



MEKONG
INSTITUTE



SUMMARY
REPORT

Consultation Workshop on
**TECHNOLOGY
& INNOVATION**
Policy Development in the
Lancang-Mekong Region

November 18-20, 2019
Khon Kaen, Thailand

ACKNOWLEDGEMENT

The organizing team would like to express its deep appreciation to the organizations and individuals who have rendered cooperation and assistance to make this seminar successful.

First of all, we would like to express our appreciation to the People's Republic of China for sponsoring the consultation workshop.

Secondly, our deep appreciation goes to Permanent Mission of the People's Republic of China to United Nations Economic and Social Commission for Asia and the Pacific for their guidance and support.

Thirdly, our special thanks go to the facilitator for his facilitation and professionalism which helped us to achieve the consultation workshop's objectives.

Last but not least, we would like to express our greatest thanks to all the delegates for their participation and inputs.

Innovation and Technological Connectivity Department

Mekong Institute

November 2019



EXECUTIVE SUMMARY

A year ago, with the support of the Government of the People's Republic of China (P. R. China), Mekong Institute (MI) organized the Seminar on “Promoting Innovation and Technology as Driven Tools for Economic Sustainability in the GMS” in Bangkok, Thailand on November 28, 2018. It aimed to create a platform for innovation matching by direct interaction and exchange of knowledge on efficient innovation and technologies; develop collaborative approach with academics and industries for technology transfer and commercialization; provide solutions through innovations and technologies by addressing issues related to poverty; and empower the analysis and assessment of sustainable development in the GMS. The seminar delegate from the Department of Science and Technology, Ministry of Science and Technology of Lao PDR expressed that the seminar was very informative and useful for the development in his own country, and beneficial to the region as well. From the seminar, he realized the gaps between Lao PDR and other countries in the region in terms of the technology and innovation policies. Then he requested for the assistance in enhancing the capacity on technology and innovation policy development. Based on the discussion with him, MI considered this topic as a region-wide issue. P. R. China and Thailand are placed at more advanced position compared with other countries, and Vietnam is now trying to catch up, while Cambodia, Lao PDR and Myanmar need more assistance. Technology and innovation are a “must” for the sustainable development, and the policies are the foundation and motivation for driving technology and innovation. Without the appropriate policies, the technology and innovation would not be developed sustainably.

MI therefore organized a Consultation Workshop on Technology and Innovation Policy Development in the Lancang-Mekong Region at its premises in Khon Kaen, Thailand on November 18-20, 2019 with the financial support provided also by the Government of the P. R. China. It aimed to identify the challenges of technology and innovation policy development in each of the Lancang-Mekong countries; and on the basis of the findings of the consultation workshop, develop a capacity development program to respond to the challenges and needs identified.



EXECUTIVE SUMMARY

The workshop provided a good opportunity for the around forty participants to mingle, interact and discuss technology and innovation policy as well as implementation challenges facing the six countries in the Lancang-Mekong Region. The key takeaways from this exercise are as follows:

- The workshop achieved the twin objectives that were described at the outset; namely identifying the challenges of technology and innovation policy development in each of the Lancang-Mekong countries and developing a capacity development program to respond to the challenges and needs identified;
- The participants by and large expressed their satisfaction at finding the discussions and exchange of information and experiences shared during the workshop sessions to be quite valuable;
- The workshop also provided an opportunity for some of the countries to have bilateral discussions on the side to explore some of the areas for further collaboration on STI-related issues among themselves;
- The exercise had also enabled the formation of a network of practitioners and policy makers on technology and innovation from the Lancang-Mekong countries for cooperation in the foreseeable future;
- The workshop further cemented the role of MI as a convener and catalyst of capacity development activities in the region.



ACRONYMS

ASEAN	Association of Southeast Asian Nations
BRI	The Belt and Road Initiative
GMS	Greater Mekong Subregion
ICT	Information and Communications Technology
IOT	Internet of Things
4IR	Fourth Industrial Revolution
LMR	Lancang-Mekong Region
MI	Mekong Institute
M&E	Monitoring and Evaluation
NECTEC	National Electronic and Computer Technology Centre
NIA	National Innovation Agency
NSTDA	National Science and Technology Development Agency
OECD	Organization for Economic Co-operation and Development
P. R. China	People's Republic of China
RCEP	Regional Comprehensive Economic Partnership
R&D	Research & Development
SDGs	Sustainable Development Goals
SME	Small and Medium-sized Enterprises
S&T	Science and Technology
STI	Science, Technology and Innovation
UN	United Nations
UNESAP	United Nations Economic and Social Commission for Asia and the Pacific
US	United States
WIPO	World Intellectual Property Organization

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DAY 1: NOVEMBER 18, 2019

Opening

The workshop began with delivery of the Welcome Remarks by Dr. Watcharas Leelawath, Executive Director of MI and the Opening Remarks by Mr. Li Hong, Permanent Representative of the P. R. China to UNESCAP and MI Steering Committee Member.



Welcome Remarks

Dr. Watcharas Leelawath

Executive Director, Mekong Institute

Dr. Leelawath, commended government officials and other participants for their commitment in leveraging technology and innovation to foster a more economically integrated and competitive Lancang-Mekong region. “Policy makers are essential to create a conducive environment to advance technology and innovation. Your commitment will strengthen knowledge-based economies. Thus, helping to reduce poverty,” he said at his welcome remarks.



Opening Remarks

Mr. Li Hong

Permanent Representative of the P. R. China to UNESCAP and MI Steering Committee Member

“Technology and innovation are pillars of economic development because they help increase efficiency, encourage new businesses and advance communications.” This was the statement of Mr. Li during his opening remarks.

Setting the Context and Introduction of Participants

Ms. Tina Wang

Program Coordinator, Innovation and Technological Connectivity Department, Mekong Institute

Ms. Wang provided an overview of the consultation workshop background, objectives, the detailed program and agenda of the workshop (see Annex 1) and the participants (see Annex 2) as well.

This consultation workshop had the following objectives:



DAY 1: NOVEMBER 18, 2019

- To identify the challenges of technology and innovation policy development in each of the Lancang-Mekong countries; and
- On the basis of the findings of the consultation workshop, develop a capacity development program to respond to the challenges and needs identified.

The remainder of the first day of the workshop was devoted to country presentations made by representatives of the six countries present and followed by individual country group breakout sessions whereby each of the country delegation identified their respective challenges and opportunities/issues pertaining to technology and innovation policy development.

Country Presentations

A representative of each country gave a presentation on their country's situation regarding technology and innovation policy development.



For **Cambodia**, while there are already some pieces of legislation pertaining to STI in place, some other key legal frameworks have yet to be established such as a national standard for certification and accreditation of technology as well as some key technology roadmaps, all of which are slated for the coming years. The country still faces many hurdles in its STI development ranging from lack of public awareness and support for R&D resulting in shortage of resources – financial, human, infrastructure, etc.



P. R. China has a fairly well-established and advanced STI ecosystem and policy support for advancing its technological and innovation programs. Since the 1990s the country has invested in S&T with a growth rate of nearly 20% every year and reaching 1.76 trillion yuan in 2017. It has put in place preferential policies that would be conducive for high-tech entrepreneurs to embark on their projects with tax breaks and qualification certification.



Lao PDR already has several laws related to STI but still lacks an overall legal instrument to advance its agenda. However, it faces various bottlenecks in its implementation and thus holding back progress and advancement in its STI initiatives. These include fragmentation and lack of coordination mechanism resulting in weak linkages among the concerned key players, shortage of human and capital resources, lack of data on STI, etc.



Myanmar also possesses laws concerned with S&T and STI but like Cambodia and Lao PDR, suffer from lack of needed support and resources for R&D, poor coordination and linkages among key stakeholders as well as lack of a strategic roadmap and master plan for STI. However, UNESCAP is providing assistance to develop its National Science, Technology and Innovation Policy which should be available next year and the STI Byelaw is expected to be adopted soon.

DAY 1: NOVEMBER 18, 2019



Thailand has just undergone a major restructuring of its STI related institutions by merging the STI agencies with the higher education institutions or universities. The National Innovation Agency (NIA) has experienced a paradigm shift in its operations and has been designated as the demand and supply side System Integrator for STI related issues. Together with the National Science and Technology Development Agency (NSTDA) of which the National Electronics and Computer Technology Center (NECTEC) is one of the key agencies, they constitute the spearhead for STI development in the country, in conjunction with other relevant government ministries.



While **Vietnam** has in place the needed policies and legal instruments on STI implementation, its capabilities according to a recent OECD review, is still weak and its innovation system remains in a nascent and fragmented state. But with the emergence of startups, its STI ecosystem is now evolving and responding to the change that is occurring. Some of the problems facing the other countries in the Lancang-Mekong region also exists in Vietnam and poses a challenge to the development of its STI.

Individual Country Group Presentations

A representative from each of the individual country group gave a presentation of its challenges and opportunities/actions as follows.

Cambodia picked out the challenges identified in their country presentation earlier and then indicated the types of actions to address those challenges. Likewise, Lao PDR did the same with their presentations while Myanmar indicated their problems as well as opportunities. P. R. China basically presented some of their major STI achievements over the years while Vietnam depicted its challenges in its national innovation system as a supply-demand equation that needs to be balanced. Thailand on the other hand presented its challenges as well as solutions and coupled it with a Capacity Building activity linking to identified expectations.



DAY 2: NOVEMBER 19, 2019

The second day started off with a mix-country group arrangement of three groups with representatives from all countries represented in each group. They were requested to identify their respective challenges as well as solutions to the problem facing the issue of technology and innovation policy development. These three presentations are found in Annex 4 and were guided based on a handout prepared by the facilitator, Mr. Apichai Sunchindah, which appears as Annex 5.

Mix-Country Group Presentations

The participants were then assembled into three groups with all Lancang-Mekong countries represented in each group. They then discussed what would be their collective problems to tackle in the STI sector in the Mekong context and come up with some solutions.

The first group used the approach by Thailand in the previous individual country group round by identifying three challenges along with the solutions and collaborative mechanism as well as some suggestions. Group 2 presented the steps involved in developing a STI for Smart Farm Framework and leading to a Capacity Building Program to address the stated objective. The third group identified some of the common problems experienced in STI policy design and proposed a special training program STI policy officers covering some of the key areas.

The afternoon of the second day was devoted to each country group identifying what would be an appropriate capacity building program from their own country's perspective to address the needs and challenges pertaining to technology and innovation policy development identified in the previous day and a half and these are presented in Annex 6. They were guided beforehand by a presentation made by Ms. Tina Wang, Program Coordinator of the Innovation and Technological Connectivity Department of MI, which appears as Annex 7.



Capacity Building Program Development

In the final working session, the participants were grouped by their individual countries and were asked to develop a capacity building program based on what has transpired in the previous sessions.

Cambodia essentially submitted what they have prepared in their earlier session. P.R. China presented the Yunnan Innovation Fund and the Capacity Development cooperation on smart travel application between P.R. China and Myanmar. Lao PDR presented a capacity building program geared towards developing a high-tech law and master plan/roadmap on Technology and Innovation in the country. Myanmar proposed a capacity development program to address STI policy, technology transfer and monitoring and evaluation and focusing on specific sectors like ICT, agriculture/food and energy, resources and environment and along with the proposed participants. Thailand presented a STI Policy for Digital Transformation focusing on Agriculture for a four-day training and field excursion program and identified target participants. Vietnam proposed a big data platform, information and management capacity development program and with application to specific sectors.



DAY 3: NOVEMBER 20, 2019

The morning of the third day was for the participants to share some of their final reflections and observations of the entire workshop followed by closing remarks delivered by Mr. Sudam Pawar, Director of the Innovation and Technological Connectivity Department of MI. Each of the participants were also requested to complete an evaluation form for the workshop before their departure.

Closing Remarks

Mr. Sudam Pawar

Director, Innovation and Technological
Connectivity Department, Mekong Institute



Mr. Pawar, on behalf of Executive Director of MI, delivered the closing remarks. He recalled the background of having this consultation workshop, and emphasized the role of MI in technology and innovation development. From sharing insights to actual application, MI remains committed to enhancing capacities for regional development and integration, and looked forward to working with all the participants in the future.

KEY TAKEAWAYS FROM THE WORKSHOP

The two-and-a-half-day workshop provided a good opportunity for the around 40 participants to mingle, interact and discuss technology and innovation policy as well as implementation challenges facing the six countries in the Lancang-Mekong Region. The key takeaways from this exercise are as follows:

- The workshop achieved the twin objectives that were described at the outset; namely identifying the challenges of technology and innovation policy development in each of the Lancang-Mekong countries and developing a capacity development program to respond to the challenges and needs identified;
- The participants by and large expressed their satisfaction at finding the discussions and exchange of information and experiences shared during the workshop sessions to be quite valuable;
- The workshop also provided an opportunity for some of the countries to have bilateral discussions on the side to explore some of the areas for further collaboration on STI-related issues among themselves;
- The exercise had also enabled the formation of a network of practitioners and policy makers on technology and innovation from the Lancang-Mekong countries for cooperation in the foreseeable future;
- The workshop further cemented the role of MI as a convener and catalyst of capacity development activities in the region.

ANNEXES

ANNEX 1: PROGRAM SCHEDULE

DAY 1: Monday, November 18, 2019

Time	Event
08:30 – 09:00	Registration
09:00 – 09:10	Welcome Remarks <i>Dr. Watcharas Leelawath</i> , Executive Director, Mekong Institute
09:10 – 09:20	Opening Remarks <i>Mr. Li Hong</i> , Permanent Representative of P.R. China to UNESCAP and Mekong Institute Steering Committee Member
09:20 – 09:30	Setting the Context and Introduction of Participants <ul style="list-style-type: none">• Workshop Objectives• Workshop Agenda• Introduction of Participants <i>Ms. Tina Wang</i> , Program Coordinator, Innovation and Technological Connectivity Department, Mekong Institute
09:30 – 09:45	Group Photo, Coffee Break and Networking
09:45 – 11:45	Country Presentations on the Current Technology and Innovation Policies (Addressing specifically the issues, challenges and actions) (20 min. /country) Facilitator: <i>Mr. Apichai Sunchindah</i>
11:45 – 13:00	Lunch Location: GMS Hall , 1 st Floor, MI Annex
13:00 – 14:00	Open Discussion/Q&A Facilitator: <i>Mr. Apichai Sunchindah</i>
14:00 – 15:00	Parallel Group Discussions (Individual Country Group) Facilitator: <i>Mr. Apichai Sunchindah</i>
15:00 – 15:30	Coffee Break
15:30 – 17:00	Parallel Group Presentations (Individual Country Group) Facilitator: <i>Mr. Apichai Sunchindah</i>
18:00 – 20:00	Welcome Dinner (Smart Causal) Location: Smile Restaurant

DAY 2: Tuesday, November 19, 2019

Time	Event
09:00 – 10:00	Parallel Group Discussions (Mix Country Group) (Realistically address the expected disparities and differences among the countries on the policies concerned with innovation and technology and how to address those gaps or the challenges and collective actions required) Facilitator: Mr. Apichai Sunchindah
10:00 – 10:15	Coffee Break
10:15 – 11:45	Parallel Group Presentations (Mix Country Group) Facilitator: Mr. Apichai Sunchindah
11:45 – 13:00	Lunch
13:00 – 14:00	Summary and Reflection on the Current Technology and Innovation Policy Development Facilitator: Mr. Apichai Sunchindah
14:00 – 14:15	Introduction of the Project Design by Mekong Institute Ms. Tina Wang
14:15 – 15:30	Parallel Group Discussions: Inputs for Capacity Development Program (Country Group) Facilitator: Mr. Apichai Sunchindah
15:30 – 16:00	Coffee Break
16:00 – 17:00	Parallel Group Presentation Preparation on Inputs for Capacity Development Program (Country Group) Facilitator: Mr. Apichai Sunchindah

DAY 3: Wednesday, November 20, 2019

Time	Event
09:00 – 10:00	Group Presentations Facilitator: Mr. Apichai Sunchindah
10:00 – 10:30	Coffee Break
10:30 – 11:30	Summary and Reflection on the Inputs for the Capacity Development Program

	Facilitator: Mr. Apichai Sunchindah
11:30 - 12:00	Way Forward and Closing Remarks <i>Mr. Sudam Pauer</i> , Director of Innovation and Technological Connectivity Department, Mekong Institute
12:00 - 13:00	Farewell Lunch
PM	Free Time

ANNEX 2: DIRECTORY

	Title	Name	Position and Organization	Country	E-mail
Honorable Guests					
1.	Mr.	Li Hong	Permanent Representative of China to ESCAP and Mekong Institute Steering Committee Member	China	escap@mfa.gov.cn
2.	Dr.	Watcharas Leelawath	Executive Director, Mekong Institute	Thailand	watcharas@mekonginstitute.org
3.	Mr.	Sudam Pawar	Director, Innovation and Technological Connectivity Department, Mekong Institute	India	sudam@mekonginstitute.org
Facilitator					
4.	Mr.	Apichai Sunchindah	Development Specialist	Thailand	apichai_sun@yahoo.com
Delegates					
Cambodia					
5.	Mr.	Has Bunton	Secretary General, General Secretariat of the National Science and Technology Council (GS-NSTC), Ministry of Planning (MOP)	Cambodia	hasbunton@hotmail.com
6.	Mr.	Viseth Ung	Deputy Secretary General, General Secretariat of the National Science and Technology Council (GS-NSTC), Ministry of Planning (MOP)	Cambodia	smviseth@gmail.com
7.	Mr.	Buoy Somethea	Director, Policy and Planning, Administration and Finance and ICT Department, General Secretariat of the National Science and Technology Council (GS-NSTC), Ministry of Planning (MOP)	Cambodia	bsomethea@gmail.com somethea_buoy@hotmail.com

	Title	Name	Position and Organization	Country	E-mail
8.	Mr.	Sok Phal	Director, Monitoring and Evaluation Department, General Secretariat of the National Science and Technology Council (GS-NSTC), Ministry of Planning (MOP)	Cambodia	monitoring.evaluation007@gmail.com
9.	Ms.	Kim Chanlundy	Deputy Director, Policy, Planning, Administration, Finance and ICT Department, General Secretariat of the National Science and Technology Council (GS-NSTC), Ministry of Planning (MOP)	Cambodia	aunlundy@gmail.com
China					
10.	Dr.	Ren Hua	Assistant Research Fellow, Institute of International Relations, Yunnan University	China	renrangzhi@126.com
11.	Ms.	Yang Xiangzhang	Research Fellow, Institute of Myanmar Studies, Yunnan University	China	xiangzhangyang@126.com
12.	Mr.	Zhang Yunsheng	Senior Geologist and Technical Advisor, Mineral Exploration Department, Yunnan Gold & Mineral Group Co., Ltd.	China	1820604718@qq.com
Lao PDR					
13.	Mr.	Soumana Choulamany	Director General, Department of Technology and Innovation, Ministry of Science and Technology	Lao PDR	schoulamany@yahoo.com
14.	Mr.	Khamla Phengmavong	Head, Legislation Division, Department of Inspection, Ministry of Science and Technology	Lao PDR	la.pmv02@gmail.com
15.	Mr.	Thanva Sisoularth	Head, Policy and Strategy Division, Department of Technology and Innovation, Ministry of Science and Technology	Lao PDR	sslthanva@gmail.com

	Title	Name	Position and Organization	Country	E-mail
16.	Mr.	Phongsavanh Khattiyavong	Technician, Policy and Strategy Division Department of Technology and Innovation, Ministry of Science and Technology	Lao PDR	korkor8690@yahoo.com
17.	Ms.	Teangorn Hompouvong	Director, Department of Planning and Cooperation, Ministry of Science and Technology	Lao PDR	hteangorn@gmail.com
Myanmar					
18.	Dr.	Ei Khin	Director, E-Government and ICT Coordination, Department of Technology Promotion and Coordination, Ministry of Education	Myanmar	eieikhin@moe.edu.mm
19.	Dr.	Nay Chi Win	Director, Polymer Research Department, Department of Research and Innovation, Ministry of Education	Myanmar	ncw123@gmail.com
20.	Dr.	Nan Sandar Lwin	Director, Renewable Energy Research Department, Department of Research & Innovation, Ministry of Education	Myanmar	sandar.lwin75@gmail.com
21.	Dr.	Myat Chaw Su	Deputy Director, Pharmaceutical Research Department, Chemical Technology Research Centre, Department of Research & Innovation, Ministry of Education	Myanmar	chawsu.myat@gmail.com
22.	Ms.	Htay Aung	Researcher, Renewable Energy Research Department, Department of Research & Innovation, Ministry of Education	Myanmar	htayhtay1977aung@gmail.com
Thailand					
23.	Ms.	Anittha Jutarosaga	Researcher, Science, Technology and Innovation Policy Institute (STIPI),	Thailand	anittha.jut@mail.kmutt.ac.th

	Title	Name	Position and Organization	Country	E-mail
			King Mongkut's University of Technology Thonburi (KMUTT)		
24.	Dr.	Pongsakorn Kanjanatanin	Innovation Strategist, Innovation Strategy Department, National Innovational Agency (NIA)	Thailand	pongsakorn.k@nia.or.th
25.	Dr.	Pornprom Ateetanan	Deputy Director, Strategic Planning and Partner Development Division, National Electronics and Computer Technology Center (NECTEC), Ministry of Science and Technology of Thailand	Thailand	Pornprom.Ateetanan@nectec.or.th
26.	Dr.	La-or Kovavisaruch	Senior Researcher, Location and Automatic Identification Systems Research Team (LAI), Communication and Networks Research Group (CNWRG), National Electronics and Computer Technology Center (NECTEC), Ministry of Science and Technology of Thailand	Thailand	la-or.kovavisaruch@nectec.or.th
27.	Ms.	Siri-on Umarin	International Relations Officer, International Affairs Division, National Electronics and Computer Technology Center (NECTEC), Ministry of Science and Technology of Thailand	Thailand	siri-on.umarin@nectec.or.th
28.	Mr.	Din Suphawat	Team Leader, Digital Economy Promotion Agency (DEPA), Northeastern Branch	Thailand	Din.wa@depa.or.th
Vietnam					
29.	Mr.	Bach Tan Sinh	Director, Division of Scientific Journal and Publication, Department of Science Administration and Training, Vietnam Institute of Science,	Vietnam	btsinh@most.gov.vn sinhbt@gmail.com

	Title	Name	Position and Organization	Country	E-mail
			Technology and Innovation (VISTI), Ministry of Science and Technology		
30.	Mr.	Hoang Van Thu	Deputy Chief, Administration Office, National Institute for Science and Technology Policy and Strategy Studies, Vietnam Institute of Science, Technology and Innovation (VISTI), Ministry of Science and Technology	Vietnam	hvthu@most.gov.vn
31.	Ms.	Nguyen Thi Phuong Dung	Official, Department of Legislation, Ministry of Science and Technology	Vietnam	ntpdung@most.gov.vn
32.	Mr.	Nguyen Huu Khanh	Researcher, Department of Macroeconomics and Strategic Studies, Vietnam Institute for Development Strategies, Ministry of Planning and Investment	Vietnam	khanhnh.vids@mpi.gov.vn
33.	Ms.	Vu Phi Tuyen	Researcher, Department of ICT Economy and Market Research, National Institute of Information and Communication, Ministry of Information and Communication	Vietnam	tuyenvuphi@gmail.com
Mekong Institute					
34.	Ms.	Tina Wang	Program Coordinator, Innovation and Technological Connectivity Department, Mekong Institute	China	jwang@mekonginstitute.org
35.	Ms.	Yupaporn Siribut	Program Officer, Innovation and Technological Connectivity Department, Mekong Institute	Thailand	yupaporn@mekonginstitute.org
36.	Mr.	Anan Ussanawarong	Program Assistant, Innovation and Technological Connectivity Department, Mekong Institute	Thailand	anan@mekonginstitute.org

ANNEX 3: OPENING REMARKS

Opening Remarks at the Consultation Workshop on Technology and Innovation Policy Development By Mr. Li Hong

2019.11.18 Mekong Institute, Khon Kaen

Dear Dr. Watcharas Leelawath,
Dear Colleagues and friends, Good Morning!

It is always a pleasure to join the events of Mekong Institute (MI). I feel great honor to be invited to speak at the opening ceremony at this Consultation Workshop on Technology and innovation for Lancang-Mekong Sub-region.

Nowadays, emerging technologies has been developing rapidly around the world. Its impact is tremendous both to economy and to our daily life. The manufacturing industry has adopted more and more AI technologies to optimize production lines. Customized production according to the specific needs and purpose are increasingly applied, which might change the traditional large-scale manufacturing industry substantially. The big data and its analytic application are changing our way of receiving information about the world, changing the way for election, and also changing our value for life. E-commerce has changed our way of shopping deeply, especially in China. The development of digital economy will transform the traditional approach for tariff, trans-boundary control and significantly reduce the cost of raw material consumption. Telecommunication technology has shortened the distance of the world and change the way for communication. We could have a private dialogue or interview with our family members, working colleagues and business partners where ever we are. 5G technology which is just to be uncovered will be more promising for change.

While science, technology and innovation are experiencing rapid development and break through, the international politics and international relations are also in the period of deep change we ever seen in decades. The world No. 1 superpower, the United States (US), is having an unprecedented president, Mr. Donald Trump, who is holding a banner of "America first". Such policy might be existed in practice for all his predecessors but would have never been in their mouth publicly. President Trump refused to recognize and abide by the agreements signed by his predecessors. He is not hesitating at all for confronting with the rest of the world on climate change. He taunted the role of United Nations (UN) in the presence of leaders from the world in General Assembly and kept withdrawn from different UN bodies which he thought is not serving the interests of US.

Under the leadership of president Trump, the alliance which have been governing the world order in the last 70 years since the end of World War II is under serious challenge: the key players' view on global issues are deviating from each other, which profoundly affects the solidarity of the western alliance system. For the first time the US is quarreling hard with almost all its allies on military cost sharing scheme. The UN is almost near to close its door due to financial crisis cause by refusal or delayed pay on membership fee. More seriously, the populism is playing dominant role in

national and foreign policy not only in one or two major powers but frequently seen in many of the western countries. In the economic and financial fields, the Washington Consensus which has been regarded as a standard model for the world, is now under serious skepticism all over the world including inside the western countries.

In the meantime, collective rising of the developing world and emerging economies are calling for the global power structural transformation. Under the crises in the western countries and the greater deficit of global governance and trust, the world is facing severe challenges from rising populism, protectionism and unilateralism. The world economy is facing with growing uncertainties and destabilizing factors. The great powers are tending to compete each other geographically and strategically instead of cooperation and partnership.

Dear friends,

In our sub-region, our six countries are close neighbors enjoying a deep bond of cultural and people-to-people affinity. These natural connections have been reinforced by our sharing of the Lancang-Mekong River. Against the background of global uncertainty and anti-globalization, it is fortunate that our sub-region is in the historic period of peace and political stability among all the sub-regional countries. All six countries have placed high priority on economic development and social inclusion. Common understanding on economic integration and joint efforts on infrastructure connectivity and trade facilitation are ever increasing. Recent ASEAN Summit successfully convened in Bangkok has strengthened such cooperative momentum. The ending of the key issues' negotiation and the announcement of the declaration on RCEP is a great victory for free trade and economic integration over protectionism and unilateralism. We should keep the momentum of the ASEAN economic community and synergize the development strategy of various cooperation mechanisms in the GMS sub-region for complementarity and joint force.

In my view, special attention should be paid on following challenges in our sub-region:

The first one is poverty reduction. Poverty is the root causes for many problems in relation to stability, security and social cohesion. Eliminating poverty has been set as the first goal of UN 2030 Agenda for Sustainable development. The issue is not only relevant but also eminent in our sub-region.

The second challenge is sustainability in terms of environment and natural resources. Fast development always brought about the problem of environment deterioration and over exploitation on natural resources. We should draw lessons in this regard and avoid taking the path of paying price when it is too late to rectify the damage to the nature.

The third challenge is climate change. Climate change brings frequent disasters. The water resources over Mekong get special significance to our six countries over such backdrop. Whenever there is a flooding or drought in the sub-region, there might be finger pointing on media for accusing the upstream countries of mishandling water resources. There might be problem in mismanagement of water installation over the river, but it is clear that the core challenge comes from the more and more frequent extreme weather which is ensued from global climate change.

The fourth issue is about the development financing. Financing is the premise for tackling any of the economic, environment and social issues. How to find the sustainable financing is crucial to keep the ball going for development.

There might be more challenges, I just list a few here. Addressing them needs economic growth, needs create more decent jobs and needs sufficient investment on short term and long-term development goals. Most importantly nowadays, addressing any of the above-challenge needs new technology application or innovative approach and thinking. Science, Technology and Innovation (STI) can bring changes to our traditional production and living. STI can reduce the consumption on natural resources and relief the pressure on environment. STI can stimulate new economy and new point of growth. It is important to mention that STI is not just science and technology break through. It also includes the innovation on economic modality and on institutional establishments. Even financing needs innovation. Promoting over all innovation and tapping the potential of all level of the society for innovation are indispensable for sustainable development.

With a joint desire to achieve development and prosperity, we must seize the opportunities that come our way and take concrete action to lay new ground in the development and cooperation. STI could and should be an important part in the GMS sub-regional cooperation. New growth drivers such as digital trade, e-commerce, renewable energy, geo-information application, big data etc. are all promising areas for cooperation. Experience exchange and knowledge sharing on science park, industry zone, SME supporting measures and vocational education etc. might be important components of STI cooperation for our six countries. We must work closely first to find out the priority areas of STI cooperation and explore the means and venue for joint advancing in STI among ourselves. In this regard, our workshop is on timely and responds to the demands.

Dear friends,

This year marks the 70th anniversary of the founding of the People's Republic of China. The founding of new P. R. China opened up a new era in the history of P. R. China. In the past 70 years, P. R. China has integrated itself into the global community, made its contribution to the world and at the same time develop itself.

Within 70 years, P. R. China has grown up to the second largest economy in the world. P. R. China has brought about more than 800 million people out of poverty. While attaching great importance to economic growth, P. R. China also paid more and more attention to the environment sustainability and social inclusion.

One of the important factors for P. R. China's success is sustained investment on STI. According to WIPO report, P. R. China is ranked No.14 over Global Innovation Index 2019. P. R. China has the largest patent application for several years. In 2018, there were 1.54 million patent application in P. R. China, that's 46.4% of the world total. With regard to the R&D investment, P. R. China reached \$452 billion in 2017 and ranked No.2 in the world, only behind the US. In Shanghai, the R&D investment had reached 4% of its annual GDP. Innovation, coordination, green, open and sharing are essential component for P. R. China's development strategy no a day. STI are set to be the key

for the high-quality development. With regard to 5G technology as developed by Huawei, the famous high-tech company of P. R. China, we are leading the technology in the world.

P. R. China's advancement in STI is benefited from following measures: Firstly, the sustain and large R&D investment both by government and by enterprises. Secondly, the sustained investment on education, which laid the foundation for large number of scientists, engineers and technicians. Thirdly, the open policy. Open brought in new technology and innovative management, it also brought new idea and thinking which is more important. Fourthly, P. R. China's huge market demands is the catalyzer for technology application and break through. For example, the E-commerce giant Alibaba invested on database technology development to meet the special huge clients on the Sales Day in P. R. China, 11 November every year. The simultaneous transaction requirements on the Sales Day is so high that none of the world database system could meet its demand. With its strong financial strength and rich technology application experiences, Alibaba developed its own property database Ocean Base in very short time, of which the simultaneous transaction capability ranked No.1 in the world now.

Dear colleagues,

P. R. China's development should first attribute to the hard work of Chinese people. We also appreciate the support from all over the world. But it is necessary to point out, Chinese development is not a granted by any of the developed countries, let alone the brazen slander by some US politicians as of stolen. US isolated P. R. China in the area of aerospace technology cooperation for decades. But P. R. China is still moving ahead with steady steps in the out-space exploration. With regard to 5G communication technology, I am afraid that the US so far does not have the core technology at all, say nothing of being stolen. P. R. China respect intellectual property protection and established its own legal system for that. As time goes, P. R. China will have more and more leading technology. US won't count on monopolizing everything and should not take it for granted for their leading. They will have to face the reality of a changing world.

Today, P. R. China has become the leading engine of global development and an anchor of stability for world peace. P. R. China is now pursuing a new round of opening up with higher standard. We will strike for the common prosperity and shared destiny for human kind. GMS cooperation is a test case for that big and long vision. We will base on sincerity, openness and mutual learning and win-win solution to promote the GMS sub-regional cooperation on STI.

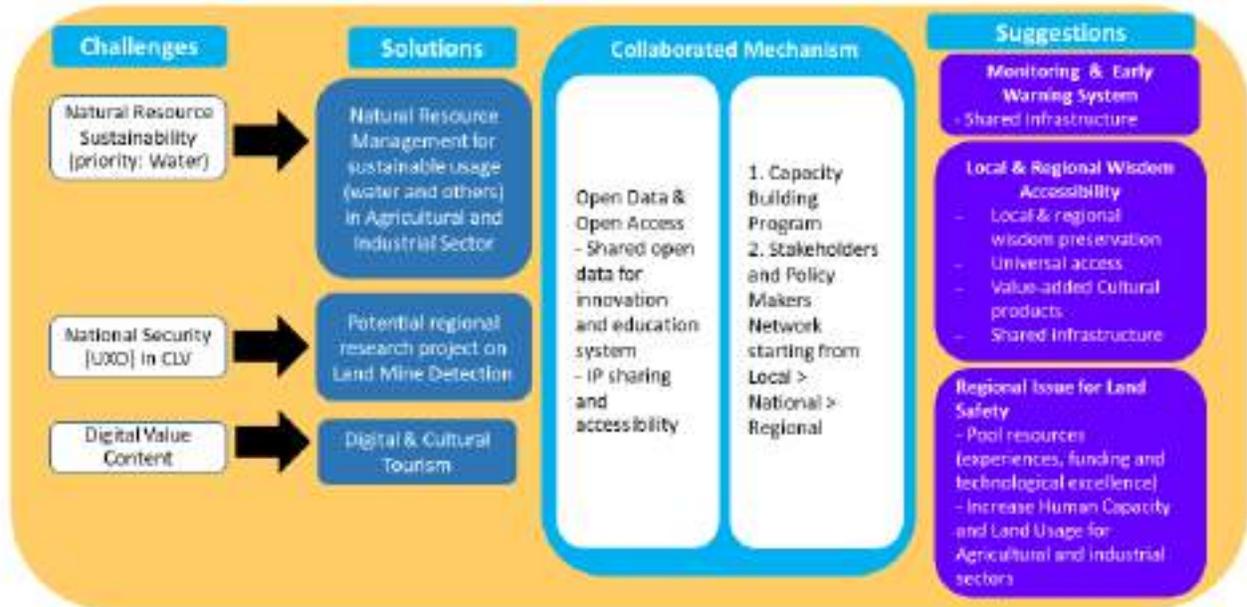
While P. R. China has been applying a policy of encouraging mass entrepreneurship and innovation domestically, we would like to share our lessons and as well as the experience with our neighbor countries in the GMS. We would be pleased to extend the mass innovation process to the GMS countries through the bridge and incubation like Mekong Institute. To this extent, I am happy to see this consultation workshop on Technology and Innovation Policy Development is started. I thank the team of MI and the program coordinator Miss Tina especially for your hard work for making this workshop happen. I wish the consultation a fruitful outcome and a great success.

Thank you all for your attention.

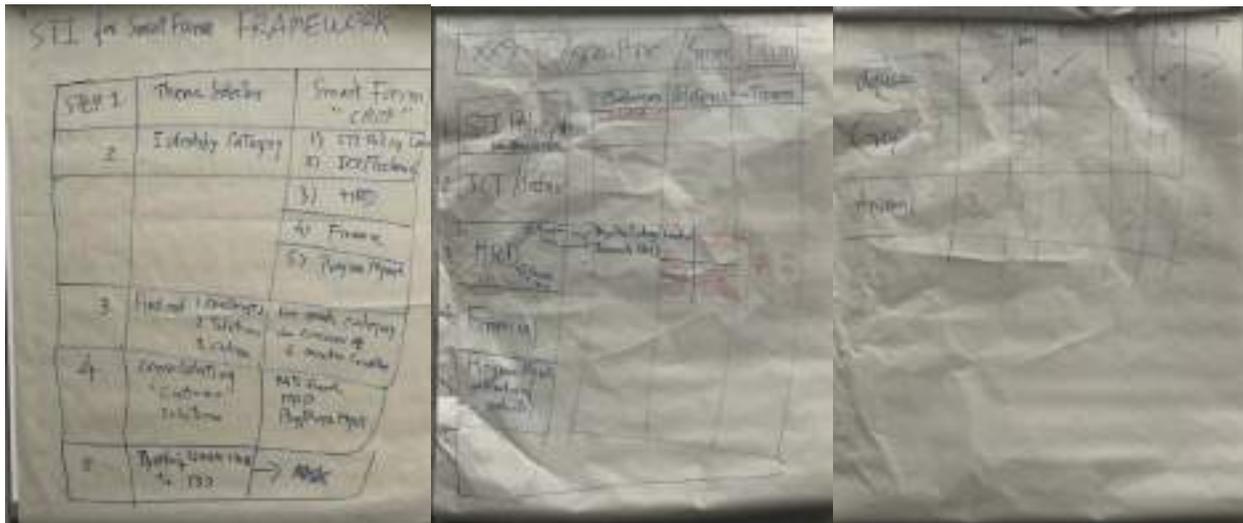
ANNEX 4: MIX-COUNTRY GROUP PRESENTATIONS

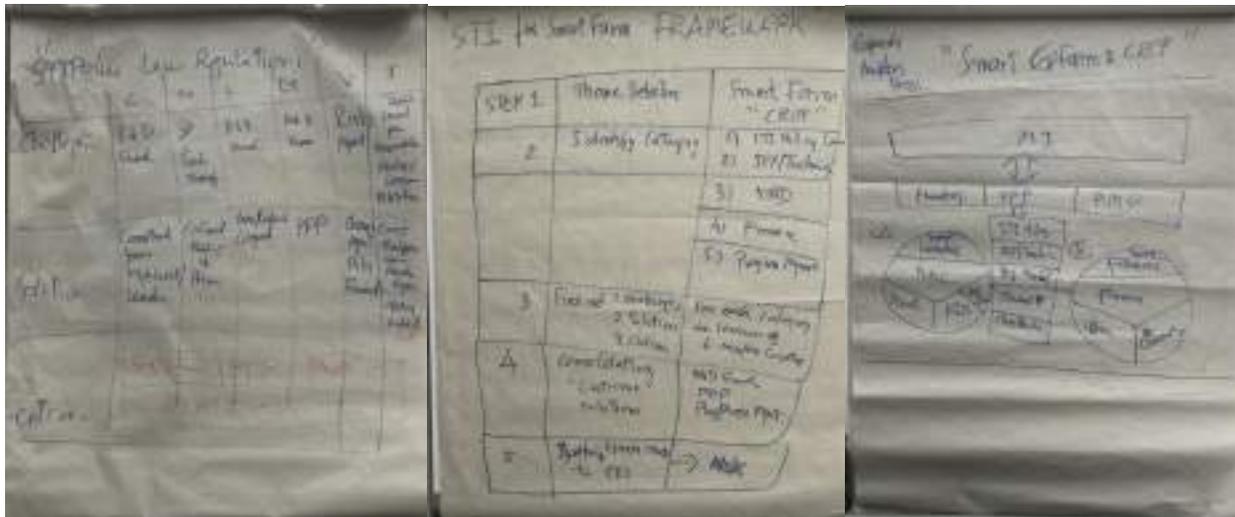
Group 1:

Parallel Group Discussion (Mix Country) 1



Group 2:





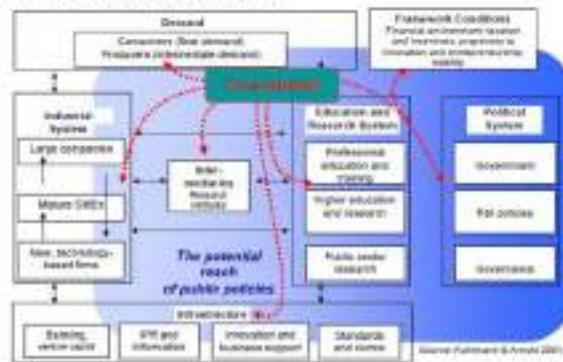
Group 3:

Common Problems among us

- STI policies/law/plans/ecosystem just emerging but still weak and fragmented including poor coordination and M&E mechanism.
- The office responsible for tasks (i.e. setting the strategies, proposing laws, allocating budget and M&E) are in the early stage.
- Multidisciplinary knowledge (IP, Economics, Technology, Finance). It is very difficult to recruit personnel that has right knowledge and capabilities to do the job.

Challenges

- Shortage of trained or skilled personnel to oversee the ecosystem.



Propose

- Special Training for Senior/Junior STI Policy Officers (OJT)
 - IP and Laws,
 - Technology Transfer,
 - Financing
 - M&E and
 - Fiscal policies.
- Expert/ Consultation
- Scholarship

ANNEX 5: OBSERVATIONS AND REFLECTIONS FROM DAY 1

1. LMR/GMS Context

- a. Mostly agricultural and rural settings and occupations
- b. Fairly rich and dependent on natural resources and environmental assets and with tourism potential but also facing increasing risk if not managed in an appropriate and timely way
- c. Sizable population: 60-70 million within Mekong River basin and 250-300 million in LMR/GMS
- d. Relatively significant young age group of people providing potential demographic dividend
- e. Increasing accessibility and utilization of ICT/IOT though full potential yet to be realized.
- f. Strategic crossroads location – BRI, Indo-Pacific, sandwiched between India and P. R. China

2. Challenges

- a. Poor infrastructure including connectivity – soft and hard
- b. Lack of or access to funds
- c. Shortage of trained or skilled personnel
- d. Insufficient database/information on STI
- e. STI policies/law/plans/ecosystems just emerging but still weak and fragmented including poor coordination and M&E mechanisms
- f. Lack of adequate IPR regulatory environment
- g. Poor incentives and understanding given to private sector on STI issues

3. Opportunities

- a. Regional peer learning experience, exchange of information, best practices and lessons learned – both failures and successes
- b. Five of the six Mekong countries are also ASEAN member states which are developing common strategies, approaches and platforms on STI/4IR and P. R. China is a Dialogue Partner working with ASEAN on these issues
- c. STIs for SDGs – leave no one behind with priority on poverty alleviation

4. Suggested Possible Ways Forward in Addressing the Issues

- a. Analyze what are common issues pertaining to STI facing all six countries as well as identifying problems unique to each particular country that also needs to be addressed
- b. Start by focus on tackling clearly defined specific areas such as Smart Agriculture/Farming, Smart Cities, Smart Tourism, or Sustainable Consumption and Production/Circular Economy
- c. Explore educational and capacity building support programs from governments and donor agencies

ANNEX 6: PRESENTATIONS ON CAPACITY BUILDING PROGRAM

Cambodia:

Potential collaboration:	Collaboration port:
<ul style="list-style-type: none"> Capacity building <ul style="list-style-type: none"> Scholarship for graduate and post-graduate for science and technology policy and management Training Workshop, seminar,... Hi-tech Start-up business/industries (tax holiday) Transfer technology, business/industries partners Catch-up technology Need assistant for <ul style="list-style-type: none"> National Technology Incubation Center (TBI) Technology Roadmap Plan STI basic framework law 	<ul style="list-style-type: none"> GS-NSTU Research Institute, Researcher University Business enterprises, partner NGOs

P. R. China:

<h3>China's Input in Innovation</h3> <p>A Case Study of Yunnan Innovation Fund</p>	<h3>BACKGROUND</h3> <ul style="list-style-type: none"> China's input in scientific and technological innovation includes the central and local levels. Yesterday, we introduced the identification of high-tech enterprises in China. Today, we take Yunnan Innovation Fund as an example to introduce the direct support of innovation activities of Chinese enterprises.
<h3>I. Project Support Condition</h3> <ul style="list-style-type: none"> 1. Enterprises in Yunnan Province must belong to one of the high-tech fields prescribed by the state <ul style="list-style-type: none"> Electronic information Biology and new medicine Aerospace New material High-tech service New energy and energy conservation Resources and environment Advanced manufacturing and automation 	<ul style="list-style-type: none"> 1. An enterprise must have one or more of the following intellectual property rights: patents, new varieties of animals and plants, circuit layout and software copyright. 2. The number of employees shall not exceed 300, of which the proportion of scientific and technological personnel to the total number of employees shall not be less than 10%. 3. The enterprise shall be mainly engaged in the research and development, production and service of high-tech products, and the person in charge of the enterprise shall have a strong sense of innovation, a higher ability of market development and a higher level of spirit and management. The annual expenditure for research and development of high-tech products shall not be less than 2% of the sales volume, and the scientific and technological personnel directly engaged in research and development shall account for more than 10% of the total number of employees.
<h3>II. Support ways of Yunnan Innovation Fund</h3> <ul style="list-style-type: none"> 1. There are three ways to support <ul style="list-style-type: none"> 1. Loan discount: Generally, subsidy will be given according to 50% - 100% of the actual interest of the loan. The total amount of discount interest will not exceed 700,000 yuan, and the maximum amount of individual major projects will not exceed 1.5 million yuan. 	<ul style="list-style-type: none"> 2. Subsidy: Mainly used for the necessary subsidies in the stage of product research and development and pilot test of technological innovation of small and medium-sized enterprises, as well as the subsidies for scientific research personnel to bring scientific and technological achievements to establish enterprises for the promotion of enterprises. Generally, the amount of subsidy shall not exceed 100,000 yuan, and the maximum amount of individual major projects shall not exceed 1.5 million yuan, and the enterprise shall have its own matching fund of more than the same amount.

III. The Quantity of Yunnan Innovation Fund

- Direct investment: for a few projects with high starting point, wide innovation orientation, high innovation level and follow-up innovation potential, which are expected to have greater market demand after being put into production, have significant economic benefits and expected to form new industries, and have an important impact on the growth of the industry or local economy. In our practice, capital investment shall be adopted. The amount of capital investment generally does not exceed 50% of the registered capital of the enterprise. In principle, it can be transferred according to law, or the investment can be recovered within the prescribed time limit by means of cooperative operation. Support that not exceed R3 million.

- About 200 enterprises every year.

Lao PDR:

Specific Needs on Technology and Innovation Policy Development in Laos to Input for Capacity Development Programme

Based on technology and innovation development plan from 2020 and beyond, to develop law on high technology and national master plan on TI.

1. MLC Exchange Session/workshop on high technology law and national master plan development.
2. National workshop on high technology law and national master plan development for regulatory bodies and business in Laos.
3. Training on high technology law and national master plan development process for relevant staff.
4. Foreign consultant for advising and development process.
5. Network for exchange information among MLC.



Myanmar:

Input for Capacity Development Program for Common Challenges

Name of Training	Proposed Participants
1. STI Policy	Senior & junior Officers from the STI office under the Ministry of Education.
2. Technology Transfer Office	Staffs from Ministry of Education, Ministry of Industry, Ministry of Agriculture, Livestock and Irrigation, Ministry of Natural Resources and Environmental Conservation.
3. Monitoring and Evaluation on Policy Development	Staffs from the Ministry of Education.

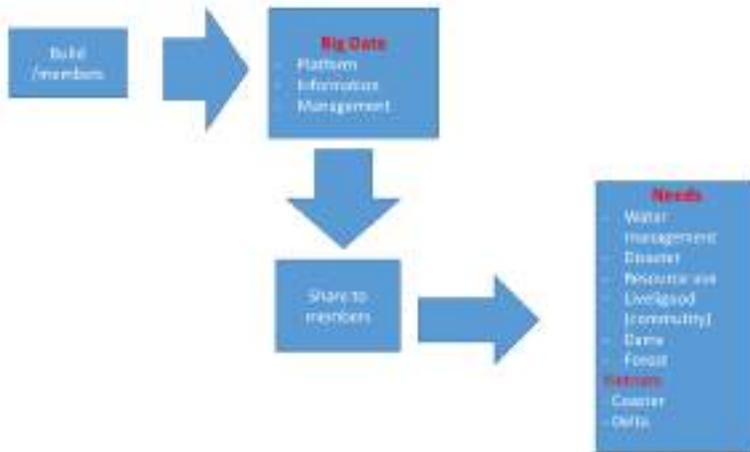
Input for Capacity Development Program for Specific Challenges

Name of Training	Proposed Participants
1. Agricultural Food	Ministry of Agriculture, Livestock and Irrigation, Officers from the STI office under the Ministry of Education, Ministry of Industry.
2. ICT	Staffs from different Ministries.
3. Energy Resources and Environment	Staffs from Ministry of Education, Ministry of Energy, Ministry of Natural Resources and Environmental Conservation.

Thailand:



Vietnam:



ANNEX 7: PRESENTATIONS ON THE PROJECT DESIGN BY MEKONG INSTITUTE



Capacity Building on Technology and Innovation Policy Development in the Lancang-Mekong Region

Contents

1	Objectives, Strategy, Approach	4	OWE
2	CW	5	OWE, Key Activities, Key Outputs
3	CDP	6	OWE, Key Activities, Key Outputs
		7	Project RAC

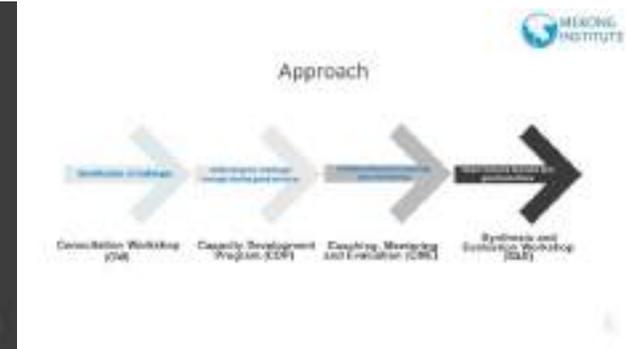


Objectives

- Objective 01**
To identify challenges of technology and innovation policy development in each Lancang-Mekong country.
- Objective 02**
To contribute to addressing the challenges through sharing good practices and solution-oriented learning and mentoring.
- Objective 03**
To strengthen the capacity of relevant key stakeholders in developing the technology and innovation policies.

Strategy

Departing from a traditional stand-alone training strategy, the program will be more strategically developed as a solution-oriented design.



Key Output

- Inputs of capacity development program will be collected.



CDP

Objectives

- To contribute in addressing the challenges through sharing good practices
- To strengthen the capacity of relevant institutions in developing the technology and innovation policies

9

Key Activities

Period	Type of activity	Participants	Responsible Persons
1. 4-day In-class training	Knowledge and skill enhancement	4 participants from each participating country	Expert HR staff
2. 1-day Structured Learning Walk (SLW)			

10

Key Outputs



- Capacity of participants were improved
- Action plans were developed

11



CME

Objectives

- To provide online coaching and mentoring for the participants to implement the action plans
- To monitor and evaluate the effectiveness of the capacity building program

12

Key Activities

Period	Type of activity	Participants	Responsible Persons
3 weeks	Online coaching and mentoring	24 participants	1. Expert 2. HR staff

13

Key Output



- Action plans were implemented



14



S&E

Objectives

- To share lessons learned and good practices
- To assess the capacity enhancement of trained participants
- To evaluate the effectiveness of the entire program
- To get the findings for further needs of each country for capacity development projects

15

Key Activities

Period	Type of activity	Participants	Responsible Persons
3 days	S&E workshop	24 participants	1. HR staff

16

Key Outputs



← Findings for further needs of each country for capacity development projects

17

Project Monitoring and Evaluation



Process Evaluation

- Activity-based evaluation
- Quarterly Online-based follow-up program

Outcome Evaluation

- Completion of action plans
- Synthetic evaluation meeting

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**MEKONG
INSTITUTE**

123 Mittraphap Rd., Muang District Khon Kaen 40002, Thailand
+ 66 (0) 43 202 411 to 2, +66 (0) 43 204 041 to 2, + 66 (0) 43 203-656

information@mekonginstitute.org

www.mekonginstitute.org

[f/mekonginstitute.org](https://www.facebook.com/mekonginstitute.org)

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