Institute of Oceanography of the MNR (SIO), the Third Institute of Oceanography of the MNR (TIO), the Guangzhou Marine Geological Survey (GMGS), the Ocean University of China (OUC) and the Beijing Pioneer Hi-Tech Development Company (BPHDC) delivered offline and online theoretical lectures.

1.2.3 理论授课

为期12天的培训班以“海洋科学与技术”为主题，培训内容涉及国际海底区域矿产资源评估与开发、深海典型生境与生态系统保护、深海探测及数据获取与应用、深海领域治理国际规则、海洋文化和能力建设等。来自海管局环境管理和矿产资源办公室、法律与技术委员会的10位专家和来自中国大洋协会、中国海洋发展基金会、自然资源部海洋发展研究战略所、自然资源部海洋一所、自然资源部海洋二所、自然资源部海洋三所、广州海洋地质调查局、中国海洋大学、北京先驱高技术开发公司等机构的10名专家通过线下和线上形式开展理论授课。





Fig 7. Training workshop lectures

图7 理论授课培训

1.2.4 On-land, hands-on training

The trainees received hands-on training on land, utilizing the advanced technical facilities of the ISA-China JTRC. This unique practical training focused on operating deep-sea technical equipment. The trainees visited the "Road to the Deep Sea" Museum, where they explored the research, development, and application of remotely operated underwater vehicles (ROVs) and autonomous underwater vehicles (AUVs). They also experienced simulated exploration operations using the ROV simulator, enhancing their practical skills and understanding of deep-sea technology

1.2.4 陆上实践培训

本次培训活动充分发挥联合中心的技术装备优势, 设置了独特的深海技术装备操作实践培训, 学员参观了“深海之路”成就馆, 近距离了解了无人缆控潜水器 (ROV) 和自主式水下航行器

(AUV) 的研发与应用情况, 亲身体会了水下机械手的操作, 并使用ROV模拟训练器进行了海底模拟探测作业。通过操作实践培训, 学员们对深海探测作业有了全面了解, 并希望通过多种形式深化国际交流合作。



Fig 8. Trainees in hands-on training

图8 学员参与操作实践培训

1.2.5 Off-shore Training

Participants boarded a research vessel at the National Deep Sea Centre for offshore training. During the voyage, the trainees learned to operate a Conductivity-Temperature-Depth device (CTD) and a box sediment sampler, as well as the use and data processing methods of ship-borne Acoustic Doppler Current Profiler (ADCP) and bathymetric side-scan sonar. Through this hands-on experience at sea, the trainees gained valuable insights into the operation of marine research vessels and their exploration equipment. They also enhanced their practical skills in using deep-sea equipment and in acquiring and processing of marine data.

1.2.5 海上实习

在国家深海基地管理中心,学员们登上科考船进行海上实习。在船舶走航和定点作业过程中,学员们学习了温盐深仪的作业流程和操作方法、箱式沉积物取样器的作业流程和样品处理方法、船载声学多普勒流速剖面仪与测深侧扫声呐的使用和数据处理方法等。通过海上实习,学员们对海洋科考船舶和探测设备的使用有了系统认识,切实提高了深海装备使用和海洋数据获取与处理的实践操作能力。



Fig 9. Trainees in offshore training

图9 学员参与海上实习培训

1.2.6 Site visiting

During the training workshop, trainees visited various institutions and sites in Qingdao including the First Institute of Oceanography (FIO), the North Sea Bureau of the MNR, the Institute of Oceanology, Chinese Academy of Sciences (IOCAS), the OUC, the Institute of Oceanographic Instrumentation, Shandong Academy of Sciences (IOISAS), BGI Qingdao branch, and Mount Laoshan. These visits enriched their knowledge of marine scientific research and marine technology, allowed them to appreciate the distinctive cultures of different countries, and provided an opportunity to experience the unique cultural landscape of Qingdao.

1.2.6现场考察

培训期间,学员们实地考察了自然资源部第一海洋研究所、自然资源部北海局、中科院海洋研究所、中国海洋大学、山东省科学院海洋仪器仪表研究所、青岛华大基因研究院等驻青海洋科研机构,参观了上海合作组织地方经贸示范区。通过考察参观,学员们丰富了关于海洋科研和海洋技术装备的知识,领略了不同上合组织成员国的特色文化,体验了青岛独有的山海人文景观。



Fig 10. Trainees in site visiting
图10 学员参与现场考察

1.2.7 Group Presentation

At the closing ceremony on 27th October 2023, the 25 trainees presented the assignments that they developed during the training workshop, working in multidisciplinary groups. They addressed three themes “Comparison of deep-sea mining versus land-based mining from different perspectives” “Analysis of the differences between 3 types of minerals from different perspectives” and “Conservation measures that would work best for deep sea exploitation”. Mr. Liu Feng, Dr. Malcolm Clark (member of LTC, ISA), Dr. Becky Hitchin (member of LTC, ISA) and Dr. Noémie Wouters (coordinator of Marine Scientific Research Action Plan, ISA) interrogated the students and assessed the group reports as members of the reviewing panel.

1.2.7 分组报告

10月27日结业汇报上, 25名培训学员分为4个组, 以“三类海底矿产资源的差异分析”“深海采矿与陆地采矿的地质因素与生物因素对比研究”“深海开发的保护方法”等为题目汇报了在此次培训班上的收获。中国大洋协会副理事长刘峰先生, 海管局法技委委员马尔科姆·克拉克博士、贝基·希钦博士和海管局秘书处协调员娜奥米·沃特博士对报告进行了评审, 一致同意各分组报告评审通过。



Fig 11. Trainees in group presentations

图11 学员分组做结业汇报

1.2.8 Closing Ceremony

At the closing ceremony, Mr. Liu Feng, Mr. Pan Xinchun, Dr. Malcolm Clark, Dr. Becky Hitchin and Dr. Noémie Wouters, as representatives of the lecturing experts, along with Ms. Randa Mejri (Tunisia), Ms. Kadjogbe Olanlo (Togo), Mr. Ivorymae Coker (Sierra Leone) and Mr. Daniel Quarshie (Ghana), as trainee representatives, expressed and shared their gratitude and positive reflections on the outcomes of the workshop. Ms. Gu Wu, together with Mr. Liu Feng, delivered the closing speech and awarded the certificates to the participants.

1.2.8 结业仪式

结业仪式上, 中国大洋协会刘峰先生、中国海洋发展基金会潘新春先生、海管局马尔科姆·克拉克博士、贝基·希钦博士、海管局秘书处娜奥米·沃特博士作为授课专家代表致辞; 塞拉利昂的艾弗里梅先生、加纳的丹尼尔先生、突尼斯的兰达女士和多哥年卡乔格贝女士分别作为学员代表致辞; 中国-海管局联合中心主任、深海中心主任古妩女士代表联合中心致辞, 并与刘峰副理事长共同向学员们颁发毕业证书。



Fig 12. Trainees in closing ceremony
图12 结业仪式

1.2.9 Feedback and Evaluation

Upon completion of the training, ISA-China JTRC conducted a questionnaire among all 25 trainees and lecturers, to gauge their views and satisfaction levels. The survey, designed using Mail Chimp, sought feedback on the quality of services provided, the professionalism of the experts, the relevance of the training to their professional development, and the extent to which the training had enabled developing States to engage in deep-sea affairs. An impressive 24 out of 25 trainees responded. The feedback was overwhelmingly positive, with participants expressing heartfelt gratitude and praising the program's diversity and structure. They agreed it was an excellent platform to broaden their horizons, learn about the latest marine technology, and expand their professional networks.

Dr. Becky Hitchin remarked, "The workshop brings me more idea and understanding of China and Chinese people on their thoughts, their loves and their interests, everybody was so warm, welcoming and helpful, and I couldn't have wanted more than everything they gave us over the last two weeks". Mr. Coffi Zinzindohoue from Benin said, "It's absolutely a pleasure for me to be part of this workshop, I have gained a good knowledge about deep sea mining, and now I'm ready to go back to my home and share my knowledge". Mr. Abubakar Zailani from Nigeria added, "I am grateful to this incredible journey, this experience has not only expanded my knowledge, but also give me a long-life friendship and memories".

More than 90% of the surveyed trainees rated the teaching arrangement, professional knowledge and skills of the training experts as 'excellent' or 'good'. They also found the training highly relevant to their careers, believing it would significantly assist in their professional development and participation in deep-sea activities in their countries. Figure 12 illustrates the trainees' survey responses and the overall results of this training workshop.

1.2.9 培训反馈与评价

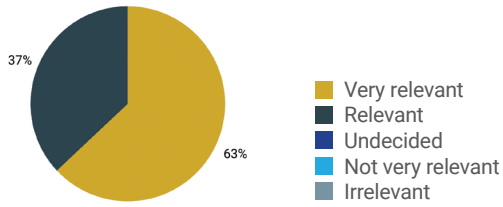
培训结束后,中国-海管局联合中心对全部25名学员和教师进行了问卷调查,以了解他们的观点和满意度。该调查使用Mail Chimp设计,旨在就培训质量、专家的专业精神、培训对其专业发展的相关性以及培训对发展中国家参与深海事务的作用等方面征求反馈意见。25名学员中有24人做出了令人印象深刻的回应。反馈非常积极,参与者表达了衷心的感谢,并赞扬了该计划的多样性和结构。他们一致认为,这是一个开阔视野、了解最新海洋技术和扩大专业网络的绝佳平台。

贝基·希钦博士表示:“此次中国之行让我了解了中国人民和他们的所想所爱,每个人都如此温暖、热情和乐于助人,非常感谢你们在过去两个周所给予我们的关怀和照顾,这是一个令人印象深刻的经历。”贝宁学员科菲·杰拉德表示:“这是一次丰富的经历,我们在这里获得和分享了我们的知识,探索了海洋的奥秘。”尼日利亚学员阿布巴卡·扎拉尼说:“此次培训班取得了巨大成功,为我们所有人提供了个人成长的平台,谢谢你们给我们的友谊和回忆。”

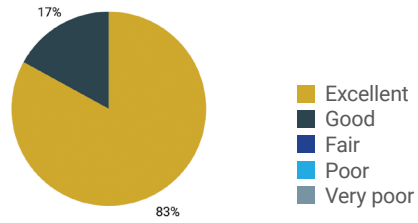
90%以上的受访学员对本次培训的教学安排、培训专家专业知识与技能给出了“优秀”或“良好”的评价意见,受访学员一致认为本次培训与其职业生涯十分相关,并将对他们在专业领域的发展及参与本国深海活动有所帮助。图12显示了学员的调查回复和本次培训研讨会的总体效果。



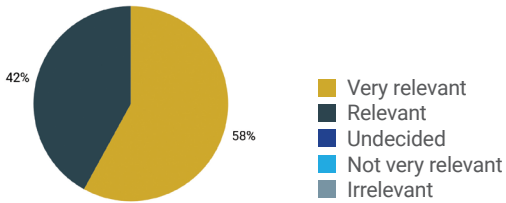
Please rate the relevance of the topics covered in the training



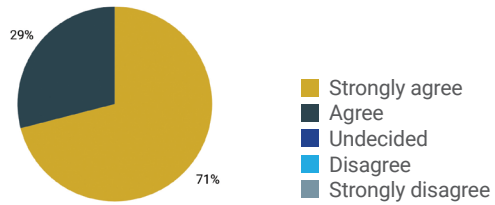
How would you rate the support provided by the ISA Secretariat and the ISA-China JTRC before the training workshop?



How relevant was the content presented to your work context?



Would your knowledge from the training workshop be helpful if you were called upon to support a DSM project in your home country?



What was your perception of the organisational part of your training experience (application, information flow and communication, technical arrangements for the workshop)?

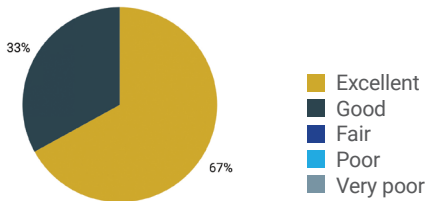


Figure 12: Results of the trainees' survey responses

图12 学员问卷调查结果

1.3 Collaborative Research

In 2023 and 2024, the Secretariat of ISA-China JTRC and the Secretariat of ISA engaged in in-depth discussions to determine the best path forward for promoting international research including the potential project scope. These comprehensive exchanges laid a solid foundation for the substantive development of collaborative research in the upcoming year.

1.4 The fifth meeting of the ISA-China JTRC Steering Committee

In November 2024, the fifth meeting of the ISA-China JTRC Steering Committee was held, to introduce the new steering committee members and the new JTRC director; review and discuss the 2023 annual report; approve the programme of the 2024 training workshop on the ISA process of Regional Environmental Management Plans (REMPS) for the protection of the marine environment; and the details regarding the scope of initiating collaborative research programs on biodiversity, data management and the resilience of ecosystems.

Mr. José Dallo Moros
Director, Office of Environmental Management and Mineral Resources, ISA (Chair)



何塞-达洛先生
海管局环境管理与矿产资源办公室主任 (主席);

Dr. Georgy Cherkashov
Research Director of The All-Russia Scientific Research Institute for Geology and Mineral Resources of the Ocean, Russian



格里高利·戚卡谢夫博士
俄罗斯联邦全俄海洋地质矿产资源科学研究所研究主任

Ms. Dongmei Tang
Deputy Director of the China Deep Ocean Affairs Administration



唐冬梅
中国大洋事务管理局副局长

Mr. Pan Xinchun
Vice President and Secretary-General of China Oceanic Development Foundation



潘新春先生
中国海洋发展基金会副理事长、秘书长

1.3 联合中心研究工作

2023年至2024年,中国-海管局联合中心秘书处与海管局秘书处就联合研究工作进行了深入讨论,以确定促进国际研究的最佳途径,包括潜在的项目范围。这些全面的交流为来年合作研究的实质性发展奠定了坚实基础。

1.4 联合中心指导委员会第五次会议

2024年11月,联合中心指导委员会召开第五次会议,议题包括:介绍新任指导委员会委员和新任联合中心主任;审查和讨论2023年年度报告;批准2024年国际海底管理局区域环境管理计划(REMPS)培训班工作计划,以保护海洋环境;以及关于启动生物多样性、数据管理和生态系统复原力合作研究项目范围的详细信息。

Dr. Suzan Mohamed El-Gharabawy
Head of the Marine Geophysics Department at the National Institute of Oceanography and Fisheries, Egypt



苏珊·穆罕默德·艾伊-格拉巴威博士
埃及国家海洋与渔业研究所副主席

Ms. Chen Danhong
Director-General of the Department of International Cooperation, Ministry of Natural Resources of China



陈丹红女士
自然资源部国际合作司司长

Mr. Chunlei Zhang
Director General of the National Deep Sea Center (NDSC)



张春雷
国家深海基地管理中心主任、联合中心主任

02.

FINANCE AND RESOURCES

In 2023 and 2024, the ISA-China JTRC expended a total of approximately USD 400,000.

The Chinese partners contributed RMB 2,350,000 (around USD 336,000), with RMB 450,000 funded by the Ministry of Natural Resources (MNR), RMB 1,400,000 by the China Ocean Development Foundation (CODF) and RMB 200,000 funded by the Ocean Decade International Cooperation Center. The majority of these funds were allocated to organizing and implementing the training workshop, covering trainers' and experts' fees, and document and staff expenses. Additionally, in-kind support was provided by the National Deep Sea Centre, which covered costs related to the hands-on on and offshore training, amounting to approximately RMB 300,000 yuan.

The ISA-China JTRC also benefited from the support of ISA which totaled USD 64,000. This included an in-kind contribution equivalent to USD 50,000 for ISA staff time dedicated to supporting the implementation of the ISA-China JTRC activities, and approximately USD 14,000 for travel support for its experts. The in-kind support involved assistance with the implementation of the training workshop, including the announcement and selection of trainees, the design of the programme and logistical support during the training workshop in Qingdao.

二

经费使用情况

2023年至2024年,中国-海管局联合中心共计使用经费约40万美元。

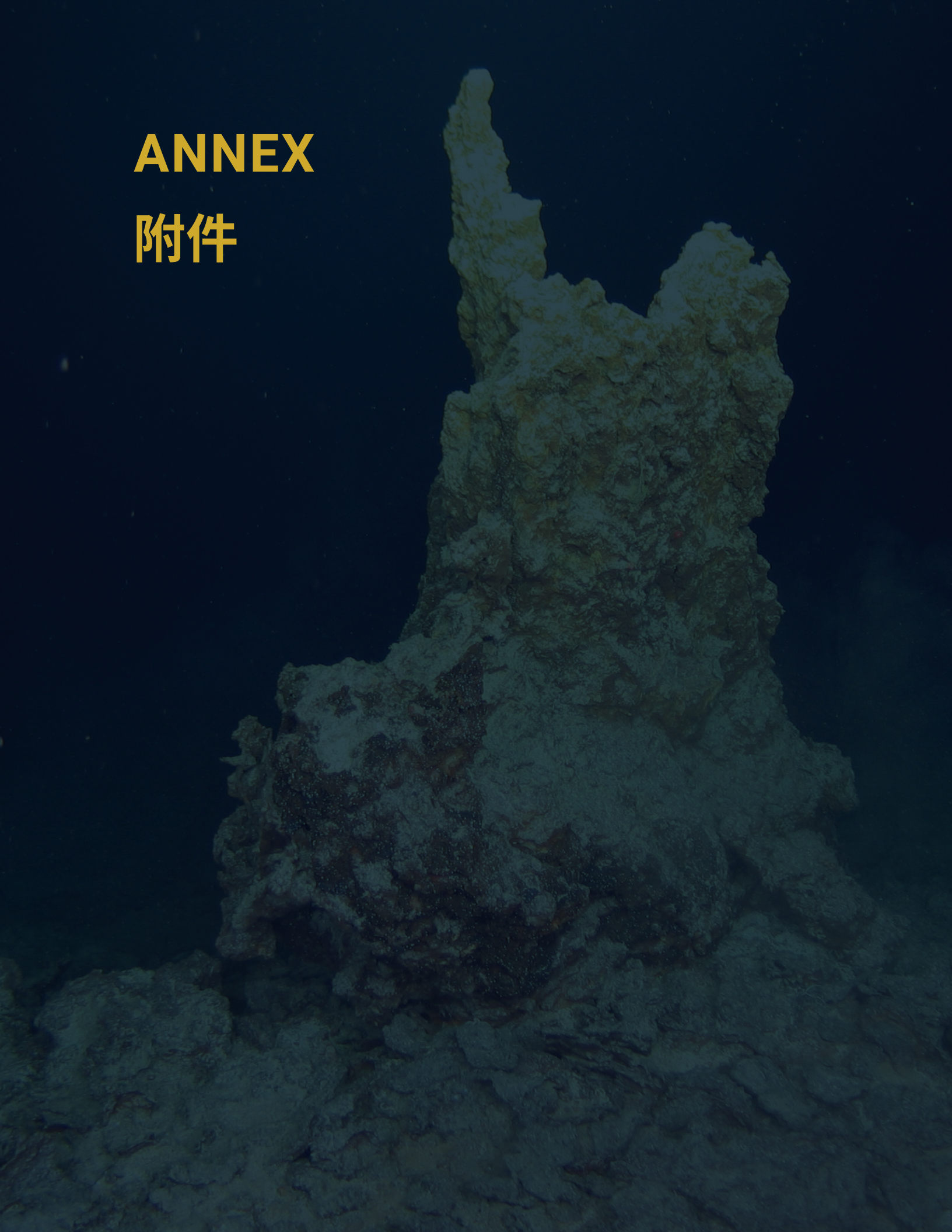
中方合作伙伴共支出人民币235万元(约合美元33.6万元),其中自然资源部资助经费人民币45万元,中国海洋发展基金会资助经费人民币140万元,“海洋十年”国际合作中心资助经费人民币20万元,主要用于联合中心培训班组织实施、教师授课、文档准备以及人员经费。国家深海基地管理中心对培训的实物支持,包括现场操作实践培训和海上实践培训相关费用等约合人民币30万元。

中国-海管局联合中心也得到来自海管局总计约6.4万美元的支持,其中包括相当于5万美元的实物捐助,用于支付海管局工作人员实施联合中心活动的工作时间以及约1.4万美元的专家差旅费。实物支持主要为协助举办培训班,包括发布公告和遴选学员,设计培训方案以及青岛举办培训班期间提供后勤支持。



ANNEX

附件



ANNEX 1

Agenda of 2023 Training workshop

Training Workshop 2023 “Marine Science and Technology” of the ISA - China Joint Training and Research Centre Qingdao, Shandong, China 16-27 October 2023

Week 1 (16-22 October 2023)		Location: Qingdao West Coast New Area
Date	Time	Agenda Item
Day 0 15/10/2023 Sunday	All day	Check in: International Cooperation Centre of Qingdao West Coast New Area
Day 1 16/10/2023 Monday	08:10-08:50	News media interviews
	09:00-09:40	High-level opening ceremony: Moderator: Ms. Gu Wu, Director of ISA-China Joint Training & Research Centre (ISA-China JTRC), Director of National Deep Sea Centre <ul style="list-style-type: none"> • Video Remarks by H.E. Wang Hong, Vice-minister of the Ministry of Natural Resources of China, Administer of State Oceanic Administration • Video Remarks by H.E. Michael W. Lodge, Secretary-General of ISA • Video Remarks by Mr. Ma Xinmin, Director-General of Department of Treaty and Law, Ministry of Foreign Affairs of China • Remarks by Mr. Lv Bin, President of China Oceanic Development Foundation • Remarks by Mr. Wu Changbin, Director-General of China Deep Ocean Affairs Administration • Remarks by Mr. Meng Qingsheng, Director of Qingdao Municipal Marine Development Bureau • Remarks by Xie Longmu, Deputy Director of Qingdao West Coast New Area Management Committee
	09:40-09:50	Official group photo
	09:50-10:10	Coffee break
	10:10-10:40	Subject: The role and the mandate of the ISA under UNCLOS and the activities of the Office of Environmental Management and Mineral Resources (OEMMR) Speaker: Mr. José Dallo, Director of OEMMR, ISA
	10:40-11:20	Subject: China’s Contributions in Advancing Knowledge of the International Seabed Speaker: Mr. Liu Feng, Vice President of China Ocean Mineral Resources Research and Development Association (COMRA), Head teacher
	11:30-13:00	Lunch & Noon break
	13:00-13:45	Subject: Promoting marine scientific research in the Area: ISA’s Marine Scientific Research (MSR) Action Plan Speaker: Dr. Noémie Wouters, Programme Coordinator (MSR)
	13:45-14:00	Coffee break
14:00-15:00	Subject: Trainee self-introduction Hosted by: 2 representatives of the ISA Legal and Technical Commission Dr. Noémie Wouters, Programme Coordinator (MSR) Dr. Gao Xiang, Executive Director of ISA-China JTRC	

附件1

中国-国际海底管理局联合培训和研究中心
“海洋科学与技术”2023年培训班
中国山东青岛
2023年10月16日至27日

联合中心2023年培训班议程

第一周2023年10月16日至22日 地点:青岛西海岸新区		
日期	时间	议程项目
15/10/2023 周日	全天	报 到: 青岛西海岸新区“海洋十年”国际合作中心
第一天 16/10/ 2023 周一	08:10-08:50	新闻采访
	09:00-09:40	高级别开幕式: 主持人: 古妩, 中国—海管局联合培训和研究中心、国家深海基地管理中心主任 <ul style="list-style-type: none"> 中国自然资源部副部长、国家海洋局局长王宏先生视频致辞 国际海底管理局秘书长迈克·洛奇先生视频致辞 中国外交部条约法律司司长马新民先生视频致辞 中国海洋发展基金会理事长吕滨先生致辞 中国大洋事务管理局局长邬长斌先生致辞 青岛市海洋发展局局长孟庆胜先生致辞 青岛市西海岸新区管委副主任谢龙目先生致辞
	09:40-09:50	集体合影留念
	09:50-10:10	茶歇
	10:10-10:40	主 题: 国际海底管理局在《联合国海洋法公约》下的作用和任务以及环境管理和矿产资源办公室的活动 主讲人: 何塞·达洛, 海管局环境矿产办公室主任
	10:40-11:20	主 题: 中国在增进国际海底知识方面的贡献 Speaker: 刘峰先生, 中国大洋协会副理事长, 培训班班主任
	11:30-13:00	午餐、午休
	13:00-13:45	主 题: 国际海底管理局的海洋科学研究行动计划 主讲人: 娜奥米·沃特博士, 国际海底管理局海洋科学研究协调员
	13:45-14:00	茶歇
14:00-15:00	主 题: 中国—海管局联合中心介绍, 培训班计划安排与团队建设, 培训学员分组及考核汇报要求概述 主讲人: 国际海底管理局秘书处、国家深海基地管理中心	

	15:00-15:30	Subject: Introduction to ISA-China JTRC including the training workshop: setting, programme, and practical arrangements and team building game Speaker: Mr. Liu Feng, Vice President of COMRA, Head teacher National Deep Sea Center
	17:30-19:00	Icebreaker reception
Day 2 17/10/2023 Tuesday	09:00-10:00	Subject: The deep-sea environmental management and conservation(1) Speaker: Dr. Malcolm Clark, Member of ISA Legal Technical Commission
	10:00-10:20	Coffee break
	10:20-11:50	Subject: Exploration method and technology of mineral resources in the Area Speaker: Prof. Tao Chunhui, Second Institute of Oceanography, MNR
	11:50-13:30	Lunch & Noon break
	13:30-14:30	Subject: Impacts of deep-sea mining Speaker: Dr. Becky Hitchin, Environmental assessment expert, ISA LTC Member
	14:40-15:40	Subject: Environmental impact assessments Speaker: Dr. Becky Hitchin, Environmental assessment expert, ISA LTC member
	15:40-16:00	Coffee break
	16:00-17:00	Subject: The deep sea environmental management and conservation (2) Speaker: Dr. Malcolm Clark, Member of ISA Legal Technical Commission
Day 3 18/10/2023 Wednesday	09:00-10:40	Subject: Mineral resources in the Area Speaker: Prof. Georgy A. Cherkashov, Research Director of The All-Russia Scientific Research Institute for Geology and Mineral Resources of the Ocean, The Russian Federation, ISA LTC member
	10:40-11:00	Coffee break
	11:00-12:00	Subject: Mineral resources assessment and processing Speaker: Prof. Georgy A. Cherkashov, Research Director of The All-Russia Scientific Research Institute for Geology and Mineral Resources of the Ocean of The Russian Federation, ISA LTC member
	12:00 - 13:30	Lunch & Noon break
	13:30-17:00	Site visit 1 <ul style="list-style-type: none"> • BGI-Qingdao • Institute of Oceanographic Instrumentation, Shandong Academy of Sciences; • Qingdao SCODA Pearl International Expo Centre
Day 4 19/10/2023 Thursday	09:00-10:30	Subject: The Sea and Civilizations Speaker: Prof. Deng Hongfeng, Ocean University of China
	10:30-10:50	Coffee break
	10:50-11:50	Subject: Status of the mining code governing the exploration and exploitation of mineral resources in the international seabed area Speaker: Lea Kolmos Weis; ISA Legal Officer Subject: Part XI of UNCLOS Speaker: Talatu Akindolire, ISA Legal Officer
	12:00-14:00	Lunch & Noon break

	15:00-15:30	???
	17:30-19:00	欢迎晚宴
第二天 17/10/2023 周二	09:00-10:00	主题: 典型深海生境和生态系统概述(线上) 主讲人: 马尔科姆·克拉克博士,海管局法技委委员
	10:00-10:20	茶歇
	10:20-11:50	主题: 国际海底资源调查方法与技术(线上) 主讲人: 陶春辉研究员,自然资源部第二海洋研究所
	11:50-13:30	午餐、午休
	13:30-14:30	主题: 深海采矿影响 主讲人: 贝基·希钦博士,海管局法律与技术委员会委员
	14:40-15:40	主题: (累积)影响评估的概念框架 环境影响评价的重要性 主讲人: 贝基·希钦博士,海管局法律与技术委员会委员
	15:40-16:00	茶歇
	16:00-17:00	主题: 深海生态的综合性、评估及其管理和缓解(线上) 主讲人: 马尔科姆·克拉克博士,海管局法律与技术委员会委员
Day 3 18/10/2023 Wednesday	09:00-10:40	主题: “区域”内矿产资源 主讲人: 格里高利·阿利克桑德罗维奇·戚卡谢夫教授,俄罗斯全俄海洋地质矿产资源科学研究所研究主任、海管局法技委委员
	10:40-11:00	茶歇
	11:00-12:00	主题: 矿产资源评估与加工 主讲人: 格里高利·阿利克桑德罗维奇·戚卡谢夫教授,俄罗斯全俄海洋地质矿产资源科学研究所研究主任、海管局法技委委员
	12:00 - 13:30	午餐、午休
	13:30-17:00	现场考察1: <ul style="list-style-type: none"> • 青岛华大基因研究院 • 山东省科学院海洋仪器仪表研究所 • 上合之珠国际博览中心
Day 4 19/10/2023 Thursday	09:00-10:30	主题: 海洋与人类文明 主讲人: 邓红风教授,中国海洋大学
	10:30-10:50	茶歇
	10:50-11:50	主题: 管理国际海底区域矿产资源开采和开发规章现状(视频) 主讲人: 莱亚·科尔莫斯·威斯女士,海管局法律官 主题: 《联合国海洋法公约》第十一部分(视频) 主讲人: 塔拉图·阿金多莱尔女士,国际海底管理局法律官
	12:00-14:00	午餐、午休

	14:00-15:30	Subject: Seafloor mapping using marine geophysical techniques Speaker: Dr. Suzan Mohamed El-Gharabawy, NIOF, Egypt
	15:30-15:50	Coffee break
	15:50-16:50	Subject: Capacity development, training and technical assistance Speaker: Dr. Suzan Mohamed El-Gharabawy, NIOF, Egypt
Day 5 20/10/2023 Friday	08:30-09:30	Subject: Promoting access and use of deep-sea data including case studies Speaker: Mr. Sheldon Carter, Database Manage ISA
	09:30-10:00	Coffee break
	10:00-11:00	Subject: Introduction to oceanography & GIS applications Speaker: Dr. Kioshi Mishiro, GIS Officer of ISA
	11:00-13:30	Lunch & Noon break
	13:30-17:00	Site visit 2 <ul style="list-style-type: none"> • Ocean University of China • Institute of Oceanology, Chinese Academy of Sciences
Day 6 21/10/2023 Saturday	All day	The day off
Day 7 22/10/2023 Sunday	All day	Marine culture expedition hiking in Laoshan Mountain in the daytime
Week 2 (23-27 October 2023) Location: Qingdao Oceantec Valley		
Date	Time	Agenda Item
Day 8 23/10/2023 Monday	09:00-12:00	Group I: On board training at sea Group II: Site visit 3: (1) Visit to the National Deep Sea Center (NDSC); (2) Technology showcase and operational practice of AUV/ROV in NDSC
	12:00-14:00	Lunch & Noon break
	14:00-17:00	Group II: On board training at sea Group I: Site visit 3: (1) Visit to the NDSC; (2) Technology showcase and operational practice of AUV/ROV in NDSC
Day 9 24/10/2023 Tuesday	09:00-10:00	Subject: Deep sea geological sample management Speaker: Dr. Ren Xiangwen, First Institute of Oceanography, MNR
	10:00-10:20	Coffee break
	10:20-11:20	Subject: Co-design of the Digital DEPTH, the Ocean Decade Programme Speaker: Prof. Xu Xuwei, Second Institute of Oceanography, MNR
	11:50-13:30	Lunch & Noon break
	13:30-17:00	Site visit 4: <ul style="list-style-type: none"> • First Institute of Oceanography • North Sea Bureau of MNR
Day 10 25/10/2023 Wednesday	09:00-10:30	Subject: Latest technological progress towards Sustainable Mining Speaker: Prof. Li Bo, Beijing Pioneer Hi-Tech Development Corporation
	10:30-10:40	Coffee break
	10:40-12:00	Subject: International Cooperation Practice of Marine Spatial Planning Speaker: Mr. Pan Xinchun, Vice President and Secretary-General of China Oceanic Development Foundation

	14:00-15:30	主题: 利用海洋地球物理技术进行海底测绘 主讲人: 苏珊·穆罕默德·格拉巴威博士, 埃及国家海洋和渔业研究所海洋地球物理系主任
	15:30-15:50	茶歇
	15:50-16:50	主题: 能力发展、培训和技术援助 主讲人: 苏珊·穆罕默德·格拉巴威博士, 埃及国家海洋和渔业研究所海洋地球物理系主任
第五天 20/10/2023 周五	08:30-09:30	主题: 促进获取和使用深海数据及其案例研究(线上) 主讲人: 谢尔顿·卡特先生, 国际海底管理局数据库管理
	09:30-10:00	茶歇
	10:00-11:00	主题: 海洋学和地理信息系统应用简介(线上) 主讲人: 三代健治博士, 国际海底管理局GIS官员
	11:00-13:30	午餐、午休
	13:30-17:00	现场考察2: • 中国海洋大学鱼山校区 • 中国科学院海洋研究所
第六天 21/10/2023 周六	全天	休息
第七天 22/10/2023 周日	全天	崂山山海文化考察
第二周 (2023年10月23日至27日) 地点: 青岛蓝色硅谷		
日期	时间	议程项目
第八天 23/10/2023 周一	09:00-12:00	第一组: 海上培训 第二组: 现场考察3: 参观国家深海基地管理中心; AUV/ROV操作实践
	12:00-14:00	午餐、午休
	14:00-17:00	第二组: 海上培训 第一组: 现场考察3: 参观国家深海基地管理中心; AUV/ROV操作实践
第九天 24/10/2023 周二	09:00-10:00	主题: 深海地质样品管理 主讲人: 任向文博士, 自然资源部第一海洋研究所
	10:00-10:20	茶歇
	10:20-11:20	主题: “数字化的深海典型生境”海洋十年大科学计划联合设计 主讲人: 许学伟研究员, 自然资源部第二海洋研究所
	11:50-13:30	午餐、午休
	13:30-17:00	现场考察4: • 自然资源部第一海洋研究所 • 自然资源部北海局
Day 10 25/10/2023 Wednesday	09:00-10:30	主题: 绿色采矿及环境评价最新进展 主讲人: 李波研究员, 北京先驱高技术开发公司
	10:30-10:40	茶歇
	10:40-12:00	主题: 海洋空间规划的国际合作实践 主讲人: 潘新春先生, 中国海洋发展基金会副理事长、秘书长

	12:00-14:00	Lunch & Noon break
	14:00-15:00	Subject: Multi-beam technology and data processing for seabed detection Speaker: Dr. Wu Tingting, Guangzhou Marine Geological Survey
	15:00-17:00	Preparation group assignment
Day 11 26/10/2023 Thursday	09:00-10:00	Subject: Introduction to the United Nations Convention of the Law of the Sea Speaker: Prof. Zhang Haiwen, Director of China Institute for Marine Affairs
	10:00-10:20	Coffee break
	10:20-12:00	Subject: Conservation and sustainable use of marine biodiversity of areas beyond national jurisdiction (BBNJ) Speaker: Prof. Zhang Haiwen, Director of China Institute for Marine Affairs
	12:00-14:00	Lunch & Noon break
	14:00-15:30	Subject: Deep sea genetic resources Speaker: Prof. Shao ZongZe, Third Institute of Oceanography, MNR
	15:30-15:50	Coffee break
	15:50-16:50	Preparation group assignment
Day 12 27/10/2023 Friday	10:00-12:00	Presentation group assignment: Panel: Mr. Liu Feng; Dr. Malcolm Clark; Dr. Becky Hitchin; Dr. Noémie Wouters;
	12:00-14:00	Lunch & Noon break
	14:00-15:30	Graduation and closing award ceremony: Host: Dr. Gao Xiang, Executive Director of ISA - China JTRC Speech from lecturer representatives: Mr. Liu Feng, Vice-President of the China Ocean Mineral Resource R&D Association (COMRA); Mr. Pan Xinchun, Vice President and Secretary-General of China Oceanic Development Foundation; Dr. Malcolm Clark, Member of ISA Legal Technical Commission; Dr. Becky Hitchin, Member of ISA Legal Technical Commission; Dr. Noémie Wouters, Programme Coordinator (MSR); Speech from trainees representatives: Ms. Randa Mejri (Tunisia), Ms. Kadjogbe Olanlo (Togo), Mr. Ivorymae Coker (Sierra Leone), Mr. Daniel Quarshie (Ghana), Certificate award & Group Photo
	16:30-18:30	Closing cocktail

	12:00-14:00	午餐、午休
	14:00-15:00	主 题:多波束海底探测技术与数据处理 主讲人:吴婷婷博士,广州海洋地质调查局
	15:00-17:00	准备小组作业
Day 11 26/10/2023 Thursday	09:00-10:00	主 题:《联合国海洋法公约》简介 主讲人:张海文研究员,自然资源部海洋发展研究战略所所长
	10:00-10:20	茶歇
	10:20-12:00	主 题:国家管辖范围外区域海洋生物多样性(BBNJ)养护和可持续利用 主讲人:张海文研究员,自然资源部海洋发展研究战略所所长
	12:00-14:00	午餐、午休
	14:00-15:30	主 题:深海基因资源 主讲人:邵宗泽研究员,自然资源部第三海洋研究所
	15:30-15:50	茶歇
	15:50-16:50	准备小组作业
Day 12 27/10/2023 Friday	10:00-12:00	小组作业汇报(混合会议): 主持人:高翔博士,联合中心执行主任 评委:刘峰先生,中国大洋协会副理事长,培训班班主任 马尔科姆·克拉克博士,海管局法技委委员 贝基·希钦博士,海管局法技委委员 娜奥米·沃特博士,海管局海洋科学研究协调员
	12:00-14:00	午餐、午休
	14:00-15:30	结业仪式: 主持人: 高翔博士,中国-海管局联合中心执行主任 教师代表发言: <ul style="list-style-type: none"> • 中国大洋协会副理事长,培训班班主任刘峰先生 • 中国海洋发展基金会副理事长、秘书长潘新春先生 • 海管局法技委委员马尔科姆-克拉克博士 • 海管局法技委委员贝基-希钦博士线上 • 海管局海洋科学研究协调员娜奥米沃特博士 • 国家深海基地管理中心主任、联合中心主任古妩女士 学员代表发言: <ul style="list-style-type: none"> • 丹尼尔·夸希先生(塞拉利昂) • 卡乔格贝·欧兰洛女士(加纳) • 兰达·梅瑞女士(突尼斯) • 艾弗里梅·库克先生(多哥) 发放毕业证书 集体合影留念
	16:30-18:30	学员返程

ANNEX 2

Opening remarks in 2023 Training Workshop

Remarks by H.E. Wang Hong, Vice Minister of MNR, Director General of the State Oceanic Administration, China

Your Excellency Secretary General Michael Lodge,
Dear experts and trainees,
Ladies and gentlemen,

Greetings to you all!

It is a great pleasure to witness the launch of the second training workshop of the ISA-China Joint Training and Research Center (ISA-China JTRC) in this golden season of harvest. On behalf of the Ministry of Natural Resources (State Oceanic Administration) of China, let me start by expressing my sincere congratulations on the launch of the training workshop and a warm welcome to the experts and trainees from the ISA and around the world. This is the first in-person training workshop organized in China since the establishment of the ISA-China JTRC. Both sides have worked closely together and invested resources and hard work in the preparations. Hereby, I would like to express my heartfelt gratitude to Secretary General Lodge and his team at the ISA for their support.

In February, I led a delegation to the ISA in Jamaica where we had in-depth discussions with Secretary General Lodge on issues of common interest, such as regulations on the development of mineral resources in the Area, regional environmental management plans (REMPs), the International Treaty on the conservation and sustainable use of Marine Biodiversity of Areas beyond National Jurisdiction (BBNJ), marine scientific research, talent training, and capacity development. As always, both sides reaffirmed their willingness to further advance and deepen cooperation in the deep-sea field in the spirit of partnership. For many years, through active participation in and support of the various ISA-led initiatives and programs, China has played a constructive role in the surveying and exploration of mining areas, REMPs, and mineral development regulations. At the same time, China has actively supported, to the best of its ability, developing countries as they work to improve their capacity for participating in international seabed affairs and in training research and management talent in the international seabed field.

With this vision in mind, the ISA-China JTRC was founded to promote relevant training activities. Over the past three years since the ISA-China JTRC was established, colleagues from China and the ISA have made concerted efforts to improve the ISA-China JTRC through joint consultation and contribution and have established a solid foundation for regular training activities. As a next step, the two sides will further align and improve the strategic priorities and mechanisms of research cooperation to further advance scientific research and technological development in the international seabed area and contribute to sustainable development of the deep-sea area.

Ladies and gentlemen, I was pleased to learn that a total of 25 trainees from 21 developing countries are here in Qingdao to spend the next two weeks working with Chinese trainees on scientific and technical training activities on deep-sea resource development and environmental protection. In addition to attending theoretical courses prepared by the ISA and Chinese experts, the trainees will also make field trips to a number of Chinese marine organizations and universities and carry out hands-on operational activities using marine equipment and scientific research vessels provided by the Chinese side. In Qingdao, home to 30% of Chinese academicians and 40% of the R&D organizations in the field of marine studies, I believe the trainees will gain a great deal of ocean-related knowledge, experience the immersive marine culture in Qingdao, deepen their understanding of China, and contribute to the continued advancement of future marine cooperation.

Finally, I would like to express my sincere hopes for a fully successful workshop and the continued advancement of the ISA-China JTRC.

Thank you!

附件2

联合中心2023年培训班开班仪式致辞

中国自然资源部副部长、
国家海洋局局长王宏先生视频致辞

尊敬的迈克·洛奇秘书长，
各位专家和学员：

大家好！

非常高兴在金秋十月迎来中国—国际海底管理局联合培训和研究中心第二届培训班开班。本次培训班是联合中心成立以来首次在华举办的线下培训。首先，请允许我代表中国自然资源部、国家海洋局对各位专家和学员的到来表示诚挚的欢迎！对国际海底管理局的关心和支持表示衷心感谢！

今年2月，我率团访问了国际海底管理局，与秘书长先生就双方共同关心的“区域”矿产资源开发规章、区域环境管理计划、国家管辖范围以外区域海洋生物多样性养护和可持续利用国际协定、海洋科学研究、人才培养与能力建设等方面进行了深入交流，双方愿秉持一贯的合作精神，进一步推动和深化深海领域合作。

多年来，中方积极参与和支持国际海底管理局发起的倡议和项目，在区域调查勘探、区域环境计划、开发规章制度等方面发挥了建设性作用。与此同时，中方积极支持广大发展中国家提升参与国际海底事务的能力，尽己所能协助有关国家培养国际海底科研和管理人才。

联合中心也是在这样的愿景下成立，并致力于开展相关培训工作，共同提高科研和管理能力。联合中心成立三年来，中方和国际海底管理局同心协力、共商共建，积极推动开展常态化培训、科研等活动。下一步，双方还将继续加强对接，完善联合研究工作的战略方向和合作机制，为推动国际海底领域的科学研究和技术开发、促进深海可持续发展做出更大的贡献。

女士们、先生们，我了解到，共有来自20个发展中国家的20名学员参加此次培训班。在接下来两周时间里，你们将与中国学员一起开展深海资源开发与环境保护方面的培训活动。除了参加精心准备的理论课程外，学员们还将前往中国多个涉海机构和高校进行现场考察，开展实践活动。我相信，各国学员不仅能获取丰富的海洋知识和娴熟的技术能力，还会加深对新时代中国的了解，感受中国浓厚的传统文化。

最后，预祝本次培训班圆满成功，并祝中国-国际海底管理局联合培训和研究中心不断取得新成绩！

谢谢大家！

Remarks by H.E. Michael W. Lodge, Secretary-General of International Seabed Authority

Honourable Vice Minister Wang Hong,
Excellencies, Distinguished guests,
Ladies & gentlemen,

It is with great pleasure that we gather today for the opening of the second training workshop on “Deep-sea Science and Technology” organized under the auspices of the ISA-China Joint Training and Research Centre. Let me begin by expressing my sincere gratitude to the Ministry of Natural Resources of China for the support in organizing this important workshop. I’m equally grateful to the China Oceanic Development Foundation for sponsoring this training workshop, and to the Ministry of Foreign Affairs, as well as the Qingdao Municipal Government and other partners of the ISA-China JTRC for contributing to make this event a success. My sincere appreciation also goes to the National Deep Sea Centre for the constructive collaboration established with the Secretariat of the Authority and their tireless efforts.

Ladies and gentlemen, The ISA-China JTRC was launched three years ago as the first-ever joint training and research centre established by ISA in partnership with one of its members to support the mandate and work of the Authority to the promotion of marine scientific research and the development of the capacities of developing countries, members of the Authority.

Since the launch of the ISA-China JTRC, work has been carried out to organize and design the activities to be implemented in line with the needs identified by our members and the strategic research priorities identified by all ISA members and set out in the Action Plan adopted in support of the UN Decade of Ocean Science for Sustainable Development. Last year the ISA-China JTRC organized successfully its first training workshop. Regrettably, it had to be done remotely, therefore it is a great step ahead that this second workshop is now taking place in person. I am particularly satisfied that for this new workshop, the selection of trainees has allowed us to bring together a group of representatives from 21 different developing countries, including 3 experts from SIDS and 6 from LDCs. I am also delighted that for this second workshop, more than half of the participants are women.

Let me end by reiterating the importance I attach to this training workshop as it has been designed to expose you to the front-running science and technology in deep-sea-related fields.

I hope you will enjoy the exciting program that was carefully put together and goes well beyond theoretical lectures on topics such as mineral resources, environmental protection, deep-sea biodiversity and habitats, and deep-sea technologies and equipment. You will operate underwater vehicles, visit the ocean-related institutes in Qingdao, and even go offshore on a research vessel for hands-on training.

I sincerely thank the 20 top experts from the industry and academia who have accepted our invitation to share their knowledge and expertise with you including the representatives from the ISA’s Legal and Technical Commission and colleagues from the Secretariat.

Finally, I take the opportunity to encourage you to learn from each other and apply your new understanding to incentivize your respective countries to get engaged in deep-sea science. It is my firm belief that this training workshop will act as your gateway to an accurate and better understanding of the potential and wonders of the deep; and how ISA, through its mandates anchored in UNCLOS, continues to act as a responsible custodian for this global common.

I wish you a successful and productive training workshop, I very much look forward to hearing about the outcomes of your assignments and wish you the best of luck.

Thank you very much.

国际海底管理局秘书长迈克·洛奇先生视频致辞

尊敬的王宏副部长阁下，
各位嘉宾，女士们、先生们：

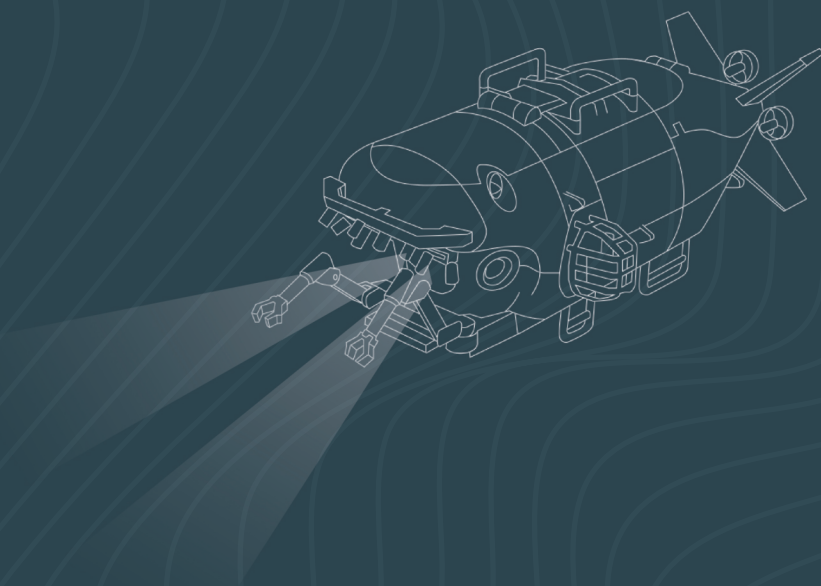
今天，我们非常高兴地聚集在一起，参加由中国-国际海底管理局联合培训和研究中心主办的“深海科学与技术”第二期培训班开班仪式。首先，我衷心感谢中国自然资源部对举办这次重要培训班的支持。我同样感谢中国海洋发展基金会出资支持此次培训班，感谢外交部、青岛市政府和中国—海管局联合中心的其他合作伙伴为成功举办此次活动做出的贡献。我也衷心感谢国家深海基地管理中心与海管局秘书处建立的建设性合作以及他们的不懈努力。

女士们、先生们，中国-海管局联合中心于三年前正式投入运行，是海管局与其成员合作建立的第一个联合培训和研究中心，旨在支持海管局的任务和工作，促进海洋科学研究和发展中国家的能力建设。自中国—海管局联合中心成立以来，我们一直在根据海管局成员确定的需求和战略研究优先事项以及支持联合国海洋十年行动计划的战略研究优先事项来组织、设计和实施相关活动。去年，中国—海管局联合中心成功举办了第一期培训班，因为疫情原因不得不远程进行，本次培训班以现场方式举办，是向前迈出的一大步。我特别感到满意的是，通过此次培训班的学员遴选工作，来自21个不同发展中国家（注：含中国）的代表得以聚在一起，其中包括来自小岛屿发展中国家的3名学员和来自最不发达国家的6名学员。我还感到高兴的是，此次培训班约一半的参与者是女性。

我想重申我对此次培训班的重视，它旨在让您了解深海相关领域的前沿科学技术。我希望你们会喜欢这个精心安排、激动人心的培训活动。除了矿产资源、环境保护、深海生物多样性和生境以及深海技术和装备等主题的理论讲座以外，大家还将操作潜水器，参观青岛海洋相关机构，甚至乘坐科考船出海进行实践培训。我衷心感谢20位来自行业和学术界的顶尖专家，其中包括海管局法律和技术委员会的代表以及秘书处的同事，他们受邀与学员们分享他们的专业知识。

最后，我借此机会鼓励大家相互学习，并运用你们新的理解来激励你们各自的国家参与深海科学。我坚信，这次培训班将为大家打开一扇大门，使大家更加准确、深入地理解深海的潜力和奥秘，并了解海管局如何通过以《联合国海洋法公约》为基础的授权持续地担负起全球共同事务负责任守护者的角色。

我祝愿此次培训班圆满成功、成果丰硕，我非常期待听到大家的成果，祝大家好运。
非常感谢！





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