



Asia
Pacific

ASPAC NEWS

QUARTERLY NEWSLETTER OF FIDIC ASIA PACIFIC

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INSIDE STORIES

- *ASPAC Board*
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FIDIC ASPAC

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Message from the President- FIDIC Asia Pacific



I am indeed delighted that we have restarted publication of quarterly Newsletter of FIDIC Asia Pacific – ASPAC News.

First of all, I would like to thank Chairperson of the Editorial Board, Mr Amitabha Ghoshal who has taken the challenge of getting newsletter published. He has been an Editor of ASPAC newsletter many years back and has right experience and capabilities.

Our desire is to make FIDIC Asia Pacific as one of the active Regional Groups of FIDIC and this will be possible only with the support of all Member Associations. We will need news from MAs including details of their events for inclusion in the Newsletter. Besides we also welcome technical articles of interest for the consulting community. Our desire is to involve young professionals in various activities of FAP. Ms Dilini Damage from Sri Lanka is the Chairperson of the Future Leaders Forum and I strongly encourage young members of various MAs to join the team.

We plan to have a series of webinars on topics of interest for the consulting community in the coming months and the 1st one is planned towards end of May.

FIDIA Asia Pacific has a twitter and LinkedIn accounts to enable you share news and interesting technical ideas.

Look forward to have your involvement in making ASPAC News dynamic.

Sudhir Dhawan

President- FIDIC Asia Pacific

EDITORIAL



Dear Friends,

It is a great pleasure to address all of you as the Chairman of the Editorial Board for the ASPAC NEWS – Quarterly Newsletter of FIDIC Asia Pacific, for the very first issue of this Newsletter, which we all hope will become a link between members of FIDIC Asia Pacific.

The countries in the Asia Pacific region have a lot in common – in terms of the challenges faced by the Consultancy industry and the need for the development of engineering infrastructure.

Interaction between the Consultants from different countries in the region can be of great value for all the stakeholders in the development program.

Asia Pacific region of FIDIC extends over a vast area, from the temperate zone of the northern hemisphere to the tip of New Zealand in the southern hemisphere. The countries have very diverse climatic conditions and also different geological formations. A very large percentage of the population of the World is located in this area and many of them had passed through the trauma of colonization by Industrially advanced countries of Europe. Infrastructure development inside the countries had not always followed the compelling needs of the population. Now, most of the countries are engaged in building up new infrastructure and that has made the Asia Pacific area the stage for unprecedented developmental work.

China has set the pace and today features as a developed country and the others are following the same path for rapid growth.

In this background, the Newsletter can play a vital role by making all the countries in the region aware of the development that is happening and going to happen in the future. The challenges faced, and the solutions adopted for overcoming the same can provide advanced education to others.

The editorial board comprises members from different countries and we request the balanced countries each to nominate a member in the editorial board such that the newsletter becomes a true mouthpiece of the Asia Pacific countries. You will find that an attempt has been made in this very first issue towards this objective. It is only with active support from all of you that we can achieve this welcome objective. We seek your continuous feedback in the form of news bits and articles on developments in your country, to make this publication a sought for document across the consultancy fraternity in this region as also other MAs of FIDIC.

On a personal note, this assignment gives me a nostalgic feeling as I had earlier played this role for ASPAC for many years ending in 2014. I feel extremely happy to get this opportunity and thank all of you for the same.

A handwritten signature in black ink, appearing to read 'Amitabha Ghoshal', with a horizontal line underneath.

Amitabha Ghoshal

Chairperson-Editorial Board

List of Member Associations from FIDIC Asia Pacific

S. No.	Member Country	Member Association
1	Australia	Consult Australia
2	Azerbaijan	National Engineering Consultancy Society of Azerbaijan
3	Bangladesh	Bangladesh Association of Consulting Engineers
4	China	China National Association of Engineering Consultants
5	China, Hong Kong	Association of Consulting Engineers of Hong Kong, China
6	China, Taiwan	Chinese Association of Engineering Consultants
7	India	Consulting Engineers Association of India
8	Indonesia	The National Association of Indonesian Consultants
9	Islamic Republic of Iran	Iranian Society of Consulting Engineers
10	Japan	Engineering and Consulting Firms Association, Japan
11	Kazakhstan	Kazakhstan National Association of Professional Engineers and Consultants
12	Malaysia	Association of Consulting Engineers Malaysia
13	Mongolia	Mongolian Road Association
14	Nepal	Society of Consulting Architectural and Engineering Firms, Nepal
15	New Zealand	Association of Consulting and Engineering
16	Pakistan	Association of Consulting Engineers Pakistan
17	Philippines	Council of Engineering Consultants of the Philippines
18	Republic of Korea	Korea Engineering and Consulting Association
19	Singapore	Association of Consulting Engineers Singapore
20	Sri Lanka	Association of Consulting Engineers, Sri Lanka
21	Thailand	Consulting Engineers Association of Thailand (CEAT)
22	Uzbekistan	Association of Consulting Engineers of Uzbekistan
23	Viet Nam	Vietnam Engineering Consultant Association

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FUTURE LEADERS FORUM

	Member	Country	E-mail
1	Dilini Gamage, Chairperson	Sri Lanka	dilini.ceb@gmail.com

Events from Last Quarter

Australia	
India	<ul style="list-style-type: none"> • Online FIDIC training on “Practical Use of FIDIC Conditions of Contract” – 12th to 15th January 2022 • Online FIDIC training on “Management of Claims and Dispute Resolution” – 2nd to 5th March 2022
Thailand	<ul style="list-style-type: none"> • Meeting with Architect Council of Thailand, and Association of Siamese Architects for legal Issues in Architects and Engineering Profession of Academic Institution on 23rd March 2022. • Online Conference on the Consultant’s Work Assessment Criteria on 22nd February 2022. • Meeting for Promoting Green House Gas Reduction with Thailand Leading Cement Producer on 3rd February 2022.

Development Potential of ASIA-PACIFIC Countries

This article attempts to bring upon an overview of the development gaps, potential and key initiatives from individual governments of few of the Asia Pacific countries. Most of these information have been obtained from Country Partnership Strategy documents of Asian Development Bank. The readers will get similar insights for the other countries from the region in the upcoming newsletters.



Jitendra Kumar Singh

Azerbaijan

Key Development Gaps and Potential

The quality of overall infrastructure in Azerbaijan steadily improved during 2010–2018, because of sustained high public investments. Despite this, significant infrastructure constraints remain to be overcome to accelerate the development of manufacturing, agriculture, tourism, and information and communication technology (ICT), which are the expected drivers of non-oil growth and economic diversification. Inadequate provision of water supply and sanitation beyond the Absheron Peninsula constrains the expansion of the tourism industry. The country needs to continue upgrading its electricity and gas distribution networks and strengthen transport infrastructure in the rural areas to stimulate new businesses in non-oil segments such as manufacturing. Only 45% of potentially arable land in Azerbaijan is equipped for irrigation, and almost half of the irrigated agricultural land is salinized because of inadequate drainage.

Access to and use of the internet varies significantly between urban and rural areas. Fixed broadband internet connection occurs predominantly through the landline telephone network. Expansion of the national broadband network, including through private sector participation, will improve digital connectivity for the country's industrial parks and SMEs and enable growth of computer and digital companies. To fully seize the opportunities from the growing regional cooperation momentum, the country needs to enhance and ensure financial sustainability of the substantial investments in road, rail, port, and air connectivity.



Government Strategy

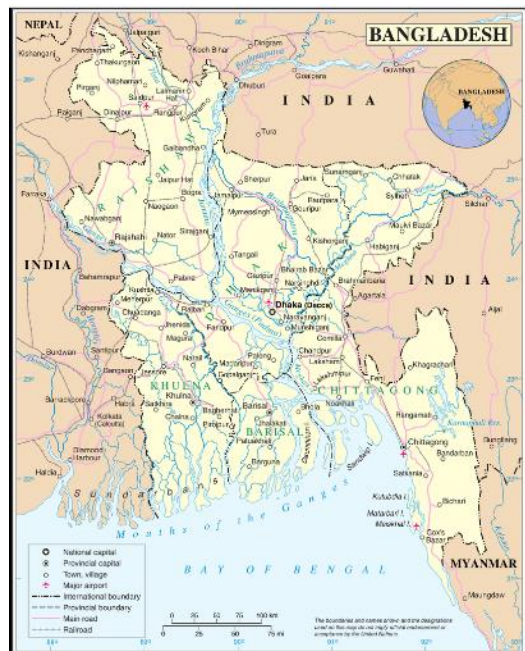
The government had made an earnest start to move toward non-oil-based economic growth model in 2012 with the adoption of a vision document for the country's development up to 2020. The 2014 oil price shock and the ensuing socioeconomic challenges required the government to focus on maintaining macroeconomic and finance sector stability through a countercyclical policy response in 2015–2016. Cognizant of the need for a more cohesive and accountable structural policy reform effort, in December 2016 the President of Azerbaijan approved the Strategic Road Maps on National Economy Perspective and Main Sectors, a development policy framework aimed at accelerated economic diversification, job creation, and productivity enhancement. Strengthening the country's institutional framework to support economic diversification is an important element of the strategy.

Bangladesh

Key Development Gaps and Potential

The structure of the economy in Bangladesh continues to shift from agriculture to manufacturing and services. During FY2016– FY2019, the industry sector grew at an average rate of 11.5% per year, the services sector at 6.5%, and agriculture at just 3.5%. The agriculture sector's share of GDP declined from 15.4% to 13.6%, while that of industry increased from 29.2% to 34.6%. However, industry, including the export-oriented manufacturing sector, lacks diversification, with over 80% of exports concentrated in ready-made garments to traditional export destinations, including the United States and the euro area. Infrastructure deficit is identified as a key constraint for economic diversification. Diversification in manufacturing and export items (such as leather, agro-products, information and communication technology [ICT], light engineering, pharmaceuticals), together with increased competitiveness and access to new markets, will be critical in recovering from COVID-19 pandemic, sustaining economic growth, and generating employment opportunities.

Bangladesh faces serious climate challenges because of its location in a river delta with low-lying flood plains. It is ranked as one of the most vulnerable countries to the impacts of climate change. Changing rainfall and water flow patterns, coupled with poverty incidence, high population density, rapid urbanization, and reliance on livelihoods that are weather-sensitive (such as agriculture) can affect rural livelihoods, food security, public health, and access to infrastructure and social services. The government has prepared the Bangladesh Delta Plan 2100 that integrates the country's development goals with sustainable management of water, ecology, environment, and land resources in the context of climate change and disaster vulnerabilities.



Government Strategy

Simultaneously aiming to focus on areas where important performance gaps in implementing the Seventh Five-Year Plan remain, especially those impacted by the COVID-19 pandemic, the Eighth Five-Year Plan by the government recognizes the need for higher resource mobilization, diversification of manufacturing and exports, and sustainable urbanization, among other issues. It centers on six core themes: (i) rapid recovery from COVID-19 to restore human health, confidence, employment, income, and economic activities; (ii) GDP growth acceleration, employment generation, and rapid poverty reduction; (iii) a broad-based strategy of inclusiveness with a view to empowering every citizen; (iv) a sustainable development pathway that is resilient to disaster and climate change, entails sustainable use of natural resources, and successfully manages the inevitable urbanization transition; (v) development and improvement of critical institutions necessary to lead the economy to upper middle-income country status; and (vi) attaining SDG targets and mitigating the impact of LDC graduation. The government estimates about \$750 billion is required to achieve the Eighth Five-Year Plan targets.

People's Republic of China (PRC)

Key Development Gaps and Potential

The PRC has made tremendous progress in reducing poverty and developing modern physical and economic infrastructure. Following many years of high growth, the PRC has achieved Upper Middle-Income Country (UMIC) status and emerged as the world's second-largest economy. Its per capita gross domestic product (GDP) reached \$10,070 in 2019. The increased importance of domestic consumption as a source of growth (55.3% of GDP in 2019) has begun to reduce reliance on capital investment and external demand. While industry remains important, services are now the largest sector of the economy, accounting for 53.3% of GDP in 2019.

Almost half of the PRC's cities do not meet the national standard for particulate matter less than 2.5 micrometers in diameter (PM_{2.5}). Rural air pollution from stalk burning, fertilizer application, and livestock farming remains high. Freshwater resources are scarce and unevenly distributed. Water quality has improved in minor river basins, but greater efforts are required to reduce pollution of groundwater, lakes, and reservoirs caused by untreated wastewater from households, industry, and agriculture. Solid waste management poses a growing challenge in the PRC. A lack of adequate landfill sites and effective waste-to-energy programs has prompted municipalities to resort to solid waste incineration intensifying air and soil pollution and threatening public health.



Government Strategy

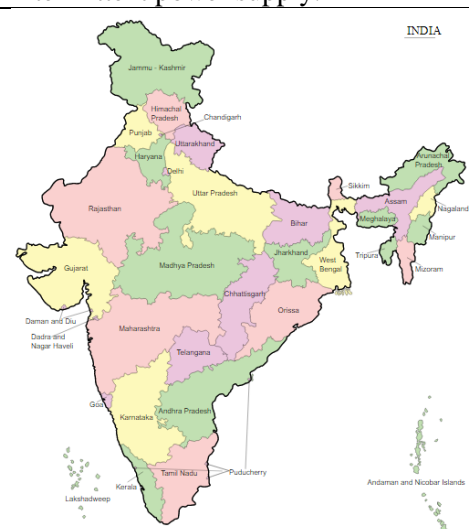
The 19th National Congress of the Communist Party launched the new era development agenda in 2017, including reforms to accelerate the PRC's transition to high-quality development and improve the broader well-being of the population. The 14th plan, covering 2021–2025, is instrumental in achieving this vision.

Key objectives of the 14th plan include: (i) achieving sustainable growth based on significant improvements in quality and efficiency; (ii) emphasizing innovation as the core of modern development; (iii) focusing on developing and leveraging the PRC's large domestic markets—a reference to the importance of the domestic market in line with the newly launched dual circulation paradigm; (iv) continuing reforms and opening-up, including developing a functioning market economy and the promotion of trade and investment liberalization; (v) reducing carbon intensity and formulating an action plan for carbon emissions to peak before 2030; and (vi) gradually closing the rural–urban income gap.

India

Key Development Gaps and Potential

Although India has improved its global ranking in the quality of infrastructure index from 87 to 68 during 2014–2016, infrastructure continues to be a major bottleneck. To meet the accessibility and mobility requirements of the growing economy, the road infrastructure needs massive investments to widen roads, pave surfaces, improve road safety, and maintain assets. Despite ongoing investments to strengthen the rail system, such as assigning dedicated freight corridors, it still suffers from congestion on high-density routes, slow freight train speed, and high freight costs. Efficient connectivity of the road, rail, and port systems also remains critical to contain high logistics costs and build global competitiveness. Power generation capacity needs to keep pace with rapid economic growth, but constrained by financial difficulties of power utilities. About 25% of households remain unelectrified, and many more suffer from intermittent power supply.



Government Strategy

India's urban population is growing rapidly, increasing pressure on already stretched basic urban services and causing lags in service delivery, housing shortages, costly economic activities, and environmental degradation. Access to basic services such as water supply and sanitation remains low, and the quality and duration of such services are poor. Cities suffer from inefficiencies in urban planning, land use, and floor area regulations (governing land use); underdeveloped property taxation; low investment cost recovery; and fragmented authorities in state agencies and urban local bodies (ULBs).

The government's flagship Smart Cities Mission for 100 priority cities and Atal Mission for Rejuvenation and Urban Transformation (AMRUT) for 500 cities aim to extend essential amenities with well-governed administration to invigorate urban transformation.

India is expected to become the world's third largest construction market by 2022. FDI in construction development (townships, housing, built-up infrastructure and construction development projects) and construction (infrastructure) activity sectors stood at US\$ 26.17 billion and US\$ 26.30 billion, respectively, between April 2000-December 2021.

Indonesia

Key Development Gaps and Potential

One of the most critical challenges facing Indonesia is that the quality of its infrastructure is insufficient to support a modern economy. The mostly fossil-fuel-based electricity distribution network suffers regular overloading, and unreliable supply affects several high-density areas. The coverage of piped and safely managed drinking water and sanitation is low. Poor spatial planning and land management has led to uncontrolled development in conservation and flood-prone areas, reducing the potential for groundwater recharge and escalating flood risks to residents, property, and agricultural land. The costs imposed by poor transport infrastructure curb competitiveness, constrain domestic economic activity, and limit integration into global production chains, while poor energy infrastructure restricts business investments and productivity. The limited capacity of local governments to provide affordable land, services, and housing has resulted in the growth of informal settlements with poor access to basic infrastructure and services. These infrastructure deficits contribute significantly to the disproportionate burden of unpaid care work and drudgery for women and girls. Despite the recent increases, infrastructure investment has fallen short of the climate-risk adjusted need of 6% of GDP. The proposed new capital in East Kalimantan province is an opportunity to develop a state-of-the-art green city, but also poses considerable planning, designing, and financing challenges. Stepping up green infrastructure investments, including by incorporating G20 principles for quality infrastructure investment, will help stimulate recovery from the economic impact of the COVID-19 pandemic, and support a green recovery path and broad-based job creation.



Government Strategy

The RPJMN, 2020–2024, which completes the National Long-Term Development Plan (RPJPN), 2005–2024, establishes the goal of achieving prosperous, fair, and sustainable development by 2024. The government’s policy priorities include persistent efforts to accelerate the development of human capital, improve infrastructure and connectivity, simplify regulations and bureaucracy, and promote economic transformation.

To close the infrastructure gap, the government plans to mobilize \$450 billion in infrastructure development under the RPJMN. The RPJMN includes targets that represent a continuation and acceleration of current progress, rather than a major change in trend. The adverse impact of COVID-19 means that the topline goals of the RPJMN may be difficult to achieve. The government has established a taskforce on COVID-19 response and economic recovery, which prioritizes health care and social protection systems as well as economic support measures.

Nepal

Key Development Gaps and Potential

The lack of quality infrastructure in Nepal is one of the main impediments to attracting private investment. Despite improvement in the electricity supply since 2016, Nepal is yet to realize its hydropower potential for domestic energy security and exports. Access to electricity has increased, but consumption is low at 146.5 kilowatt-hours per capita in 2014. Domestic demand for electricity is higher than generation capacity, especially during the dry season; the gap is filled with imports from India. Lack of transmission infrastructure hinders investment in the development of new generation capacity, including by independent power producers, as well as cross-border trade. The existing infrastructure is also not adequate to reliably deliver power to consumers.

Road density is low at 479 kilometers per square kilometer. The deterioration of roads, particularly during the monsoon season, and an increase in vehicles contribute to increased fatalities.

Air transport services are limited. The capacity of Tribhuvan International Airport in Kathmandu, the only international airport, is already stretched with 4.3 million international and 2.8 million domestic passengers in 2018, constraining air travel and tourism as well as transport of high-value cargo.



Government Strategy

The government's 15th plan for FY2020–FY2024 is consistent with (i) its long-term vision of “prosperous Nepal, happy Nepali”; (ii) its aim for the country to graduate from least-developed country status by 2022; (iii) its aim for Nepal to be comfortably in the ranks of middle-income countries by 2030; and (iv) achievement of the Sustainable Development Goals (SDGs). The plan's objectives include high and equitable national income; economic and social justice and poverty reduction; human capital development; universal, affordable, and modern infrastructure for connectivity (including urban and rural infrastructure); high and sustainable production and productivity (including increased agriculture productivity); healthy and balanced ecosystem (including resilience to climate change and natural hazards); and good governance.

Technical News/ Articles**FIDIC Asia Pacific – Its relevance to Member Associations****Amitabha Ghoshal**

Asia Pacific region has a special identity historically in terms of its development needs. Most of the countries in this region were recognized as developed countries in the distant past and had been centers of education and culture, as also sources of much sought-after merchandise like silk, textile, spices, precious stones, and rare metals. These countries had symbiotic growth and developed trade and cultural exchange over centuries.

However, the birth of the industrial revolution in some countries of Europe like Great Britain, France, Germany, and Italy, ahead of others, changed the World order. The Jenny's Wheels, Steam Engine, and Internal Combustion Engine made a complete changeover in the way humans developed and lived. The industrial revolution introduced mass-scale production and led to the rapid development of industrial units across Europe. Demands arose for an assured fast supply of raw materials for the industrial capacity to be effectively utilized and at the same time needed consumers for the products from the industry. This situation brought in the need for colonization of countries with resources and over a short period, the countries in the Asia Pacific became victims directly or indirectly.

Most Asian countries like India, Malaysia, Indonesia, and the Indo-China countries became colonies of European nations. Others, like China, Japan, and Thailand, even though not colonized, were affected by this change in World order. Colonization demanded the development of infrastructure as can meet the demands of the industry in a far-away country. Railroads were built for the transfer of raw materials like iron ore, limestone, and coal and not for meeting the demands of the country's population. Wherever such imposed development programs were resisted by the local population, brute force was employed to suppress such demands. For more than 200 years the development inside these countries was stymied and complete overhauling was done to the system of education, administration, and cultural development.

Historical reasons, culminating with two world wars within a span of 30 years, and the gradual development of industries locally brought the end of colonialism, leaving the financially starved Asia Pacific countries to fend for themselves after they secured political independence. Bereft of technical knowledge and trained manpower, the developments essential for survival had to be undertaken by newly created Consultants in these countries, and sometimes with borrowed foreign consultancy at a huge cost. Over the years the local consultancy industry has developed and taken roots. Consultants in most Asia

Pacific countries are striving to become self-reliant and become successful in meeting the demands of the development program in their countries.

In this background, the consultancy industry of those countries in the region, which are highly advanced in knowledge-base, and those trying to catch up to the same level, need close cooperation and interaction. FIDIC Asia Pacific can provide the appropriate platform for interaction between themselves. Similar geographical situations, climate conditions, and geological profiles make the development needs of neighboring often identical. The neighboring countries in the Indian subcontinent, Indo-Chinese countries, and the Borneo region face the same challenges and can certainly benefit from cooperation in the technological field. Again, all these countries can immensely benefit from the experiences of the development programs in China, Japan, Australia, and Korea. New technology like AI, IOT, Big Data analysis can help the transfer of technology and solutions for development programs at a much faster pace.

FIDIC Asia Pacific is destined to become a platform for sharing problem-solving skills and learning from each other in the entire region. This region has become the stage for the fastest infrastructure development globally, and the beginning has been made with the unprecedented development surge in China over the past 20 years. There will be similar growth in the entire region during the coming decades and the need is to achieve the same, fulfilling the goals of sustainable development, for saving the world from the looming environmental disasters.

FIDIC Asia Pacific will have to provide the directions for the future.



HIỆP HỘI TƯ VẤN XÂY DỰNG VIỆT NAM

Vietnam Engineering Consultant Association

Like many countries in the world and in the ASEAN region, Vietnam has been heavily affected by the COVID-19 pandemic, especially the second half of 2021 and the first quarter of 2022. In the technical consulting industry, members of the Vietnam Engineering Consultant Association (VECAS) face many difficulties in performing their business and developing new markets due to social distancing and labor market shortages. Vietnamese Leaders and Government have actively sought all resources to provide and vaccinate against COVID - 19, so far, according to data published by the Ministry of Health of Vietnam, until March 8, 2022, the vaccination rate for people over 18 years old as follows: injecting 2 doses of the vaccine, reaching 99%; Complete 3 doses of vaccine ~ 40%.

From the end of 2021, the Government of Vietnam issued a regulation to change measures to "safe adaptation, flexibility, effective control of COVID-19 epidemic prevention and control", starting a program of economic recovery and development economic - society. In January 2022, the Government of Vietnam issued Resolution 11/NQ-CP dated January 30, 2022 on the Socio-economic Recovery and Development Program and the implementation of the National Assembly's Resolution on fiscal policy, currency support Program. The objective of the Program is to restore and rapidly develop production and business activities, promote growth drivers, prioritize a number of important industries and fields, and strive to achieve the goals of the 2021-2025 period: average GDP growth 6.5 - 7%/year.

For the technical consulting industry, in 2021, the Government of Vietnam promulgates (replaces, amends, supplements) many legal documents on construction on the basis of the Law amending and supplementing a number of articles of the Construction Law promulgated by the National Assembly as:

- Decree 06/2021/ND-CP of the Government detailing a number of contents on quality management, construction construction and maintenance;
- Decree No. 15/2021/ND-CP of the Government detailing a number of contents on construction investment project management;
- Decree No. 50/2021/ND-CP of the Government amending and supplementing a number of articles of the Government's Decree No. 37/2015/ND-CP dated April 22, 2015 detailing construction contracts. construction;
- Decree No. 10/2021/ND-CP of the Government on management of construction investment costs;

- Circular 02/2021/TT-BXD of the Ministry of Construction promulgating national technical regulations on fire safety for houses and works (QCVN 06:2021/BXD).

Therefore, the activities of the Vietnam Engineering Consultant Association focus on organizing online conferences and seminars to disseminate new legal documents to provide useful support to organizations and individuals of members and non-members of VECAS. VECAS regularly maintains online training courses on the FIDIC Contract Forms; organize a Continuing Professional Development Program (CPD) for practicing Architects; granting construction practice certificates to individuals belonging to the VECAS...

In the coming time, some events of VECAS: continue to organize the FIDIC Contract training course under the 2017 Yellow Book (May, 2022) in Ho Chi Minh City; organize a scientific seminar to perform science and technology tasks assigned by the Ministry of Construction on turnkey contracts; organize CPD program for practicing architects; issue construction construction practice certificates to individuals; held the Meeting of the Standing Committee of VECAS in Pleiku City, Gia Lai Province (May, 2022).

For development plans related to technical consulting, on the basis of the Government's National Digital Transformation Program to 2025, with orientation to 2030, the Ministry of Construction of Vietnam has issued the Decision "Approval of plan on digital transformation of the construction industry in the period of 2020 - 2025, with a vision to 2030" in which for example:

- Develop a list and promulgate standards for applying Building Information Modeling (BIM): In 2023, fully promulgate BIM application standards in architectural, structural, infrastructure, and M&E design;

- Develop a process to receive documents, appraise projects designed on the basis of Building Information Modeling (BIM): In 2025, about 10% of construction projects will be deployed on BIM platform, Ministry of Construction, receiving design documents on BIM platform for appraisal by online form (online public service level 4).

The Impact of the Coronavirus on the Global Consulting Industry



Gautam Chheda
Chief Operating Officer (CEO)
Sglobal Acumen Private Limited



Ravindra Shrivastava
Assistant Professor
National Institute of Construction
Management & Research (NICMAR)

The coronavirus pandemic has already had a huge impact on economy in general – something which has of course had a knock-on impact on consulting. Just exactly how much of a dent on the industry’s growth Covid-19 has had is extremely difficult to tell, but in a new forecast, researchers have tried to put a number to the damage, and have found global consulting could lose some \$30 billion of value in 2020.

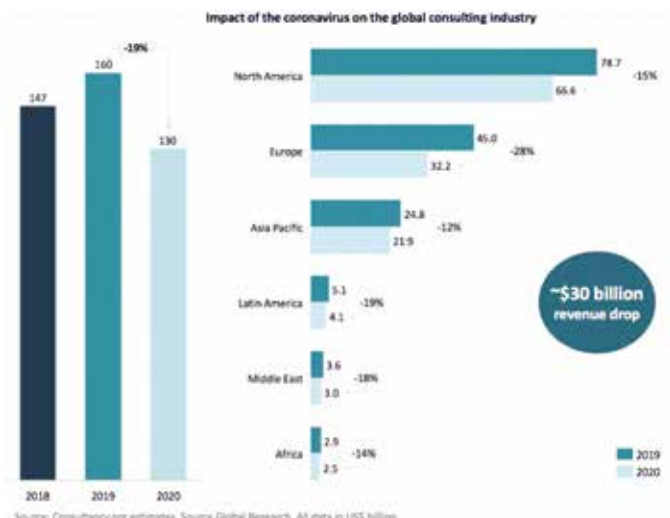
The global consulting industry has grown strongly in the 12 years since the last financial crisis. The planet’s consulting scene is now worth a combined \$160 billion, but with the coronavirus having pushed many sluggish economies to the brink of a recession, clients are delaying projects, decreasing their scope or cancelling them all together. As a result, the revenue of consulting is taking a big hit.

To understand what this impact of this is likely to be, researchers from Source Global Research has gathered the views of hundreds of consulting firms from around the world. The group has subsequently estimated that Covid-19 could reduce the size of the consulting industry by 19%, from \$160 billion in 2019 to \$130 billion in 2020, with the second and third quarter of 2020 expected to be the worst periods for negative growth. While the good news is that Source anticipates a rapid recovery, which will likely commence before the end of the year, there will be large variations across regions, countries, industries and firm types.

Regional breakdown

The world’s largest national consulting market remains the US, which accounts for around half of global consulting demand. So far, the country has only seen a limited level of domestic disruption; but many believe it will quickly catch Europe’s larger Covid-19 cost. While consultants in the region are already taking precautionary steps to mitigate this, Source still anticipates that the North American market will shrink by more than most US and Canadian firms currently expect – possibly by as much as 15%.

On the other side of the Atlantic, feedback from firms in Europe has led Source to estimate that demand across the continent may fall by 28%. The large manufacturing base of German consulting will be particularly impacted



by disrupted supply chains, and could shrink by more than this, along with Britain, where consulting is already experiencing its lowest growth in seven years, and forecasts have notably been downgraded because of Brexit. Italy, the current epicentre of the outbreak in the region, could fall even more sharply.

As was the case after the 2008 global financial crisis, Europe is likely to recover at a slower rate than the US, as American clients tend to show greater willingness to leverage consulting services, and adopt new technology in business. By comparison, Asia is likely to see the lowest impact of any region, due to how effective China was in containing its initial outbreak. As a result, clients in some parts of Asia Pacific are already looking beyond the crisis, albeit cautiously.

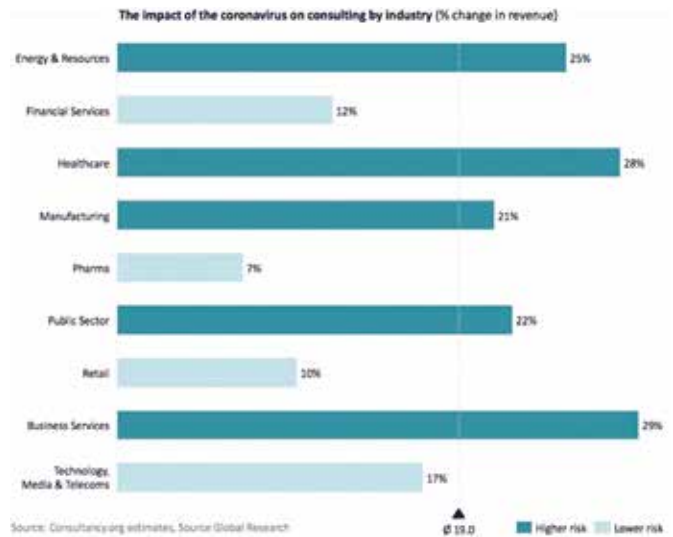
Elsewhere, Latin America is likely to be hit much harder than North America – enduring a drop of 19%. The Middle East is forecast to see a similar 18% shrinkage, while Africa will see its revenue fall by 14%.

Industries

It is important to note that Source’s research features forecasts which are something of a worst-case scenario, and intended to be directional only in helping companies prepare for what may be to come. As with the virus’ spread, everything is changing very quickly, so predictions can and will inevitably change. With that being said, it is already clear that certain industries will not be able to weather the storm as well as others – and this will have a knock-on effect on the consultants offering services to these sectors.

The financial services sector is likely to fare better than most, but will still contract. Contrary to the financial crisis, when they were bailed out, most institutions have improved liquidity. As they are now better capitalised, banks have the buffers to play an active role in supporting the economy back to recovery, meaning banks will be deploying initiatives, and in a continued competitive environment they continue to invest heavily in digitisation.

Private equity firms will also likely continue to invest



in consulting work, as they seek advice on deals in the latter part of the year. Firms in the sector are likely to be very cautious in the short-term, but Source expects they may become more active in Q3, as valuations fall, giving them an opportunity to cheaply buy companies. Elsewhere, the picture is far less rosy, however.

Source’s modelling suggests that the demand in the services sector, which includes leisure and airline companies, will shrink. This can already be seen by the fact many airlines – desperate to negate collapsing incomes – have decided to cull their consulting spend. While this mainstream consulting will be partially offset by a growth in restructuring work, revenues from the sector will still likely take a 29% hit. Relating to this – as travel restraints will see less need to buy fuel – demand in the energy and resources sector is also likely to drop dramatically. Lower oil prices will be a key factor, with consultants in the sector seeing revenues fall by a quarter as a result.

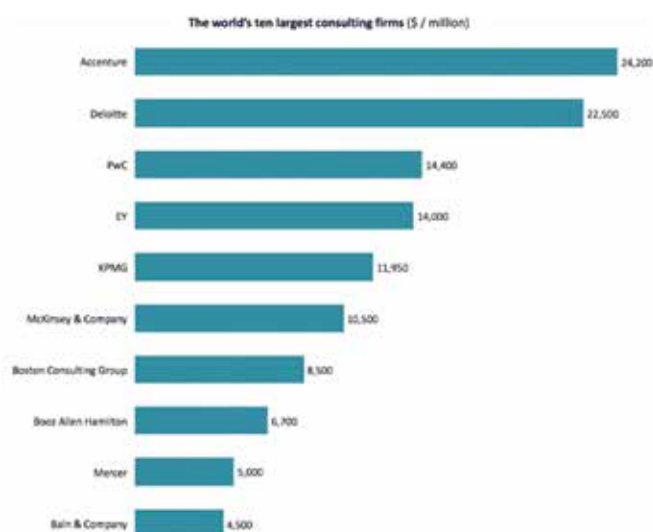
Oddly enough, amid the strain the Covid-19 crisis is placing on public healthcare, consulting in health is likely to see a precipitous drop in demand. While consultants have repeatedly trumpeted their importance in the sector when it comes to saving resources, improving patient experience and doing more with less, when push comes to shove most healthcare clients will not see value in allocating resources to consultants at this time.

The more urgent matters of treating the virus will see a big drop in revenues here, and whether they recover depends on whether the sudden strain placed on underfunded healthcare systems prompts governments to row back on their policy of privatising such systems. If there is such a change, then adequately resourced health systems may have less demand for consultants to help them scrimp and save. If the world does see a return to business as usual, however, consultants will undoubtedly be called in to help hospitals address the severe lack of capacity exposed by Covid-19.

The prospects for public sector consulting more broadly are likely to vary by country. Some firms are already reporting projects being put on hold as time and money is focused elsewhere, but others are continuing, especially where long-term technology projects are concerned.

Firm Types

The exposure of individual firms will vary based on the services they provide and industries they serve. At a time like this, diversity and the ability to adapt will be critical. As a result, multi-faceted firms which cater to various clients will undoubtedly come out of this crisis in the strongest position. However, for firms of all sizes, the key challenge will be how effectively they can rebuild their pipelines and convert sales during what are likely to be at least two very challenging quarters.



Source: Consultancy.org analysis and estimations

The hardest hit services will be those where the work involved involves time on clients' site and travel. Having been booming until very recently, then, change-related work and many aspects of operational improvement are suddenly suffering – particularly in Europe. On the other hand, as the work is often done in the consulting firm's office, strategy work will be less badly affected.

Another form of work to survive relatively unscathed will be long-term technology projects. Again, because so much of the work can be delivered remotely, this work can continue despite travel disruption. At the same time, as many of these long-term projects will have already begun, clients will be reluctant to shelve them at this point and lose the investment they've already made.

Again, this state of affairs will suit large firms best, as they tend to have the reputational clout to attract the biggest and longest projects, which clients are more reluctant to cancel. Brand recognition is a massive advantage at times like these; as was the case during the global financial crisis, clients will only invest in consulting during periods of economic upheaval if the work is delivered by a major firm. Meanwhile, smaller firms may further suffer as the market's largest competitors can afford to cut their rates, eating into the market share of the challengers who had so recently disrupted the market with their lower costs.

Coronavirus impact by region

For more information on the impact of the coronavirus on consulting have a look at Consultancy.org's more detailed analysis by region:

- US: coming soon
- Europe: Europe's consulting industry hardest hit by Coronavirus
- UK: UK consultants fear Coronavirus will spark a huge drop in fees
- Netherlands: Consultants vrezen inhuurstop en recessie door coronavirus
- Asia: coming soon
- Middle East: coming soon
- Africa: Africa's consulting market may drop by 14% due to Coronavirus
- Latin America: Latin America's consulting industry faces hit due to Coronavirus

GOVERNMENT PROCUREMENT: A SOVEREIGN SECURITY IMPERATIVE



Consult Australia's Advocacy Wins

THE INQUIRY

On 31 March 2022, [Government Procurement: A Sovereign Security Imperative](#) was released by the House of Representatives Standing Committee on Infrastructure, Transport and Cities, as the final report into the Inquiry on the Procurement Practices for Government-Funded Infrastructure.

Consult Australia made a written submission to the inquiry in July 2021 and gave evidence at the public hearings in September 2021. We called for procurement reform to help unlock greater productivity for the sector and the economy. The need for reform is essential given major factors including the size and scale of the infrastructure task at hand across Australia and the diminishing health of the industry as a whole.

In the final report, the Committee makes 8 reform recommendations, which reflects most of Consult Australia's recommendations and we are heavily quoted throughout the report, including our push for civil liability reform, de-risking to improve the insurance market, focussing on digital by default and of course collaborative contracting. Our key wins are summarised below.

It is noted that the final report has been commended to the Commonwealth Parliament for review and Consult Australia awaits the government's response to the recommendations. Consult Australia will continue to campaign strongly, including with existing government and shadow Ministers as well as relevant government agencies.

OUR WINS

Improved productivity through better planning and coordination

To uplift productivity, Consult Australia advocated the need to create a more collaborative procurement and contracting framework for the delivery of infrastructure projects. Our comments at the public hearings on a 'go slow to go fast' approach where more is invested up-front for planning and design were quoted in the final report. The Committee endorsed Consult Australia's recommendation for more effective long-term planning and coordination of infrastructure pipelines, with a greater need for stakeholder and industry engagement (see Recommendation 1). The Committee also recommended exploring opportunities for standardisation of like projects (see Recommendation 5).

Practical application of procurement rules to secure best value

Consult Australia highlighted member concerns that lowest price always seems to win over best value. We argued for standardised guidelines for procurement and contracting policies for all agencies. The Committee agreed that despite procurement rules (at all levels of government) stressing the importance of 'value for money', the best value is often overlooked, and lowest price most often wins. The Committee stressed to need to re-examine the practical application of the Commonwealth Procurement Rules (see Recommendation 2) including how the Commonwealth Procurement Rules sit with similar rules in each state and territory and the need to verify value for money (see Recommendation 4).

De-risking of the industry for delivery

Given the current issues faced in the insurance market, Consult Australia called for the de-risking of the industry, including through a range of statutory reforms, and ensuring the Model Client Policy practices are followed. We are quoted in the report highlighting that the level of risk transfer is breeding a culture of disputation rather than collaboration. The Committee recommended a review of the insurance market through improved procurement practices to protect the small and medium enterprise businesses (see Recommendation 6).

GOVERNMENT PROCUREMENT: A SOVEREIGN SECURITY IMPERATIVE



Consult Australia's Advocacy Wins

✓ **Training the public service to support best practice in procurement**

As means of best practice, Consult Australia emphasised the training needs for government procurement officers in areas such as risk assessment and management, insurance, and contract management. The Committee agreed that opportunities should be explored to support the guidance and training for officers and that necessary approaches be adopted to maximise industry engagement (see Recommendation 2).

✓ **Increasing access to the infrastructure pipeline**

Consult Australia highlighted the need to adopt a smarter approach to the pipeline of projects that will contribute towards transparency and greater economic prosperity. The Committee recommended that methods be explored to maximise developing the sovereign capacity in infrastructure delivery, such as breaking up major projects into packages and partner/joint venture contracts between tier one and non-tier one companies, amongst other initiatives (see Recommendation 6).

✓ **Digital by default**

To drive innovation, Consult Australia highlighted the importance of digital transformation to enhance efficiency and productivity. The Committee agreed that a digital by default approach be adopted to facilitate the planning and post-delivery of infrastructure projects, that will help manage project risks and deliver Building Information Modelling (BIM) (see Recommendation 7).

✓ **Civil liability reform**

Consult Australia called out government as being amongst the worst clients, contracting out of proportionate liability and the Committee Report has a dedicated a section on this, setting out our arguments. These reforms could be seen as part of Recommendation 6 on ways to provide more opportunities in procurement and contracting to more businesses and reviewing market conditions.

✓ **The role of the Commonwealth to drive improvements at all government levels**

We know that while the Commonwealth government provides funds to carry out projects at the state/territory as well as local council level, there is generally limited control over the practices and behaviours of non-Commonwealth governments. Importantly, the Committee recognised the significant barrier to change this causes, and throughout the final report stressed the need for the Commonwealth government to drive change through all levels of government. Only by investing at changes at all levels will Australia see the productivity growth needed to deliver the infrastructure projects currently in the pipeline across the nation.

NEXT STEPS

Consult Australia will continue to lobby government at all levels in its effort to enhance procurement practices for government-funded infrastructure. This inquiry report cannot be another one left on the shelf with no outcomes realised, otherwise there is a real and present danger that the current pipeline of infrastructure projects will not be realised.

Upcoming Events

FIDIC	FIDIC Federation Program September 2022 (details on next page)
FIDIC-Africa	
Australia	<ul style="list-style-type: none"> • Contracts for Consultants – 23rd and 24th June 2022 (Online) • Role of the Superintendent – 27th June 2022 (Online)
India	<ul style="list-style-type: none"> • Seminar on ‘Multi Modal Integration for Transport Network’ on 27th May 2022 • Webinar on Ethics and Integrity- 3rd June 2022 (online)
Thailand	<ul style="list-style-type: none"> • Meeting for BIM Contract on every other Friday. • Meeting for Government procurement law on every other Friday. • Meeting with other engineering and architectural associations every other month.



FIDIC FEDERATION PROGRAMME September 2022

08.30 – 18.00	FIDIC Board Meeting (Day 1 + Day 2) Thursday 08 and Friday 09 September 2022
13.00 – 17.25	FIDIC Future Leaders Management Certificate courses (Day 1 + Day 2) Friday 09 and Saturday 10 September 2022
09.00 – 13.00	FIDIC DNS Meeting Saturday, 10 September 2022 FIDIC DNS Meeting Open to Director and Secretaries of FIDIC Member Associations Moderator: Chris Campbell, South Africa (FIDIC DNSAC Chair) Speakers: FIDIC Member Association Directors and Secretaries
13.30 – 14.30	FIDIC Presidents Meeting Saturday, 10 September 2022 FIDIC Presidents Meeting Open to Presidents and elected leaders of FIDIC Member Associations <i>FIDIC Governance and Strategic direction</i> Moderator: Anthony Barry, FIDIC President Participants: FIDIC Member Association Presidents and Chairpersons
19.30 – 22.30	FIDIC DNS Dinner Saturday, 10 September 2022 Only MA reps and accompanying persons
11.30 – 13.00	FIDIC Committee Chairs Meeting Sunday, 11 September 2022 FIDIC Committee Chairs Meeting Open discussions among Chairs and Vice Chairs of FIDIC Committees and invited speakers Introduction: Dr Nelson Ogunshakin OBE, FIDIC CEO Moderator: Catherine Karakatsanis, FIDIC Vice President and Chair of the FIDIC Chairpersons Meeting Speakers: FIDIC Committee Chairs and Vice Chairs Participants: FIDIC member association representatives, associate members, affiliates, committee members, staff working in member firms, regional group representatives, FIDIC Board members and Past Presidents.
13.30 – 14.30	FIDIC Future Leaders Symposium Sunday, 11 September 2022
14.45 – 15.15	FIDIC Recognition of Participants FLMC Programme Sunday, 11 September 2022
19.00 – 22.00	Welcome Reception Sunday, 11 September 2022
09.00 – 17.00	<u>FIDIC CONFERENCE DAY 1</u> Monday, 12 September 2022 Welcome & Opening Remark
19.00 – 23.30	<u>Gala Dinner & Awards Ceremony</u> Monday, 12 September 2022
09.00 – 16.30	<u>FIDIC CONFERENCE DAY 2</u> Tuesday, 13 September 2022
17.30 – 18.30	<u>FIDIC GENERAL ASSEMBLY MEETING 2022 (GAM)</u> Tuesday, 13 September 2022 Event online - ZOOM
	Open to FIDIC Member Association delegates only Observers can attend upon registration (Past Presidents, MA staff, FIDIC Associates and Affiliates) Registration is required on ZOOM
19.45 – 23.00	FIDIC Local Colour Night Tuesday, 13 September 2022

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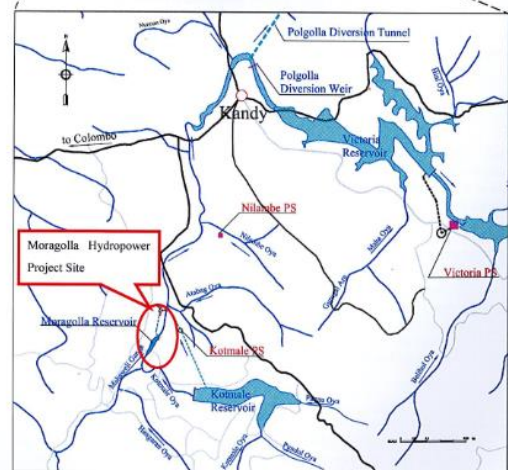
Securing Biodiversity while achieving National Development Goals

Onsite Fish Relocation and Securing Habitats of Endemic, Endangers Species of Fish in Project Stretch of Mahaweli River

Moragolla Hydropower Project, Sri Lanka



Project Location



Present Status of Moragolla Dam Foundation Excavation - January 2022

Moragolla Hydropower Project (MHP) is one of several hydropower projects identified by the Government of Sri Lanka to reduce the role of fossil –fuel power generation, which has outstripped hydropower over the past 30 years as readily exploitable location have been utilized. The Executing Agency of the project is the Ministry of Power, Sri Lanka and the Implementing Agency is Ceylon Electricity Board. Financial assistance is given by the Asian Development Bank.

The MHP will have 236 m long concrete gravity dam with a maximum height of 37 m (standing from foundation level). The crest level will be 550 m from mean sea level (MSL). Diverted water from the Moragolla dam will flows through 2.7 km long, 4.7 m diameter underground headrace tunnel, surge tank and penstock o the left bank to surface powerhouse and 28 m open-channel tailrace outfall to Mahaweli river itself.

MHP is designed as a run-of-river scheme, with an installed capacity of 30.2 MW and the dam includes a pipe to discharge a constant “Environmental Flow” of 1.5 m³/s, which will pass through a micro-hydro plant on the right bank of the river generating an additional 360 kW of electricity. All together the MHP contributes 100 GWh of green energy to the national grid of Sri Lanka at its operation.

***Labeo fisheri* in Sri Lanka**

Labeo fisheri is restricted to the upper and middle reaches of the Mahaweli river basin. It also includes tributaries that originate from the Knuckles mountain area. Throughout its range in the Mahaweli river basin, several localized populations can be found. The lowest elevation where it was recorded is about 80 mean sea level at Angammedilla, Polonnaruwa. The highest elevation is about 750 m MSL at Inguru oya, above Nawalapitya (Goonatilake *et al.*, 2020). There are number of confirmed locations in between these elevations where *Labeo fisheri* is recorded although the precise habitat area occupied by the species is only 35.22 km². Main locations include Ulapane, Nawalapitiya, Kothmale, Atabage, Gatambe, Digana, Polgolla, Lewella, Adikarapura, Victoria, Badulu oya, Heen Ganga, Handungamuwa, Laggala Pallegama, Hatthota-amuna anicut, Kumara ella, Sulugune, Angamadilla, Minipe anicut and Dandenikumbura. There is a significant protected area coverage for *Labeo fisheri* habitats (IUCN, 2019). They are rarely found at same locations due to the over exploitation by fishermen along the river (Goonatilake *et al.*, 2020).

Habitats and Ecology of *Labeo fisheri*

Labeo fisheri is a fast swimmer where adults show a preference to deep rocky water pools. It is recorded in both clear waters well as in the turbid waters. Adults are observed at about 1m deep rapids among large rocks and boulders. Nevertheless, juveniles and semi-adults were more common in shallow regions with a moderate, non-turbulent flow with sandy or rocky substrate. In Moragolla, adults were recorded from dark crevices in deep rocky pools (Goonatilake *et al.*,2020).

Labeo fisheri is herbivore, mainly feeding on diatoms and algae. They feed algae on submerged rocks during the daytime. It has shown that juveniles are frequently found in shallow areas where the rocky substratum supports aquatic plant *Farmeria metzgerioides* (Family: Podostemaceae). Adult fish were observed to display schooling behavior with *Tor khudree*, *Puntius dorsalis* and *Systomus martenstyni* (Goonatilake *et al.*, 2020).

Status of *Labeo fisheri*

In 2012, the *Labeo fisheri* listed as the critically endangered fish. However, it was listed as endangered fish since 2020 (Goonatilake *et al.*, 2020). It appears at several localized populations throughout its range in the Mahaweli river basin during past years compared to the early 2012. However, large number of populations were not recorded in any of these localities (NARA, 2017; Sudasinghe *et al.*, 2018; Goonatilake *et al.*, 2020). During the NARA survey carried out in 2017, population density of *Labeo fisheri* has been estimated at Moragolla area and Heen Ganga were 158±14 individuals over a 3 km stretch and 272±3 individuals over a 1.5 km stretch respectively. Therefore, the estimated population size

per 1 km² ranges between 510 and 1942 individuals. Hence, the total estimated population, based on the currently known area of occupancy (35.15 km²) for this species ranges between 17915 and 68291 individuals (IUCN,2019; Goonatilake *et al.*, 2020).

Fish survey conducted by NARA (2017) have identified ten locations along 3 km stretch of river in Moragolla area supporting a breeding population of *Labeo fisheri*. Five of these locations are located above the proposed Moragolla dam site and seven locations are located below the dam. Soil erosion due to anthropogenic activities causes their feeding grounds to be covered with mud. Algae and plant *Farmeria metzgerioides* grown on rocks and boulders are affected by this. Still in the locations where it is recoded in relatively large numbers are being subjected to fishing and destructive fishing practices such as using fish poison and explosives. These are observed to be significant threats to the species (Goonatilake *et al.*, 2020).

Site of relocation

Dandu-kelina-wala (pool ii) was identified as a breeding ground, which bears large number of individuals of *Labeo fisheri* by NARA, 2017. *Dandu-kelina-wala* has several deep rocky pools. The deepest point of this pool is 10 m. It provides ideal habitat for *Labeo fisheri*. It is closer to the construction site of Moragolla hydropower project. NARA assume that this breeding population could have affected by the construction work carried out at Moragolla hydropower. So as previously agree, all fishes in the *Dandu-kelina-wala* (pool ii) were relocated to the *Dunhinda* area (pool iv). *Dunhinna* is quite similar to the *Dandu-kelina-wala* pool. It is located nearly 1.4 km from the construction site and 0.8 km from the *Dandu-kelina-wala*.

Methodology

Spot catching was done using cast net throughout the pool. The trammel net and bottom set gill net were set to covering large area of the pool. After 1.5 hours, these nets were dragged up. The entangled fish were carefully released from the nets. Then the fish were brought to the bank with aid of pool water filled polythene bags. They were identified using standard field guides. Abundance, Length, weight, sex, and the health condition of *Labeo fisheri* were recorded. For all the other fish species, only the abundance and the health conditions were recorded on site. They were placed in the pool water filled polythene bags while supplying the oxygen. Then fish were transported carefully to pool iv under the supervision of fish experts, Chinese agents and the wildlife officers. This method was repeated several times per day for all the fish species those were caught from the *Dandu-kelina-wala* pool. The relocated site is scheduled to be monitored routinely.



Activity of fish relocation at the *Dandu-kelina-wala* area



Captured and relocated *Labeo fisheri* from the *Dandu-kelina-wala* area

Relocation of other species of fish

A total 229 individuals belonging to 11 species and 3 fish families were relocated within 4 days of sampling. Only six individuals were damaged during the relocation program. A 54% of the species that were relocated was endemic to Sri Lanka while all others were native to Sri Lanka. The occurrence and the wide distribution of the endemic and nationally threatened fish species along the Mahaweli river is considered to be a discrete ichthyological province within Sri Lanka (Senanayake, 1980). Most of the caught fish were belong to family cyprinidae. The highly abundant species were *Dawkinsia singhala* and *Devario malabaricus*. Most of the individuals belong to *Labeo fisheri* and *Tor khudree* were the sub adults and adults with large body size. Large number of sub adult *Tor khudree*, which swims upstream to spawn, has also been relocated from this pool. Other endemic fish species encountered, including *Garra ceylonensis*, *Ompok argestes*, *Pethia nigrofasciata* and *Systemus spilurus* occurred at comparatively low abundance.

Pethia nigrofasciata, which were introduced to the Mahaweli river basin near Ginigathhena (upstream of the Moragolla) (Senanayake, 1980) was relocated from this pool. These introductions were made in an effort to conserve these species. *Pethia nigrofasciata* occur in the project area, suggesting that they have dispersed downstream from their entry point and obviously have survived the relocations.

The process of capturing and relocating have been done carefully. Almost all the time, the entangled fish into the nets were removed by cutting the nets. Only 6 individuals of the *Devario malabaricus* and *Tor khudree* were slightly damaged. Their behaviors were continuously monitored and make sure that they were able to survive in the natural habitat after relocating.

REFERENCES

- Goonatilake, S. De A., Fernando, M., Kotagama, O., Perera, N., Vidanage, S., Weerakoon, D., Daniels, A.G. and L. Máiz-Tomé (2020). The National Red List of Sri Lanka: Assessment of the Threat Status of the Freshwater Fishes of Sri Lanka 2020 Colombo: IUCN, International Union for Conservation of Nature, Sri Lanka and the Biodiversity Secretariat, Ministry of Environment and Wildlife Resources. xv + 106 pp
- IUCN final report (2019). Labeo fisheri Critical habitat assessment as a stand-alone report to be appended to the updated environment impact assessment of Moragolla hydropower project, Sri Lanka
- Senanayake, R. (1980) The biogeography and ecology of the inland fishes of Sri Lanka. PhD dissertation (unpublished), University of California. 421pp.
- Sudasinghe H., Ranasinghe R.H.T., Goonatilake S. de. A. and Meegaskumbura M. (2018). A review of the genus Labeo (Teleostei: Cyprinidae) in Sri Lanka. Journal of Zootaxa. 4486(3): 201–235
- National Aquatic Resources Research and Development Agency (2017). Report on surveying of Labeo fisheri in Mahaweli river at Moragolla Hydropower Project area. Performance report – Fish survey.
- R Core Team (2014). A language and environment for statistical computing. R foundation for statistical computing, Vienna, Austria

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Member News

Board member of FIDIC, Dr Sarwano Hardjomuljadi from Indonesia, has been conferred Al Mathews Award for Dispute Board Excellence for his contributions in the field of dispute resolution. Dr. Sarwano is a world known expert in dispute resolution. He is an advisor of FIDIC Asia Pacific on behalf of FIDIC.



Congratulations..!



The Editorial Board conveys heartfelt congratulations to him on this achievement!

GDP Growth Rate and Inflation for Asia Pacific Countries

Country	GDP Growth, % per year				Inflation, % per year			
	2020	2021	2022	2023	2020	2021	2022	2023
Australia	-2.2	4.7	3.1					
Azerbaijan	-4.3	5.6	3.7	2.8	2.8	6.7	7.0	5.3
Bangladesh	3.4	6.9	6.9	7.1	5.7	5.6	6.0	5.9
China	2.2	8.1	5.0	4.8	2.5	0.9	2.3	2.0
China, Hong Kong	-6.5	6.4	2.0	3.7	0.3	1.6	2.3	2.0
China, Taiwan	3.4	6.4	3.8	3.0	-0.2	2.0	1.9	1.6
India	-6.6	8.9	7.5	8.0	6.2	5.4	5.8	5.0
Indonesia	-2.1	3.7	5.0	5.2	2.0	1.6	3.6	3.0
Islamic Republic of Iran	1.8	4.0	3.0					
Japan	-4.5	1.7	2.7	1.8	0.7	3.3	4.8	2.1
Kazakhstan	-2.5	4.0	3.2	3.9	6.8	8.0	7.8	6.4
Malaysia	-5.6	3.1	6.0	5.4	-1.1	2.5	3.0	2.5
Mongolia	-4.6	1.4	2.3	5.6	3.7	7.1	12.4	9.3
Nepal	-2.1	2.3	3.9	5.0	6.2	3.6	6.5	6.2
New Zealand	-0.9	5.0						
Pakistan	-1.0	5.6	4.0	4.5	10.7	8.9	11.0	8.5
Philippines	-9.6	5.6	6.0	6.3	2.4	3.9	4.2	3.5
Republic of Korea	-0.9	4.0	3.0	2.6	0.5	2.5	3.2	2.0
Singapore	-4.1	7.6	4.3	3.2	-0.2	2.3	3.0	2.3
Sri Lanka	-3.6	3.7	2.4	2.5	4.6	6.0	13.3	6.7
Thailand	-6.2	1.6	3.0	4.5	-0.8	1.2	3.3	2.2
Uzbekistan	1.9	7.4	4.0	4.5	12.9	10.7	9.0	8.0
Viet Nam	2.9	2.6	6.5	6.7	3.2	1.8	3.8	4.0