



# EVENT REPORT

# FORUM ON FINANCING SUSTAINABLE INFRASTRUCTURE

23 MARCH 2023

HYATT REGENCY KATHMANDU

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# BACKGROUND



Infrastructure plays a vital role in human development and well-being, and it is estimated that \$9.2 trillion in infrastructure spending will be needed globally each year until 2050. The Asia-Pacific region alone will need \$1.7 trillion annually for infrastructure until 2030 to support economic growth, reduce poverty, and mitigate the risks of climate change. The global demand for infrastructure development is increasing rapidly. It is driven by factors such as population growth, urbanization, and economic development. However, traditional forms of infrastructure financing are often inadequate, as they fail to account for the long-term social, environmental, and economic costs of unsustainable infrastructure.

Federation of Contractor's Association of Nepal (FCAN) is the umbrella organization of contractors operating throughout the country. It is represented by seventy-seven district associations and five province federations with a membership base of over twenty-two thousand four hundred organizations. Nepal is the

current chair of the international Federation of Asian and Western Pacific Contractor's Association (IFAWPCA) represented by eighteen member countries in the region. The upcoming 46th IFAWPCA Convention with the theme 'Partnering in Sustainable Infrastructure' will be held in Nepal from 21-25 November 2023. It is expected to attract over 1000 international and national delegates, including government officials, policymakers, academics, and industry experts. As a precursor to this event FCAN and IFAWPCA organized a forum entitled 'Financing Sustainable Infrastructure' on 23rd March at Hyatt Regency, Kathmandu. Similarly, IFAWPCA will organize a series of international forums in Magnolia, Philippines, and Kathmandu within the overarching theme of the 46th IFAWPCA Convention.



# OBJECTIVE



The primary goal of this forum was to foster a dialogue and knowledge-sharing platform for financing sustainable infrastructure development. The forum consists of two sessions.

Session 1: Public Private Partnership (PPP)/ Engineering Procurement Construction (EPC) Contracts: Formulation and Experience. The subtopics of session 1 were Public Private Partnership (PPP): Understanding PPP and Engineering Procurement Construction (EPC) Contracts: Formulation and Experience

Session 2: Enhancing Investment Through Accessing Climate Funds. The subtopics of session 2 were Protocols and Procedures in Assessing the Climate Change Fund and Emerging Opportunities to Optimize Investments Through Accessing the Climate Change Fund.

The forum was designed to accomplish the following objectives:

To increase understanding of the various financing options available for sustainable infrastructure development.

To share the best practices and experiences and identify opportunities for improving the effectiveness of financing options in delivering sustainable infrastructure projects.

To identify challenges and gaps in financing sustainable infrastructure and discuss innovative solutions to overcome them.

# THE OPENING SESSION



**RABI SINGH**  
FCAN President



**GHANA SHYAM GURUNG**  
WWF Country  
Representative

## 3.1 Overview

The opening session included introductory remarks and rules from Er. Birendra Raj Pandey, the Secretary General of IFAWPCA, a welcome address by Mr. Rabi Singh, the President of IFAWPCA and FCAN, remarks from Dr. Ghana Shyam Gurung, Country Representative of WWF Nepal, a brief message from Mr. Levy V. Espiritu, the Executive Director of IFAWPCA. The keynote speaker for the opening session was Dr. Bindu Nath Lohani, distinguished fellow of Emerging Market Forum, global head of climate change, Centennial group, and the former Vice President of Asian Development Bank. The opening session ended with an address from the Chief Guest, Honorable Deputy Prime Minister and Minister of Physical Infrastructure and Transport, Mr. Narayan Kaji Shrestha.





## **MR. LEVY V. ESPIRITU**

Executive Director of  
IFAWPCA

### **3.2 Summary**

Mr. Espiritu congratulates FCAN for holding a forum that aims to promote cooperation, collaboration, and better working relationships among its members in IFAWPCA towards a sustainable future through the exchange of knowledge on construction contracts, public-private partnerships, and climate change.





## **DR. BINDU NATH LOHANI**

Distinguished Fellow of Emerging Market Forum, Global Head of Climate Change, Centennial Group and the Former Vice President of Asian Development Bank, Keynote Speaker

Dr. Lohani emphasized on financing sustainable infrastructure development in Asia, with a focus on Nepal and other countries in the region. He begins by discussing the importance of infrastructure in economic development and how infrastructure investment is closely associated with GDP per capita. He then talks about the current infrastructure investment in Asia, which varies between 2% to 7% of GDP. Nepal has one of the lowest infrastructure investments in the region at around 2-3% of GDP. The infrastructure stock of Nepal is also one of the lowest in the region, with an infrastructure stock score of 17 out of 100. Dr. Lohani then discusses the financial needs for infrastructure development in Asia, which he estimates to be around \$26 trillion between 2016 and 2030. He also

emphasizes the need for climate-proofing infrastructure, which will require an additional \$3.4 billion. The financing gap between the investment needs and the current investments ranges from 2.4% to 5% of GDP in the region.

Based on the CNI IIDS study if Nepal want to grow just about 5% the infrastructure needs to be about 8% of the GDP and the amount of money needed will be something about \$30 billion and just the climate proofing for Nepal is about other \$2 billion.

In Nepal, in addition to financing



there is huge gap both in technology and the know-how of doing it and he emphasized cross learning would be very useful. He also suggested that we should think beyond economic return while deciding priorities and focus areas for sustainable infrastructure like impact on climate, beneficiaries, economic and equity issue, equality, and technology.

Dr Lohani suggests combining global best practices for infrastructure relevant to Nepal and adapting or leapfrogging into models when necessary. He recommends focusing on the whole project cycle from preparation to grievance settlement, promoting life cycle assessment in technology selection, and adopting smart water, transport, energy, ICT, and low carbon technology. He also emphasizes the importance of environmental impact assessments in project design and committing to carbon neutrality, with a focus on urban and regional infrastructure, particularly in cities where most people will live by 2050. He mentions new opportunities in green infrastructure and renewable energy and the need for research in hydrogen, transportation, and carbon pricing.

Dr Lohani talks about the lack of private sector investment in

infrastructure in Nepal but notes that in the Asia Pacific region, at least 50% of energy projects and more than 50% of IT infrastructure projects are funded by the private sector. He believes that Nepal needs to tap into multilateral financial institutions such as ADB, WB, and AIBM for funding as they can provide long-term, concessional funding for 20-30 years. Dr Lohani also suggests creating an enabling environment, such as policy and regulation acts, to mobilize domestic private sector resources and international investment. The speaker proposes five financing modalities to promote private sector investment in Nepal, including public-private partnerships, infrastructure equity funds, debt capital markets, local currency bonds, and green bonds. The speaker emphasizes the need to address political risk, policy risk, foreign currency risk, and a good exit procedure to provide comfort to private investors.







## **MR. NARAYAN KAJI SHRESTHA**

Honorable Deputy Prime Minister and Minister of Physical Infrastructure and Transport, Chief Guest

Honorable Mr. Shrestha ended the opening session expressing his hopes and aspirations that the forum would explore innovative ways to finance sustainable infrastructure. He emphasized that infrastructure is a pre-requisite for any kind of development especially for developing countries like Nepal. Due to the resource constraints infrastructure investment and also the development activities have remained low. He also emphasized that the traditional approaches of infrastructure development have negative impact on environment and that we should be open to sustainable infrastructure. However, we need to invest on average NPR 2,025 billion per year to implement the sustainable development goals of which NPR 614 billion is required for transport and industry and NPR 168 billion rupees for urban infrastructure. He points out the total annual financing gap stands at NPR 555 billion rupees. Financial gap in the public sector being at NPR

218 billion while that in private sector at NPR 367 billion, Mr. Shrestha added that finance is not the only constraint in our infrastructure development process. Timely completion of infrastructure projects and the quality of work are the real indicators that show if the investment we have made is utilized properly.

Mr. Shrestha mentions in his speech that Government of Nepal has formed three task forces for the sustainable development infrastructure. The first task force's role is to reform the governance, the second task force looks after the reform of the infrastructure system preferences and its orientation. The third task force is formed to reform the transport sector. He ends with a hopeful note that the forum's deliberations would be helpful in future.



# SESSION 1:



## Public Private Partnership (PPP)/ Engineering Procurement Construction (EPC) Contracts: Formulation and Experience

### 4.1 Overview

The utilization of Public-Private Partnerships (PPPs) and Engineering, Procurement and Construction (EPC) contracts has become more prevalent in the delivery of sustainable infrastructure projects. The purpose of this session is to facilitate dialogue and knowledge-sharing on the development and execution of PPPs and EPC contracts for sustainable infrastructure initiatives. The objective is to provide a forum for participants to exchange their experiences and insights on the formulation and implementation of these contractual arrangements, with a focus on sustainable infrastructure development. The session was designed to accomplish the following objectives:

To increase the understanding of the role of PPPs and various forms of contracts in delivering sustainable infrastructure projects,

To share experiences and best practices on the formulation of implementation of PPPs and EPC contracts for sustainable infrastructure development,

To identify challenges and opportunities for improving the effectiveness of PPPs and EPC contracts in delivering sustainable infrastructure



## SHREE SEETHAPATHY CHANDER

Non-executive Director of Tata Power Solar Systems Company Limited.

### 4.2 Summary

Presentation on Public Private Partnership (PPP): Understanding PPP

Shri Seethapathy Chander begins his presentation by defining PPP. He explains that PPPs are contractual partnerships between public and private entities that aim to improve service delivery rather than just creating assets. PPPs can take many forms, including service contracts, management contracts, leasing contracts, and concession contracts. PPPs bring in complementary sources and share allocated risks and rewards. He mentions that PPPs lead to economies of scale, which the government may not have in a particular sector, but the PPP partner may have, especially if they work cross-border. Chander emphasizes the importance of improving product or service efficiency to set

benchmarks and avoid creating obsolete assets. He also highlights the significance of new technologies, superior market access, and credibility of the PPP partner. However, Chander cautions that substituting capital expenditure for revenue expenditure can add to budgetary inflexibility, and the financial viability of the project is dependent on tariff policies and subsidies. He advises against subsidized PPPs as they put the risk on the developer entirely on governmental finances, and PPPs that lead to controlled monopoly situations require good, transparent regulation. Chander acknowledges that circumstantial variations may occur and emphasizes the importance



of equitable resolutions between parties. He accentuates that social acceptance and awareness campaigns may be required in some countries, and efficiency and quality should not be compromised in the name of cost savings.

The government can intervene to keep user charges low for certain categories of users, but if they are to pay all user charges, it carries the highest risk for the developer. Chander emphasizes that the private sector needs more than just money; they need comfort that there will be no arguments on the performance parameters. A lot of preliminary tasks need to be done to define the basic performance parameters before signing a contract because negotiating immediately after contract signing can lead to litigation and loss of public support. Capital subsidies are preferred to operating subsidies because mid-course corrections are always needed for a long-term concession.

He shared some successful PPP in the Asian region. The first example of successful PPP is the Megh Nagar combined cycle gas fired power plant in Bangladesh. The plant was built with high-efficiency turbines, which was a departure from the previous trend of low-efficiency turbines due to cheap gas prices. The availability

factor of the plant was set at a minimum of 85%, with heavy penalties for falling short, and the gas price was pushed up to the international price of natural gas for evaluation purposes. Other mitigating factors that contributed to the success of the project include land acquisition and initial environmental studies being done by the government, only choosing reputed contractors in the final bidding, and having the transmission line and gas pipeline built with ADB funds. The plant was transferred to a new owner after five years at a premium of 25%. With this example Chander highlights to prioritize high-efficiency equipment to improve plant performance and reduce costs in the long run, even if gas prices are low, to set performance targets for the plant and enforce penalties for falling short to ensure accountability of the PPP partner, mitigate risks through government support, such as providing land and initial environmental studies, and using funds from international organizations for transmission line and gas pipeline construction. Careful selection of reputed contractors can



ensure the quality and success of the project. Thus, successful PPPs can have significant value growth potential.

The two other examples of successful projects in the energy sector shared by Chander were the Laos Nantong hydroelectric project and the India Petronet gas project. The Laos Nantong project faced barriers due to Laos being a highly indebted country with limited international financing, but ADB was able to mitigate the risks by financing the transmission lines and agreeing to purchase 90% of the output, reducing the risk for the promoter. The project required intensive upfront studies to determine the viability and cost, including environmental studies and mitigation efforts. The project was successful and is credited with making Laos a rich foreign exchange country. The India Petronet gas project was developed to replace public taxis and autos to run on compressed natural gas, as India did not have a major source of natural gas at the time. The ADB, along with government entities and a French company, formed a public-private partnership to finance the project, negotiating a long-term supply from Qatar. The project was successful, dropping the price of fuel in major cities and offsetting pollution. The

ADB sold its shares after 10 years at 17 times the equity subscription. Both projects required careful planning and management to address the unique challenges of their respective contexts.

Lastly Chander gives his insights on the potential PPP projects in Nepal. His recommendations are focused on investing in mid-sized hydropower plants, functional specifications, transmission interconnection, revenue share models, microgrids, transportation, logistics and data hubs, telecommunications, and health care. Additionally, he suggests appointing a third-party engineering consultant to ensure the performance parameters of the project are met and making the bid documents transparent to increase social acceptability and minimize controversies. Finally, Chander recommends transitioning to battery-powered vehicles as a way to reduce dependency on imported diesel and petrol. These recommendations seem like they have the potential to benefit Nepal's economy and improve access to electricity and transportation for its citizens.





## **MR. HAIDER RAZA**

Procurement Team Leader and  
Senior Procurement Specialist,  
The World Bank, Nepal

Presentation on Engineering Procurement Construction (EPC) contracts: Formulation and Experience

Mr. Raza presents on Engineering Procurement Construction (EPC) contracts: Formulation and Experience. He uses examples from different countries and argues for why we need EPC contracts, when to use these contracts, how to procure them, the accountability matrix for these contracts and sheds light on the World Bank's initiatives and challenges related to EPC contracts. He explains why EPC contracts are needed and says that EPC contracts evolved to transfer the risk from the employer to the contractor, however the employer needs to define the scope of work and their requirements precisely. These risks vary across different risk areas such as: design,

scope of work, maintenance, defects liability, delays in handing over the site, payments, cost, supervision of work, variations, and quality.

In EPC, the contractor is responsible for both the design and execution, while in traditional procurement, the employer is responsible for the design and the contractor is responsible for execution. In EPC, payments are made based on milestones rather than the quantity of work completed, while in traditional procurement, payments are made based on the quantity of work completed. In EPC, the quantity risk is transferred to the contractor, while in traditional procurement, the



quantity risk is on the employer. In EPC, there is a more stringent requirement for having a certain percentage of the project available for execution purposes before contracting, while in traditional procurement, there is no such requirement. In EPC, there is a limit for variations in the scope, while in traditional procurement, there is no limit. In EPC, there is no engineer responsible for quality assessment, but rather the employer's representative checks the performance against established standards, while in traditional procurement, an engineer is responsible for the quality assessment.

Mr. Raza further explains that if the employer is willing to pay slightly more than item-rate contracts and if they require a higher degree of certainty regarding timely completion of the project within the committed budget, EPC contracts can be used. Similarly, EPC contracts can also be used if the employer wants to avoid spending time and effort on daily progress review and supervision and only cares about the outputs that meet the performance criteria, to eliminate any adversarial relationship between the designer and the contractor. He touched upon the

terms and conditions in detail for the contractor and the employer regarding the Accountability Matrix as well.

Mr. Raza explains how to procure an EPC contract in the most effective way. He adds that the primary objective is to select a contractor who has the highest likelihood of completing the project successfully at a favorable overall cost. The procurement process typically involves prequalifying a limited number of contractors and then inviting them to bid. The focus is not on increasing competition, but rather on prequalifying contractors who can assume greater risks and deliver the project successfully. The bidding document, or Request for Proposal (RFP), should define the employer's requirements in detail to ensure that bidders have a clear understanding of the scope of work. The client should also encourage creativity by providing flexibility in the design criteria, using performance criteria as a basis for holding the EPC contractor accountable for the project results.



Mr. Raza further adds that before awarding the contract, some form of technical and financial negotiation with the lowest evaluated bidder is usually necessary. The evaluation criteria for selecting a contractor should include technical qualifications, design and supervision capabilities, work program and method statements, and bid cost (fixed). Other factors, such as life cycle costing, value for money, and other considerations, may also be taken into account.

Mr. Raza talks about the World Bank initiatives who is promoting the use of Rated Criteria to ensure value for money through its Standard Procurement Documents. He adds that the Bank is also making it mandatory to ensure certain standards are met at site covering the Social and Environmental Safety including that of the safeguard against Sexual Exploitation, and it is also ensuring that weightage is provided to the Cost and Technical Proposals. Mr. Raza then pinpoints the challenges World Bank has faced regarding EPC contracts that include raising awareness in the construction industry, streamlining public procurement rules to increase flexibility in EPC procurement, developing or enhancing the bidding

document for EPC projects and building the capacity of public organizations to handle EPC projects through training.

Through his presentation Mr. Raza discusses the evolution of contract types, particularly the shift to EPC contracts, which transfers risk from the employer to the contractor. He highlights the differences in scope of work definition, responsibility, and payment methods between EPC and Admeasure contracts. Mr. Raza believes that the construction industry should consider the use of EPC contracts for timely and efficient project delivery, despite the higher cost. He also discusses the different elements of costing in EPC contracts, emphasizing the importance of timely payments, pre-qualification of contractors, and the employer's requirements document. He also elaborated on the negotiation process for EPC contracts and how they focus on technical parameters, quality, and sustainability, with the use of non-price criteria for evaluation.







## **MR. CHAKRAVARTI KANTH**

Joint Secretary (Technical),  
Public Procurement  
Monitoring Office

Mr. Chakravarti Kanth provides his remarks on the presentations on the PPP and EPC contracts and discusses the application of both contracts in the context of Nepal. Mr. Kanth discussed the challenges and opportunities of implementing public-private partnerships and engineering, procurement, and construction projects in Nepal. He notes that PPP policies were introduced in 1999 and real progress was made with the Investment Act in 2009, but there have been challenges in implementing projects successfully. He explains that there are various agencies responsible for launching projects according to the separation of responsibilities and authorities under the three tiers of government: Federal, Provincial, and Local. These agencies implement projects under their respective tiers, but projects under the category of up

to NPR 6 billion can be launched by other agencies. However, for mega projects, the Investment Board of Nepal is the sole responsible agency for implementation. Mr. Kanth emphasizes the importance of risk management and viability gap funding for successful investment in PPP and EPC projects. He discusses the implementation of EPC contracts in Nepal and notes that while the government has endorsed guidelines for EPC contracts, the implementation is still in infancy. Mr. Kanth also discusses the challenges and limitations of implementing EPC and PPP projects in Nepal and recommends developing guidelines for better practices and success.





Facilitated by  
**ER. KAMAL RAJ PANDE**  
Former Joint Secretary,  
Government of Nepal

### 4.3 Plenary/Open Forum/Q&A

Q1. Question posed by Mr. Kul Chandra Silwal to Shri Seethapathy Chandar.

The PPP model is a new development practice like for Nepal which is a developing country, and it poses both challenges and opportunities. How can we sensitize community people about the PPP and relate it to sustainable infrastructure development?

Shri Seethapathy Chander suggested that the government needs to be transparent in the selection of projects and the development parameters, as well as making the contracts public so that people can

raise questions and have them answered.

Q2. How can we create awareness in public and private sectors to opt for EPC contracts?

Mr. Haider Raza discusses the importance of bridging the gap between the private and public sectors in EPC contracting. He suggests that the private sector's main priority is to get the job done quickly and efficiently, and that they



are not necessarily concerned with following public regulations. The financing for EPC contracting is 100% assured, so contractors do not need to worry about financing. Ultimately, the decision of whether to use an ad measure or EPC approach is up to the private sector and may depend on their priorities and goals for the project.

Q3. Question posed by Padam Bahadur Chand to ER. Kamal Raj Pandey was redirected to Dr. Bindu Nath Lohani.

Financing infrastructure is already a challenge for Nepal, but now we have discourses on nature-based infrastructure development. Addressing natural resources safeguards, including wildlife friendly infrastructure will definitely add to construction costs. How can we construct infrastructure by incorporating the natural resources safeguards measure which has caused implications?

Dr. Bindu Nath Lohani emphasized the importance of considering environmental and climate factors when building infrastructure. He

notes that there will be an initial cost, but this cost is necessary for sustainable infrastructure. He also suggests that sometimes nature-based solutions can be cheaper and better than traditional methods, but alternative thinking is not happening enough. Dr. Lohani argues that public consultation is weak and there needs to be a change in thinking to ensure projects are sustainable in the long term. He mentions the availability of blended finance opportunities and suggests packaging projects in a way that may be eligible for grant money.

Q4. Is there any difference between EPC and ad measure contracts with regard to application of environmental safeguards?

Q5. In Nepal, has there been any benchmarking done for readiness of national contractors to go for EPC



contracts by The World Bank? Or is there any review of EPC contracts, documents, especially in the case of the Kathmandu-Tarai Fastrack and Siddha Baba tunnel by The World Bank?

According to Mr. Haider Raza the World Bank is encouraging the Nepalese construction industry to move towards the EPC kind of modeling and contracting for upcoming road sector projects. He says that the World Bank is available to have separate sessions with the construction industry to persuade them to adopt this approach and prepare themselves for new challenges. The World Bank has not done any benchmarking for the readiness of national contractors in Nepal to go for EPC but encourages them to apply if they meet the technical qualification requirements for international procurement opportunities.

Mr. Raza also adds that ghost contracting doesn't help the construction industry because qualification requirements need to be

substantiated by a completion certificate, which ghost contractors do not have. They execute and disappear, sometimes never even showing up, which doesn't help the industry. He emphasizes that people in the industry need to put a barrier on ghost contracting, and that the World Bank can only do their due diligence, but it may not be helpful without cooperation from the industry.

Q6. Question posed by Mr. Hari Ram Shrestha:

How much does it cost in percentage of added in cost estimation of EPC to compensate, the risk shifted to contractor and to accommodate the benefit to the employer compared to that of the quantities-based contract?

Mr. Haider Raza explains that the cost per head in an EPC project depends on the accuracy of the employer's requirements and the contractor's



understanding of the project's risks. There is no fixed percentage for the cost estimate, and it varies depending on the dimensions of the procurement and pricing. The speaker emphasizes the importance of selecting a good designer to bring accuracy to the project, which helps to identify risks and maintain a delicate balance between quality and cost. The percentage of risk should be lower than anticipated from the employer's requirements. The speaker suggests that good teamwork with a designer is necessary to maintain a balance between cost and quality.

Shri Seethapathy Chandar explains that the variation in price between an EPC and ad measure contract depends on the complexity of the project. For example, a gas turbine power plant has less civil work and more plants and machinery, resulting in less variation in the markup. A hydro plant has more civil works and less mechanical and electrical works, resulting in higher variability and higher padding up. The only way to reduce this variability is through

extensive upfront investigative work by the owner, using quality investigative work based on international standards, which will provide a better platform for the designer of the contractor to base their analysis on.

Mr. Chakravarti Kanth added a remark about the estimated percentage added to a project cost. He mentions that the directive prohibits adding risk to the estimate, but there is a tendency for public entities not to award bids higher than the estimated amount. To avoid this, for EPC contracts, the estimate is extrapolated for the project period based on the price indices published by Nepal Rastra Bank. This extrapolation is done to evaluate the project within the project cost so that no contract is awarded above the bidding amount. This is the provision in the case of Nepal.



# SESSION 2:

## ENHANCING INVESTMENT THROUGH ACCESSING CLIMATE CHANGE FUND



### 5.1 Overview

The effects of Climate Change have a considerable influence on infrastructure, and the need for access to finance for sustainable infrastructure development has become more critical. Climate change funds serve as financing source for infrastructure projects that promote climate change mitigation and adaptation. The main aim of this forum is to discuss ways to maximize investments in infrastructure through the utilization of climate change funds. The session was designed to accomplish the following objectives:

To provide a platform for stakeholders to share their experience and best practices in accessing climate change funds for infrastructure.

To discuss the challenges and opportunities of accessing climate change funds.

To identify potential project opportunities and strategies for successfully accessing the funds.

To discuss the role of the private sector in accessing climate change funds and the benefits of Public Private Partnerships in this context.



## **MR. ROBERT DOBIAS**

Advisor for the Climate Change Center at the National Research Council of Thailand.

### **5.2 Summary**

Presentation on the protocols and procedures in assessing the climate change fund.

Mr. Dobias begins with a brief overview of the history of climate change showing evidence of man-made climate change and discusses the global landscape for climate finance. Mr. Dobias discusses the progress and challenges of global climate finance. He explains that the UNFCCC was established in 1994 and the first conference of the parties was held in 1995. In his speech he shared that the first World Climate Conference was held in 1979 and the Intergovernmental Panel on Climate Change (IPCC) was established in 1988 to study and find findings on climate change was presented to

governments. He added that UNFCCC was opened for signature in 1992 and entered into force in 1994. He further explained that the ultimate objective of the Convention was to stabilize greenhouse gas concentrations at a level that would prevent dangerous anthropogenic interference with the climate system within a timeframe sufficient to allow ecosystems to adapt, while also ensuring sustainable economic development and intergenerational equity. The common but differentiated responsibility principle placed the onus on developed countries to



address climate change initially, but this changed after the Copenhagen Accord in 2009, where all countries were expected to play a part in decreasing greenhouse gas emissions. The Convention also introduced market mechanisms such as the Clean Development Mechanism to raise funds to support developing countries in building their capacity to address climate change. Mr. Dobias further discusses the history of climate agreements, including the failure of the Copenhagen conference, the promise of \$100 billion in financing for developing countries, and the success of the Paris Agreement in setting ambitious targets for reducing greenhouse gas emissions. He mentions the importance of private sector disclosure and transparency, and the need to rapidly decarbonize the economy. He adds that COP26 was successful in creating new rules for emission trading and ending finance for new unabated coal power and ultimately emphasizes the importance of global cooperation to combat climate change.

Mr. Dobias further argues that the major international banks have

promised not to invest in coal by the end of 2021 and multilateral development banks have pledged to align with the Paris Agreement. However, the \$100 billion target for climate change finance was not reached, and the 1.5 target for global temperature increase was not achieved. In COP27, there was not much progress on aligning the financial sector with net-zero goals or accelerating the phase-out of coal. One positive development was the establishment of the Just Energy Transition Partnership with Indonesia, which promised up to \$20 billion to drop its coal program and replace it with renewable energy. Loss and damage caused by climate change will be addressed through a fund, but it is still unclear how it will be monetized. Overall, while some progress was made, there is still a lot of work to be done to address the urgent issue of climate change.

Mr. Dobias indicates that the climate finance architecture is a complex





system that deals with where the money for climate-related projects comes from, how it moves, what types of projects receive funding, and who ultimately benefits from the funding with public and private financing being roughly equal. He further highlights that over the past decade, global climate financing has almost doubled, from \$364 billion in 2010 to \$850 billion in 2020, with an annual growth rate of 7%. However, this amount is still far below what is needed, with a gap between current financing and the required amount to reach the median line of \$6 trillion to \$8 trillion by 2030. The energy sector is currently the biggest beneficiary of climate finance, followed by transport, which is rapidly increasing. Mitigation projects make up about 90% of climate finance, while adaptation only receives about 7-8%, although more funding is expected for adaptation in the future. Looking at different regions, East Asia needs between \$650 billion to over a trillion dollars annually for infrastructure up to 2030. Overall, there is a significant gap between current financing and the amount needed to effectively address climate change, which must

be addressed urgently. He presented that climate finance has been increasing over the years, with public finance overtaking private finance in recent years. Development finance institutions are the largest contributors to climate finance, while climate funds play a smaller role but offer important concessional financing. The report emphasizes the need for aggressive policy by governments to drive renewable energy and consistency in regulations to provide certainty for private sector investment. Despite the increase in adaptation finance, the current level is far below what is needed, and mitigation finance is mostly directed towards renewable energy with energy efficiency lagging. The report suggests that energy efficiency presents an easy win for climate



finance but has not received enough attention.

Mr. Dobias sheds light on what climate finance is. Climate finance refers to funding provided to address climate change issues such as mitigation, adaptation, and technology transfer. He says that the public sector has a small proportion of their funds dedicated to climate change, but it offers key grants and concessional financing. Mr. Dobias also sheds light on how renewable energy prices have decreased rapidly, which is largely due to aggressive policy stances by governments, how corporations are the largest contributors to climate finance on the private side, and households are third, and how concessional funding is essential to de-risk first movers in climate action. He talks about how fossil fuel subsidies are more significant than the money put into climate change, and subsidies should

be redirected to climate action instead of continually subsidizing fossil fuel extraction. He states that concessional funding accounts for 16% of climate finance, and finance is mainly domestically sourced. There is problematic data on climate finance, particularly in the private sector and adaptation projects. Mr. Dobias remarks that to improve global climate finance this decade, we must start pulling together, focus on concessional financing and blended finance, and redirect fossil fuel subsidies. He says that we need consistent policy stances and regulations that remain for more extended periods, more money going into energy and efficiency, and reporting improvements to make data more accurate.





## **MR. ROBERT DOBIAS**

Advisor at Climate Change  
Center National Research  
Council of Thailand

Presentation on Emerging Opportunities to Optimize Investments through Accessing the Climate Funds, by Mr. Robert Dobias

In this presentation, Dr. Dobias discusses different sources of climate finance, with a focus on private sector financing. He cites a report from organizers of COP27, which highlights the need for a new roadmap on climate finance and hopes that the private sector will provide a large portion of the funding. He notes that multilateral development banks can help provide financing to the private sector and calls for funding to be increased for high priority areas such as cutting emissions, restoring nature

land, and mitigate climate change damages. He also mentions potential demand-side mitigation options, such as buildings, industry, and land transport.

Mr. Dobias provides an overview of climate funds starting with UNFCCC its financial mechanism and types of funds fall under UNFCCC such as Green Climate Fund, Global Environment Facility, Special climate change-fund, lease developed countries fund and finally the adaptation funds. To



access these funds, entities need to be accredited and show fiscal preparedness. The speaker emphasizes the importance of finding the right fund and how to contact them to get access to funding.

The Green Climate Fund is a major fund that provides concessional funding for projects related to mitigation and adaptation and has a specific window for supporting sub-national climate action. The Special Climate Change Fund and Least Developed Countries Fund are smaller funds that provide grants for adaptation and technology transfer projects. Private sector engagement is emphasized in many of these funds. He also highlights the role of the National Designated Authority in each country, which oversees the administration of the funds in the country.

Mr. Dobias mentions various funding options available for climate change mitigation and adaptation projects in Southeast Asia. He provides examples of the International Monetary Fund's loans, the Asian Development Bank's climate funds, and initiatives aimed at improving sustainable capital markets in Southeast Asia. He also suggests looking at bilateral agencies like the UK's international climate for funding options. Mr. Dobias emphasizes the availability of soft money for innovative, high-impact climate projects and encourages the audience to explore these funding options.





## **MR. NAWA RAJ DHAKAL**

Acting Executive Director

Alternative Energy Promotion  
Center (AEPC)

Mr. Dhakal spoke about Nepal's vulnerability to climate change despite its low greenhouse gas emissions and outlines ambitious targets for mitigation and adaptation through its second Nationally Determined Contribution (NDC) and long-term strategy for net-zero emissions by 2045. However, Dhakal notes that achieving these targets will require significant external resources.

The cost of achieving Nepal's NDC conditional mitigation targets alone is estimated to be \$25 billion, which is significantly more than the \$3.4 billion estimated cost of achieving unconditional targets outlined in the NDC. AEPC has been successful in promoting renewable energy and energy efficiency, having installed nearly 84 megawatts of renewable energy technologies and promoting clean cooking solutions like biogas and electric cooking, benefitting nearly 3.6 million Nepalese households. AEPC has also been working to mobilize climate finance

and has become Nepal's first direct access entity accredited by the Green Climate Fund. The Ministry of Finance is responsible for dealing with climate finance matters in Nepal, and with their coordination and regulation, Nepal has been able to get three projects approved by the Green Climate Fund, mobilizing around \$88 million of grant financing. Private sector involvement is critical to mobilizing resources, and the government of Nepal is prioritizing the mobilization of public and private finance to achieve the goals set under the second NDC and long-term strategy. Dhakal believes that building strong partnerships among public and private sector entities, both domestically and internationally, is crucial for achieving the country's climate goals.





Facilitated by  
**ER. BIRENDRA RAJ PANDEY**  
Secretary General of IFAWPCA

### **5.3 Open Forum/Q&A (all the answers are summarized)**

Q1 to Mr. Robert Dobias:

How can we engage with local communities and stakeholders to ensure that our project or activity is sustainable? As the private sector how can we identify priority areas and mitigate any risk challenges that may emerge while using climate change fund?

Mr. Robert Dobias:

The success of adaptation projects depends on engaging with local communities and stakeholders throughout the process. Private sector companies can identify priority areas for mitigating climate change risks by looking at their country's climate change priorities and plans. They can also consider using concessional

support or funds to de-risk their projects financially.

Er. Birendra Raj Pandey:

Would you please indicate additional costs required to make infrastructure projects climate resilient?

Mr. Dobias:

He recalls discussions about the onerous nature of environmental mitigation measures required for infrastructure projects, particularly hydropower, funded by the Asian Development Bank. At first, there was



resistance to the added costs and requirements, but over time, attitudes changed as people gained experience and saw the benefits of avoiding problems that could arise from ignoring environmental concerns. Mr. Dobias sees parallels in the discussions around climate change mitigation and hopes that people will learn from past experiences and prioritize addressing climate change challenges.

Er. Birendra Raj Pandey:

Climate risk is increasing. IPCC report informs that effectiveness of adaptation measures will decrease over the years. What is your suggestion to Nepalese people to help them survive from climate induced disasters as effectiveness of adaptation may decrease?

Mr. Dobias:

Mr. Dobias was not aware if the IPCC report states that adaptation is becoming less important than mitigation, but he believes that adaptation is getting stronger and will continue to do so due to increasing issues with droughts and floods. He believes that firm government policy action is needed to develop adaptation technology and bring down its costs. The suggestion is

made to drum up support for a stronger government policy on climate change adaptation in Nepal.

Mr. Nawa Raj Dhakal adds:

Identifying priority areas for climate change mitigation and adaptation depends on the country's context and the type of climate-induced disasters. In Nepal, the national climate change policy has identified 12 priority areas, and the second NDC and national adaptation plan have also identified key sectors. A people-centered approach should be followed to understand the possible impacts of climate change and how to minimize them through adaptation and mitigation strategies. Diversifying energy sources, such as developing solar, wind, and bioenergy, is also important.

Er. Birendra Raj Pandey:

Who are the lead agencies for developing capacities of public institutions and private sector at national level? How can they be approached and where can we access



the relevant information?

Mr. Nawa Raj Dhakal:

The Ministry of Forest and Environment is the lead agency for UNFCCC, while the Ministry of Finance plays a role in mobilizing financing from various international organizations and building partnerships between public and private sector stakeholders to implement climate change mitigation and adaptation actions. The Ministry of Finance also acts as the National Designated Authority for the Green Climate Fund (GCF), while AEPC is the Delivery Partner for the readiness and preparatory support program. Their activities are clustered into three areas: working with the NDA, working with Direct Access Entities, and stakeholder engagement. Mitigating climate change in terms of financing sustainable infrastructure for present and future generations requires building capacities in developing and implementing projects, engaging stakeholders, and informing about the process, procedures, and methodology of accessing such funds.

Er. Birendra Raj Pandey:

How can we go about assessing the impacts of climate change on agriculture production?

Mr. Dobias:

Assessing the impacts of climate change on agriculture involves looking at water availability, including the potential impact of disappearing glaciers in Nepal. It's important to address both the impacts of climate change on agriculture and the impacts of agriculture on climate change. Seasonality of water and heating also need to be considered, as they can have significant impacts on agriculture and human health.

Mr. Nawa Raj Dhakal adds:

The impacts of climate change on agriculture involve both direct and negative effects on water availability, either through flooding or drought. Water is a crucial commodity for agriculture and its scarcity or abundance can significantly disrupt agricultural activity.

Er. Birendra Raj Pandey:

Robert, have you examined the ongoing projects at GCF or others through wildlife friendly infrastructure lens in terms of





additional fund allocation or mainstreamed in the project cycle?

Mr. Dobias:

The integration of people with the management of protected areas is crucial in the face of climate change, particularly in areas where resources such as water are becoming increasingly important. The Green Climate Fund has sponsored projects focused on generating sustainable financing for communities living near protected areas or areas of high ecological value to ensure their continued ecological soundness while allowing economic activity to continue.

Er. Birendra Raj Pandey:

Could you please elaborate the loss and damage fund announced in COP27 and how Nepal can access this fund?

Mr. Dobias:

The issue of loss and damage related to climate change is a contentious issue and there is a fear of liability attached to it for countries that were responsible for greenhouse gas emissions in the past. While a fund has been agreed upon, the question of who will contribute to it, where the funds will go, and how they will be distributed still needs to be worked

out. Loss and damage refer to damage that cannot be undone, unlike adaptation, and advocates for compensation for loss and damage argue that it is necessary for those impacted by climate change, such as the Pacific islands who may lose their land due to sea level rise.

Mr. Nawa Raj Dhakal adds:

The decision to create a separate fund for loss and damage is seen as progressive and important for vulnerable countries like Nepal. This allows loss and damage activities to be prioritized and funded separately from adaptation activities. The details of how the fund will be structured and accessed are still being worked out, but the fund will support rescue operations and reconstruction activities after climate-induced disasters.

Er. Sushil Kumar Shrestha, the board member of IFAWPCA, delivered a vote of thanks after the distribution of tokens marked the conclusion of the event.



# KEY TAKEAWAYS OF THE EVENT



Key takeaways from the keynote address by

## **DR. BINDU NATH LOHANI**

- Infrastructure investment is closely associated with GDP per capita and plays a crucial role in economic development.
- Current infrastructure investment in Asia varies between 2% to 7% of GDP, with Nepal having one of the lowest infrastructure investments in the region at around 2-3% of GDP.
- The financial needs for infrastructure development in Asia is estimated to be around \$26 trillion between 2016 and 2030, with an additional \$3.4 billion required for climate-proofing infrastructure.
- There is a financing gap between investment needs and current investments, ranging from 2.4% to 5% of GDP in the region. Nepal needs an infrastructure investment of about 8% of GDP (about \$30 billion) if it wants to grow by just about 5%.
- Combining global best practices for infrastructure relevant to Nepal and adapting or leapfrogging into



models when necessary is recommended. Cross-learning would be useful in Nepal to address the gap in technology and know-how.

- Priorities and focus areas for sustainable infrastructure should go beyond economic return and consider impact on climate, beneficiaries, economic and equity issues, equality, and technology.
- Focused on the whole project cycle, promoting life cycle assessment in technology selection, and adopting smart water, transport, energy, ICT, and low carbon technology.
- Nepal needs to tap into multilateral financial institutions for funding and create an enabling environment, such as policy and regulation acts, to mobilize domestic

private sector resources and international investment.

- Five financing modalities to promote private sector investment in Nepal includes public-private partnerships, infrastructure equity funds, debt capital markets, local currency bonds, and green bonds.
- Political risk, policy risk, foreign currency risk, and a good exit procedure must be addressed to provide comfort to private investors.





## Key takeaways from the presentation on Public Private Partnership (PPP): Understanding PPP by

### **SHRI SEETHAPATHY CHANDER**

- PPPs are contractual partnerships between public and private entities to improve service delivery. PPPs bring in complementary sources and share allocated risks and rewards, leading to economies of scale, which the government may not have in a particular sector, but the PPP partner may have, especially if they work cross-border.
- PPPs require improving product or service efficiency to set benchmarks and avoid creating obsolete assets, and they should prioritize high-efficiency equipment to improve plant performance and reduce costs in the long run.
- The financial viability of the project is dependent on tariff policies and subsidies.
- Subsidized PPPs can put the risk on the developer entirely on governmental finances.
- Efficiency and quality should not be compromised in the name of cost savings
- Setting performance targets for the plant and enforcing penalties for falling short can ensure accountability of the PPP partner.
- Successful PPPs require mitigating risks through government support, such as providing land and initial environmental studies, using funds from international organizations, and careful selection of reputed contractors.
- Prioritize mid-sized hydropower plants, functional specifications, transmission interconnection, revenue share models, microgrids, transportation, logistics, data hubs, telecommunications, and health care.
- Appoint a third-party engineering consultant to ensure the performance parameters of the project are met and make the bid documents transparent to increase social acceptability and minimize controversies.



## Key takeaways from the presentation on engineering procurement, construction EPC contracts: Formulation and Experience by

### **MR. HAIDER RAZA**

- EPC contracts are used to transfer risks from the employer to the contractor, but the employer must define the scope of work and requirements precisely.
- Risks in EPC contracts vary across areas such as design, scope of work, maintenance, delays, payments, cost, supervision, variations, and quality.
- In EPC, the contractor is responsible for both the design and execution, while in traditional procurement, the employer is responsible for the design and the contractor is responsible for execution.
- In EPC, payments are made based on milestones rather than quantity of work completed, while in traditional procurement, payments are made based on the quantity of work completed.
- EPC contracts can be used when the employer wants timely completion within a committed budget and wants to avoid daily progress review and supervision.
- The procurement process for EPC contracts involves prequalifying contractors, inviting them to bid,



and selecting the contractor with the highest likelihood of successful project completion at a favorable overall cost.

- The bidding document or Request for Proposal (RFP) should define the employer's requirements in detail to ensure bidders have a clear understanding of the scope of work.
- Technical and financial negotiations with the lowest evaluated bidder may be necessary before awarding the contract.
- The World Bank is promoting the use of Rated Criteria to ensure value for money through its Standard Procurement Documents and making it mandatory to ensure certain standards are met at the site.
- Challenges faced by the World Bank regarding EPC contracts include

raising awareness in the construction industry, streamlining public procurement rules, enhancing bidding documents, and building the capacity of public organizations to handle EPC projects through training.

- EPC contracts are considered for timely and efficient project delivery despite their higher cost.
- The negotiation process for EPC contracts focuses on technical parameters, quality, and sustainability, with the use of non-price criteria for evaluation.





## Key takeaways from remarks on the PPP and EPC contract presentations made by

### **MR. CHAKRAVARTI KANT**

- EPC and PPP contracts being taken as a panacea for all problems pose dangers.
- PPP policies were introduced in 1999 and real progress was made with the Investment Act in 2009, but there have been challenges in implementing projects successfully.
- The Public Procurement Act 2006 designates responsibility to the Project Procurement Management Office (PPMO) to issue guidelines and technical loads regarding EPC contractors.
- The government of Nepal has endorsed guidelines for EPC contracts, but the implementation is still in infancy.
- Nepal has an issue of ghost contractors and there is a need for sufficient capacity development.
- The Investment Board of Nepal is responsible for implementing mega projects in the country, with other agencies responsible for projects under ₹6 billion.
- PPP projects in Nepal have seen success in sectors such as hydropower but have faced challenges in the transportation sector and have led to delays and failed projects.
- The importance of risk management and viable gap funding is important for successful PPP projects.
- EPC projects in Nepal have faced similar challenges to PPP, with issues surrounding financial viability and project preparation.
- There is a need for careful planning, risk analysis, and stakeholder engagement in order to ensure successful PPP and EPC projects in Nepal.



## ROBERT DOBIAS

### Key takeaways of the presentation on the protocols and procedures in assessing the climate change fund

- The shift from developed countries' responsibility to address climate change to all countries' participation after the Copenhagen Accord in 2009.
- Introduction of market mechanisms like the Clean Development Mechanism to support developing countries in addressing climate change.
- Failure of the Copenhagen conference, the promise of \$100 billion in financing for developing countries, and the success of the Paris Agreement in setting ambitious targets for reducing greenhouse gas emissions.
- Importance of private sector disclosure, transparency, and rapid decarbonization of the economy.
- Major international banks' promise not to invest in coal, multilateral development banks aligning with the Paris Agreement, but the \$100 billion target for climate change finance not being reached.
- Limited progress on aligning the financial sector with net-zero goals and phasing out coal in COP27.
- Establishment of the Just Energy Transition Partnership with Indonesia to replace coal with renewable energy.
- Uncertainty regarding the





monetization of funds to address loss and damage caused by climate change.

- Climate finance architecture involving the sources, movement, types of projects, and beneficiaries of climate-related funding.
- Global climate financing doubling over the past decade but still falling short of the required amount.
- Energy sector as the biggest beneficiary of climate finance, followed by transport, with mitigation projects dominating.
- Gap between current financing and the required amount to effectively address climate change.
- Increase in public finance and the role of development finance institutions and climate funds in climate finance.
- Need for aggressive policy, consistent regulations, and more attention to energy efficiency in

climate finance.

- Definition of climate finance as funding for mitigation, adaptation, and technology transfer.
- Decrease in renewable energy prices due to aggressive government policies.
- Corporations as the largest contributors to climate finance on the private side.
- Importance of concessional funding and redirecting fossil fuel subsidies towards climate action.
- Need for improved data on climate finance, particularly in the private sector and adaptation projects.
- Focus on concessional financing, blended finance, consistent policies, increased investment in energy efficiency, and improved reporting for global climate finance improvement.



## KEY TAKEAWAYS OF THE PRESENTATION ON THE EMERGING OPPORTUNITIES TO OPTIMIZE INVESTMENTS THROUGH ACCESSING THE CLIMATE CHANGE FUND



- The private sector is seen as a key source of climate finance
- Multilateral development banks can help provide financing to the private sector.
- Funding needs to be increased for high priority areas such as cutting emissions, restoring nature land, and mitigating climate change damages.
- Potential demand-side mitigation

options include buildings, industry, and land transport.

- Entities need to be accredited and show fiscal preparedness to access climate funds.
- The Green Climate Fund is a major fund that provides concessional funding for projects related to mitigation and adaptation.
- The Special Climate Change Fund and Least Developed Countries Fund are smaller funds that provide grants for adaptation and technology transfer projects.
- Private sector engagement is emphasized in many of these funds.
- The National Designated Authority in each country oversees the administration of the funds in the country.
- Funding options available for climate change mitigation and adaptation projects in Southeast Asia include the International Monetary Fund's loans, the Asian Development Bank's climate funds, and initiatives aimed at improving sustainable capital markets.
- For funding options look at bilateral agencies like the UK's international climate finance, availability of soft money for innovative, high impact climate projects

# EVENT GALLERY













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# FORUM ON "FINANCING SUSTAINABLE INFRASTRUCTURE"





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