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Trans-Asian Railway Network: A Get way to the East and West to Attain Sustainable Development Goals

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Abstract: *The Trans-Asian Railway is a significant regional transport cooperation initiative aimed at enhancing the operational efficiency, economic relevance and commercial utilization of Asia's rail transport infrastructure. This network is being developed in parallel with the Asian Highway network and related policy measures in the area of transport facilitation. TAR aims to facilitate international trade, in particular, provide access to the main international ports for the landlocked countries of the region for the establishment of efficient transshipment facilities. Its main objectives consist of providing a connection between Asia and Europe, as well as improving access to ports in the Asian countries without sea access. Globalization of industries in different countries substantially increased the volume of intra-industrial trade as well as the demand for international transportation. The fast-growing garment-industry in Bangladesh is creating increasing demand for intercountry transportation of raw materials, intermediate products and finished goods. This study aims to assist in providing a global picture of the future regional rail-network best able to serve anticipated trade patterns, while offering alternative transport options for existing flows. In addition, by utilizing the long-distance competitive advantage of rail transport, the TAR has a major role to play in bringing a more even distribution of economic opportunities and benefits.*

Keywords: *TAR - Trans-Asian Railway, ALTID – 'Asian Land Transport Infrastructure Development', ESCAP – 'Economic and Social Commission for Asia and the Pacific', BYIMT- Bangladesh, Yunnan, India, Myanmar and Thailand, BIMSTEC – 'Bay of Bengal Initiative for Multi-Sectoral, Technical and Economic Cooperation'*

I. Introduction

"The formalization/articulation of the Trans-Asian Railway network in an inter-governmental agreement that entered into force in 2009 was set to promote a wider use of rail transport through the development and operation of rail-based international intermodal corridors. These corridors, which are of critical importance for land locked countries, are also a key element in advancing towards a more sustainable transport sector. The TAR network now comprises 117,500 km of railway-lines serving 28 member countries. Much like yesterday's Silk Road, today's Trans-Asian Railway aims to serve cultural exchanges and trade within Asia and between Asia and Europe." **[www.railwaygazette.com]**

However, the network covers a much wider territory than its legendary predecessor and reaches a much larger population. Under globalization, national economies have become interdependent and the benefits of recent economic development have mostly benefited coastal areas, the key objectives behind the development and operationalization of the network is to:

(i) Promote regional economic integration through enhanced international trade and tourism,

(ii) Put in place transport infrastructure of adequate territorial coverage and providing quality services likely to attract the establishment of industry,

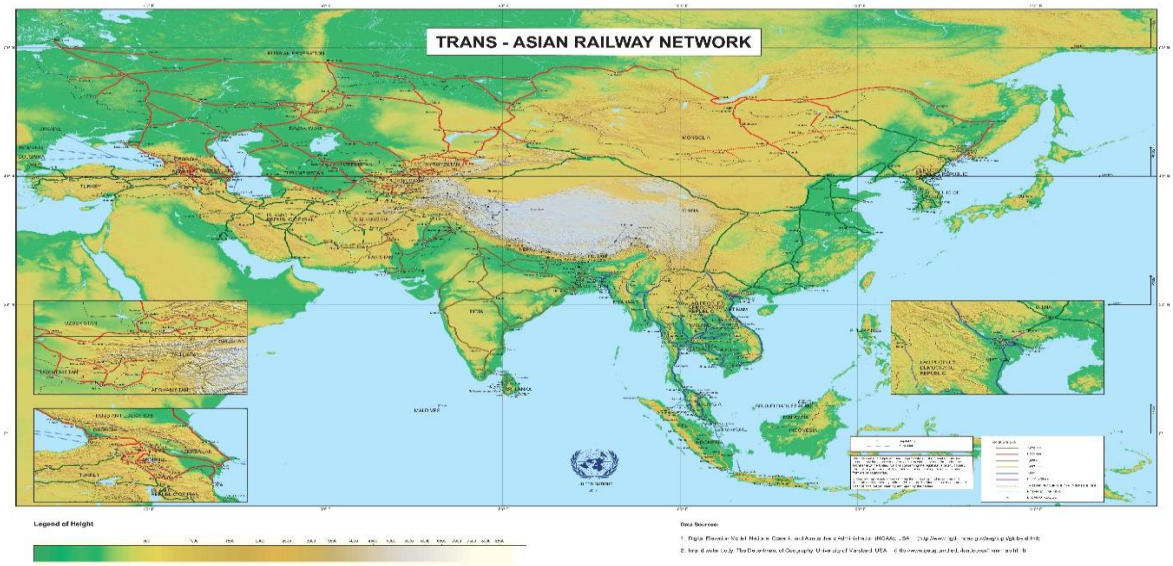
(iii) Serve the manufacturing base of the continent by meeting the requirements of efficient logistics

(iv) Distribute the benefits of growth throughout the breadth and length of the Asian continent.

Over the last 20 years Asian countries have emerged as low-cost manufacturing hubs aimed for export. "However, the situation is changing and Asian countries are developing domestic industries. In addition, the growing number of affluent people in Asia is boosting demand for imported goods from Europe, in turn changing the trade structure. These changes are also having an impact on logistics.

As trade structure is changing, new modes of transportation between Asia and Europe are being developed. TAR, supported by the United Nation, is the most representative initiative for boosting operational efficiency, economic relevance and commercial use of the railway transport infrastructure. The TAR aims to provide six efficient freight and passenger transport services between Asia and Europe." **[www.railwaygazette.com]**

Figure - 1



Source: www.unescap.org

1.1 Statement of the Problem

"In the globalization context, national economies have become interdependent; the key objectives that have been the foundation of the Asian network development have mainly referred to promote regional economic integration through intense international trade and tourism, to an improved territorial coverage of railway infrastructure and to provide quality services that would attract the stabilization of industry, as well as for supporting the continent's production component by observing logistics efficiency demands." **[Interfax China, 2006]**

1.1 Objective of the study

Initial objective is to determine the origin, connectivity, current status of the TAR. Beside that this study tries to find out the development potential with economic impact of this project.

II. Review of Literature

Former **Finance Minister S. A. M. S. Kibria** called for "accelerating the process of linking the economies of Asia and Europe through such projects as the TAR. He observed that Bangladesh has the opportunity of serving as the link between South Asia as well as East Asia and that such a unique opportunity should be fully utilized. He said TAR will not only establish international railway links between the countries, but also help the land locked countries in Central Asia to expand trade and commerce. Moreover, the transportation of goods will be faster and more cost effective**." [Raihan, CPD Report, 1999]**

Mr. Kibria stated that the international railway-link establishment was not a new idea. "But the proposal was stalled because of political problems and the armed conflicts prevailing in some Asian countries. He pointed that neighboring Myanmar, which had in the past rejected the proposal for letting the TAR pass through its territory has now fully associated itself with the ALTID Program." **[Raihan, CPD Report, 1999]**

Dr. Rahmatullah pointed out that "the controversial issues could be settled amicably and that the meeting of officials of SAARC to address the issue of the TAR route had set up a sub-committee to establish an agreed route for TAR between Nepal and Bangladesh. Describing the outcome of the expert group meeting (EGM) Dr. Rahmatullah said the EGM adopted an action plan to follow up the various recommendations already put forward. He said all countries expressed their willingness and interest to operationalize the routes wherever available." **[CPD Report, 1999]**

Former Ambassador Rezaul Karim raised a question about the justification of allowing the entry of the TAR as also the Highway from North-eastern India instead of running direct from Bangladesh to Myanmar. He also sought to ensure "if the authorities have calculated the economic benefits that would accrue to the nation or are they only speaking on the basis of some estimates having no reliable basis." **[Justania, 2014]** ESCAP prepared a study to quantify the benefits along with a recommendation of structural development of new roads, ports and other facilities.

Member of Parliament Mr. Hasanul Haq Inu argued that "several measures need to be undertaken in order to make the ALTID project viable. These measures include development of an inland container depot, development of container handling facilities, computerization, tariff setting, upgrading Asian Highways, ensuring safety measures etc. He also noted that there are many socio-political problems which are to be handled effectively to ensure the successful implementation of this project." **[Justania, 2014]**

Professor Rehman Sobhan argued for a joint initiative by Bangladesh and Myanmar to approach ADB and other donor agencies for the development of infrastructure in Myanmar so that there could be direct road and rail links between Bangladesh and Myanmar. He said "because of the issue of the repression of democracy in Myanmar it had been cut off from aid inflows for some time. This lack of aid as well as foreign investment would compromise the speed with which it could build up its land infrastructure linkages with Bangladesh." **[Rehman, CPD Report, 1999]**

Former Minister of Foreign Affairs, Abul Hassan Chowdhury urged that "some outstanding problems should not be allowed to stall the progress of development of the regional rail and road network. He argued that problems need to be addressed within a wider context. He said the regional forum BIMSTEC which has been set up to promote economic cooperation had been keeping an eye on the ALTID program and has recognized that the economic development of the region will receive a new boost from the integration of the rail and road network of the region. He observed that trade and other exchanges are already taking place between the countries of the region on a wider scale than it was anticipated and the integration of the communication system will create new possibilities for the common people and the private sector availing of its benefits. Tourism will develop and the governments would get more revenue by encouraging official trade to replace informal trade he maintained." **[Khan, CPD Report, 1999]**

III. Methodology, Data Collection & Limitations

Basically, this is content analysis of descriptive research format. Secondary data are absorbed from related books, reports, journals, websites etc.

The major constraints are unavailability and inconsistency of appropriate data alongside the lack of time & resources.

IV. Findings

"With the advent of TAR, the Asian economic region can emerge as a new and dynamic growth zone, through a process of greater economic integration. As part of this integration process the role of TAR is likely to be crucial in facilitating the emergence of a unified growth zone and market where investment and production decisions can aspire to encompass the entire region. The dissolution of trade barriers, reinforced by uninterrupted opportunities for physical access are likely to have a transformant impact on the more backward and landlocked countries/regions within BYIMT, such as Bangladesh, Yunnan, the North Eastern States of India, Myanmar and Thailand." **[Frederic, 2019]** "The gradual integration of these economies, with their adjacent regions and beyond to the larger more diversified economies of Thailand, China and India is expected to contribute to dynamizing the process of investment growth, leading to economic diversification and sustained economic development of the underdeveloped areas. The physical integration of these marginalized countries/regions of eastern Asia with the more dynamic and larger economies of Asia, and through them with the global economy, adds up to more than the sum of its parts." **[ITJ, 2019]**

4.1 Origin

From historical perspective, "China's 'One Belt, One Road' was initially seeks to accommodate the development of its neighboring nations and create a new corridor for international economic cooperation. 'One Belt, One Road' seeks to accommodate the development strategies of neighboring nations, create a new corridor for international economic cooperation, and put into place a smooth and efficient regional thorough fare. Southeast Asia is the prime route for the 21st Century Maritime Silk Road to take, with "One Belt, One Road" being argued to be complementary to the ASEAN Economic Community. The TAR is part of this vision." **[Renliang, 2016]**

"TAR network has historical antecedents which have already put in place a transport infrastructure across back to the colonial era. This infrastructure has atrophied over the years due to the compulsions of politics. By the initiatives of United Nations this scenario has been changed significantly." **[Abdul, 2018]**

'Asia's Land Transportation Infrastructure' (ALTI) process is itself part of an ongoing program at the 'United Nations Economic and Social Commission for the Asia and Pacific' (UNESCAP) known as the 'Asia Land Transportation Infrastructure Development' program. This program is established for extending Asian Highway and TAR network from South-East Asia, through South Asia to Central Asia and beyond to Europe. ESCAP, at its forty-eighth session, launched the TAR initiative in 1992.

4.2 Agreement

'Trans-Asian Railway Network Agreement' is signed on November 10, 2006, by 17 Asian nations as part of a UNESCAP to build a 'Transcontinental-Railway-Network' between Europe and Pacific ports in China. "The plan has sometimes been called the **'Iron Silk Road'** in reference to the historical 'Silk Road' trade routes. UNESCAP's Transport & Tourism Division began work on the initiative in 1992 when it launched the Asian Land Transport Infrastructure Development project. The agreement formally came into force on June 11, 2009." **[www.unescap.org]**

Intergovernmental Agreement on this Network ensures wider connectivity between countries and sub-regions as well as between the ESCAP region and other economic constituency. "The Agreement was negotiated with the idea that it will play a catalytic role in the coordinated development of railway infrastructure in Asia. Under the terms of Agreement, a 'Working-Group' has been established to consider the implementation of the agreement and consider any amendments proposed. It will meet every two years and be a forum within which

transport policy makers and railway managers will define a common vision, adopt joint program of actions, and identify investment requirements and sources, and benchmark progress." **[www.unescap.org]**

4.3 Project Summary

"The project was initiated in the 1950s, with the objective of providing a continuous 117,500 km rail link between Asia and Europe, with possible further connections to Europe and Africa. At the time shipping and air travel were not as well developed, and the project promised to significantly reduce shipping times and costs between Europe and Asia. Progress in developing the TAR was hindered by political and economic obstacles throughout the 1960s to early 1980s. By the 1990s, the end of the 'Cold War' and normalization of relations between some countries improved the prospects for creating a rail network across the Asian continent."**[GICA, 2018]**

4.4 Connectivity (Railway Routes)

"The TAR was seen as a way to accommodate the huge increases in international trade between Eurasian nations and facilitate the increased movements of goods between countries. It was also seen as a way to improve the economies and accessibility of landlocked countries like Laos, Afghanistan, Mongolia, and the Central Asian republics. Much of the railway network already exists as part of the Eurasian Land Bridge, although some significant gaps remain. For the most part the TAR would not change national gauges; mechanized facilities would be built to move shipping containers from train to train at the breaks of gauge. The network was initially divided into four major components. They are:

(i) A northern corridor connecting the rail networks of China, Kazakhstan, Mongolia, the Russian Federation and the Korean Peninsula.

(ii) A southern corridor connecting Thailand and the southern Chinese province of Yunnan with Turkey through Myanmar, Bangladesh, India, Pakistan, the Islamic Republic of Iran and Sri Lanka.

(iii) A sub regional network covering the ASEAN and Indo-China sub regions, and

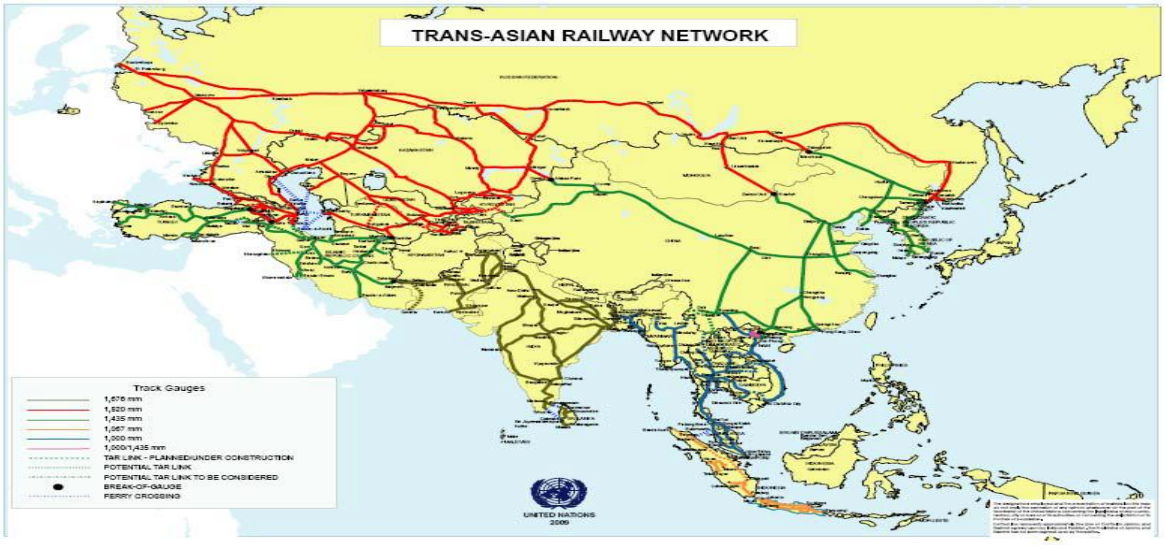
(iv) A north-south corridor linking Northern Europe to the Persian Gulf through the Russian Federation, Central Asia and the Caucasus region." **[ESCAP Report, 1996]**

Table - 1

	Trans-Asian Railway Routes
South-East Asia	Cambodia, Malaysia, Laos, Myanmar, Thailand, Singapore, Viet Nam
North-East Asia	China, Mongolia, South Korea, North Korea, Russian Federation
Central Asia and Caucasus	Armenia, Georgia, Azerbaijan, Kazakhstan, Tajikistan, Kyrgyzstan, Turkmenistan, Uzbekistan
South Asia, plus Iran and Turkey	Bangladesh, India, Nepal, Pakistan, Sri Lanka, Iran, Turkey

Source: www.unescap.org

Figure - 2



Source: researchgate.net.

4.5 Present Status of the TAR

The physical status and operational readiness of the Trans-Asian Railway network vary considerably, both across and within the subregions of Asia. "In its present configuration, the network is a mix of double-track and single-track routes operated under diesel or electric traction and comprising of four main track gauges. Track standards also vary within as well as between countries in terms – among other technical characteristics – of rail weight, ballasting, axle-load, maximum gradient, loading gauge and design speed. In addition, different signal and telecommunication systems are in use and different characteristics are applied in the design of rolling stock." **[Abdul, 2018]**

"The tasks of railway organizations also differ as a direct result of a country's land mass, population, industrial output and the availability and strength of other modes. Consequently, while railways of the region serving both freight and passenger transport, the above elements dictate the share of rail on each market. Finally, it must be noted that in many countries, rail transport also fulfils an important social function by bringing affordable mobility to the less affluent segments of population." **[Capacity Building Seminar, 2018]**

"The commitments shown by participating member countries and their increased investment in rail infrastructure hold significant promise for the development of the TAR network to the level of quality and standards envisaged in the Intergovernmental Agreement on the TAR Network. However, considerable efforts will be required in finding and allocating sufficient financial resources and ensuring a uniformity of standards and an identical level of operational readiness throughout the network." **[www.railjournal.com]**

4.5.1 Technical Requirements

A tertiary requirement of the TAR network is to permit rail conveyance of shipping containers (of all types and sizes either currently used or likely to be used in international trade), at speeds which are competitive with those of alternative transport modes. "The practical implications of this requirement are:

(i) The limiting dimensions of structures throughout this network should be sufficient to allow un-restricted passage of wagons conveying the highest and widest containers used in international trade.

(ii) The maximum allowable 'Axle Loads' throughout this network should be sufficient to allow conveyance of such containers in trainloads of economic size and configuration.

(iii) The maximum allowable line speeds throughout the network must be consistent with the realization of 'Commercial Speeds' which are competitive with those of alternative transport modes." **[TAR Route Requirements, UN, 1999]**

4.5.2 Operational Requirements

Since the container traffic to the TAR network depends on rail being able to deliver a cost effective and reliable service as compared with its competitors in this corridor, "it is essential that any operational impediments to realization of these goals be removed. In this context five factors are important:

(i) Compatibility in terms of the type and design of rolling stock employed by neighboring railway systems in international traffic would ensure rolling stock inter-operability when no break-of-gauge is involved. Ideally, systems should cooperate in the design of exchangeable rolling stock to ensure that only the most efficient designs are adopted;

(ii) Compatibility of train assembly and load scheduling practices between neighboring railway systems;

(iii) The presence of adequate 'Route Capacity' on existing links in the TAR corridor will be essential if the corridor is to meet its objective of providing a cost effective and competitive means for the international transportation of containers; and

(iv) Provision of modern, high speed container transshipment equipment at all break-of-gauge points will be essential to minimize delays. The success of rail in being able to capture additional container traffic for the TAR network will depend heavily on there being adequate capacity for handling containers at rail served terminals in the hinterland and at the major sea ports."**[TAR Route Requirements, UN, 1999]**

4.5.3 Commercial Requirements

"There is no guarantee that the mere availability of a through railway route to Europe will automatically encourage freight shippers based in Kunming or elsewhere throughout the TAR southern corridor to use this route. In making decisions about route and mode choices, shippers will always be guided by their perceptions of the relative cost, standard and reliability of services offered by alternative modes and operators." **[TAR Route Requirements, UN, 1999]**

4.5.4 Transport Facilitation Issues

"It is a valid observation, frequently made, that an absence of adequate and harmonized administrative arrangements governing the passage of traffic across borders has sometimes frustrated the efforts of some railway organizations to develop international container traffic despite their often-heavy investments in handling equipment and servicing facilities at borders. Administrative rules governing border crossing traffic can operate at different levels. At the top level, neighboring countries can be signatories to multilateral agreements and international conventions which guarantee observance of standard procedures for customs clearance and movement of freight consignments across borders." **[OTIF, Work Program 20–21]**

4.6 Funding (Involvement of Donor Group)

"In the light of recent significant developments in trade and economic exchanges among the countries of the sub-region, the donor group is intended to re-evaluate and, as necessary, tore-define the route network in the corridor, as well as to assess an outline plan for its development which will allow to facilitate further inter and intra-regional trade and economic growth." [**Niansong, 2012]**

The countries comprising the southern-corridor (Bangladesh, India, Nepal, Sri Lanka, Pakistan, China, Myanmar, Thailand, Iran and Turkey) actively participated in this network. "While some states are capable of mobilizing the resources to fulfil the obligations of the agreement, other states will need development assistance from multilateral and bilateral donors as well as international financial institutions in order to meet those obligations. Only to build the missing links in the network is an urgent necessity for $24 billion are required." [**Niansong, 2012]**

"In the context of these funding constraints, ESCAP implemented a project with funding provided by South Korea to review the status of development as well as identify investment needs and priorities for the development of the TAR. It was also developed as a tool to evaluate investment requirements along

international corridors and strengthen the case for railway expansion in loan negotiations with financial institutions" such as 'Asian Development Bank', 'European Investment Bank', 'Islamic Development Bank' or 'World Bank'. **[UN Report, 1999]**

4.7 Hindrances to Implement

However, "significant obstacles still prevent the emergence of such corridors. Regional transport infrastructure connectivity, as a fundamental basis for addressing the challenges of regional cooperation and integration, is to be enhanced through continued development, upgrading, planning and operationalization of the transport infrastructure networks in the region and beyond, including through the introduction of new technologies and harmonized operational and technical regional standards." **[OTIF, Work Program 20–21]**

Against this background, ESCAP has been actively engaging with its member countries in identifying areas for joint and coordinated actions aimed at addressing infrastructure requirements, capacity bottlenecks and institutional issues.

4.8 Importance of TAR

In general terms, the development of efficient international rail infrastructure and services within the region is supported by the following elements:

(i) "Twelve of the 30 landlocked countries of the world are located on the Asian continent with the nearest ports often several thousands of kilometers away;
(ii) The distances linking the main origins and destinations, both domestically and internationally, are of a scale on which railways find their full economic justification;
(iii) The reliance on ports to connect national economies to the world's markets with the need to clear landside port areas quickly to avoid congestion, especially in the context of growing containerization and the development of intermodal transport;
(iv) A number of countries are major exporters or importers of mineral resources in the logistic of which rail transport plays a crucial role;
(v) The continuing surge in the volumes of goods being exchanged,
(vi) Increased recognition of rail as an energy-efficient mode of transport,
(vii) Increased recognition of the environmental impact of rail transport on the environment compared with other modes." **[Keizo. 1997]**

4.9 The Development Impact of TAR

"The developmental impact of TAR is grounded in the enormous resource potential of Myanmar, Yunnan Province and North East India, along with the strategic location of Myanmar and Bangladesh within the communication and market chain of the several regions. The underdevelopment and underutilization of the resource potential of these regions, in part originates from their physical isolation, along with the insular policy regimes of some of these countries." **[Frederic, 2019]** "The economic isolation of Myanmar and the physical isolation of the North-East states of India were particularly important in limiting their development potential and have served to aggravate the economic stagnation and social instability prevailing within these resource rich regions. The corresponding impact of physical isolation was much less apparent in the landlocked area of Yunnan province because of its integration into the large and fast-growing economy of China but its resource potential remains underutilized because of the lack of access to markets adjacent to its resource rich areas." **[Capacity Building Seminar, 2018]**

4.9.1 Impact on Economy

The evaluation of TAR network and its' economic impact "makes a distinction between traffic diversion and traffic generation arising out of investments in the TAR system. The traffic generation potential from TAR is likely to be significant for Yunnan, Myanmar, North East India and Bangladesh because of its role in opening up their natural resource frontiers and presenting new market opportunities for these economies."

[Frederic, 2019] "TAR is also expected to enhance opportunities for Myanmar and Bangladesh to establish themselves as entry-pot for serving the cross-Asian traffic by the TAR system and for providing access to landlocked regions, particularly in North East India, to integrate them into a larger market." **[The Daily Star, 2009]**

"The process of economic integration must originate from the opportunities available for trade and the gradual elimination of barriers to such trade. The disruption in the established transport network of the BYIMT region originated from politics rather than economics. The regeneration of these transport links will correspondingly have to address the political constraints which are likely to inhibit the process of transport integration, particularly in South Asia. The significant economic costs imposed on the countries of South-Asia from not being able to dissolve their political inhibitions to the point where they can reintegrate their transport networks with their neighbors." **[www.railjournal.com]**

4.9.2 Promoting Trade through TAR

Trade-levels within the region are flourishing but remain well below the potential. "Intra-BYIMT trade covers only a fraction of the trade of a large externally oriented economy such as Thailand or even large continental economies such as of India and China. In contrast, the less-developed regions within BYIMT such as Myanmar, North East India, and Yunnan have their lower volumes of trade more substantively directed within the BYIMT region whilst even Bangladesh has a growing dependence on imports from India. The limited export capacity and the growing import deficits of the less developed regions with their more developed neighbors within BYIMT need urgent correction through expanding and diversifying their production base." **[CPD Report, 1999]** "Such investments targeted to realize structural diversification of less developed regions remain predicated upon greater market access to the more developed economies of their larger neighbors." **[Business in Asia.com]**

Whereas, market access remains crucially linked to the trade policies of BYIMT, "TAR is like to play an important role in stimulating exports within BYIMT by providing the physical infrastructure for trade as well as reducing transaction and delivery costs. Prospective outside investors seeking opportunities within the less developed regions of BYIMT are likely to make investment decisions based on the prospect of access to such a larger physically integrated market." **[Business in Asia.com]**

4.9.3 The Issue of Market Access

The structural change and growth in the underdeveloped areas within BYIMT had hither too been constrained by the limitations of their domestic market which restricted investment incentives and opportunities in these countries. "The proposition that the physical integration of these marginalized countries/regions of eastern Asia with the more dynamic and larger economies of Asia, and through them with the global economy, adds up to more than the sum of its parts." **[Rishat M, 2003]** Such a process of "physically integrating less developed and more diversified economies is expected to unleash certain economic synergies which could have a transformant impact on the fortunes of those countries/regions linked by the TAR network. The development of the resource potential of the underdeveloped economies within BYIMT along with the widening of their market opportunities and the access of these countries to the capital and skills of its neighbors is expected to provide the basis for their structural transformation, export growth and diversification." **[Business in Asia.com]**

4.10 Political Willingness to Implement the TAR

"The TAR program needs political parentage from an ongoing intergovernmental body willing to invest its political capital in the integration of transport infrastructure. It argues that an inter-regional grouping e.g. BIMSTEC is ideally placed to give political support to any program designed and integrates the transport network of its members." **[OTIF, Work Program 20–21]**

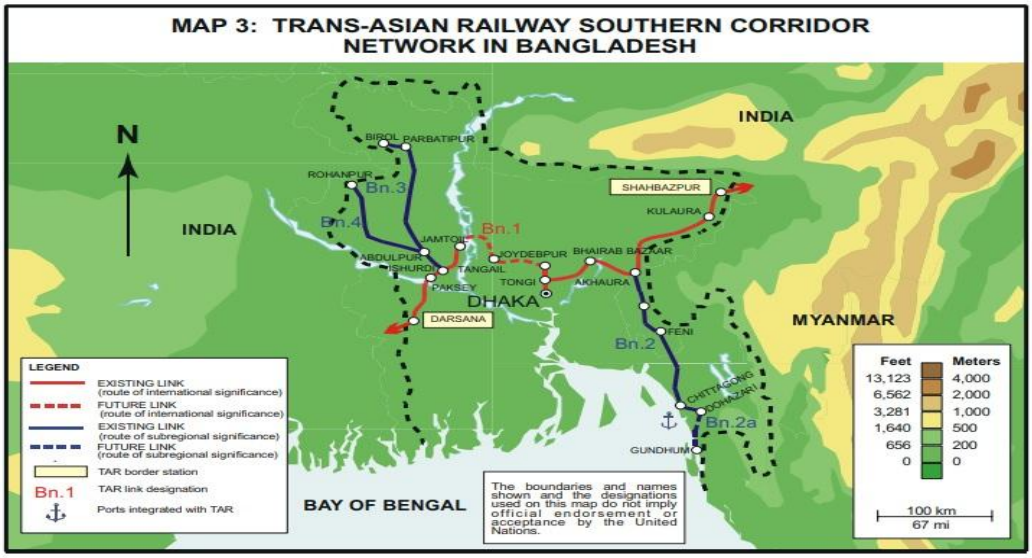
BIMSTEC could thrust the completion of the Asian Highway and "TAR program including the application of facilitation measures needed in order to provide for uninterrupted traffic flows throughout the region. The regeneration of these transport links will correspondingly have to address the political constraints

which are likely to inhibit the process of transport integration, particularly in South Asia." **[OTIF, Work Program 20–21]**

4.11 Impact of TAR on Bangladesh

"Transport corridors are now a days treated as development corridors internationally which open up the opportunity for spatial development. In a multi-modal transport culture nobody will wait for someone hesitating to take timely decision. If a country does not open up its frontier, alternatives will automatically come up. Political fragmentations are not standing on the way of economic integration." **[Abdul, 2018]** This clarifies why so many regional economic groups are evolved and change is being noticed everywhere. "Bangladesh has also a unique position in the TAR regional scenario. It can avail of the opportunity to shortest routes to international and inter-country destinations and hinterland of the region. We should rise to the occasion and play a pivotal role in developing proper understanding amongst the countries concerned to serve the best interest of the countries and their vast population." **[The Daily Star, 2009]** The proposed three routes to be passed through Bangladesh are given in figure-3:

Figure – 3



Source: Bangladesh Railway, Information Book, 2012.

"Bangladesh is also actively pursuing the development of its rail infrastructure with major projects being planned over the entire network. Major projects being considered include the construction of a new rail bridge across the Jamuna River (US$ 200 million) and the construction of a new line between Laksam and Dhaka to reduce overall distance and transit time between the port of Chittagong and the capital (US$ 1 billion). To promote regional economic integration, the Government of Bangladesh is also planning to implement projects aiming to facilitate east-west transit with India.

A project currently considered by Bangladesh Railways is the construction a line section from Dohazari to Ramu and Gundum at the border with Myanmar. At Ramu a line section will go to Cox's Bazar. The project cost is estimated to be US$ 300 million. However, the relevant authorities in Myanmar have not yet developed any specific project to extend their rail network westwards towards Bangladesh." **[Railway Gazette International, 2007]**

Professor Sobhan pointed out that "the developmental impact of TAR is grounded in the enormous resource potential of Myanmar, Yunnan Province and North East India, along with the strategic location of Myanmar and Bangladesh within the communication and market chain of the BYIMT region. He observed that trade levels within the region are growing but remain well below its potential. The limited export capacity and

the growing import deficits of the less developed regions with their more developed neighbors within BYIMT need urgent correction through expanding and diversifying their production base." **[Rehman, CPD Report, 1999]** He argued "such investments targeted to realize structural diversification of less developed regions remain predicated upon greater market access to the more developed economies of their larger neighbors and by improving the transport linkages in the region."

Moreover "TAR is likely to play an important role in stimulating exports within BYIMT by integrating the physical infrastructure for trade as well as reducing transaction and delivery costs. The traffic generation potential from TAR is likely to be significant for Yunnan, Myanmar, North East India and Bangladesh because of its role in opening up their natural resource frontiers and presenting new market opportunities for these economies." **[Rehman, CPD Report, 1999]**

V. Recommendations

"The specific focus on rail infrastructure, countries are also encouraged to integrate projects into the wider planning of their future transport policy to ensure integration with other modes and give due importance to the development of intermodal interfaces." **[ITJ, 2019]** "The main obligations of the contracting parties within the agreement are to:

(a) Adopt the Trans-Asian Railway network as a coordinated plan for the development of railway routes of international importance; and

(b) Bring the network into conformity with a set of guiding principles related to technical characteristics when constructing new lines or upgrading existing ones.

The TAR process is designed to regenerate an extant infrastructure rather than build a new infrastructure within BYIMT. TAR is thus designed to improve facilitation of transport links within BYIMT through removal of the invisible barriers to movement of goods and people across national boundaries." **[Rehman, CPD Report, 1999]** A few missing link in Myanmar and its neighbors, Yunnan, Thailand and the North-Eastern states of India, will require to be covered.

In the context of 'Sustainable Development Goals' on more sustainable cities, a review suggested "the cities of the region to stem the social and economic losses from the burden of increasing congestion and pollution caused by private vehicles. The Review acknowledges the increasing role of intelligent transport systems for urban and inter-city mobility and recognizes the role of rural accessibility as a key component of success in connecting production with consumption to end hunger and promote sustainable agriculture. It also reports the need in further improving road safety, which resulted in social and economic loss from road traffic fatalities." **[Rishat M, 2003]**

Finally, "future investment will need to aim at greater compatibility of operational procedures amongst railway organizations to ensure that the rail infrastructure of individual countries can be grouped into a single network." **[ITJ, 2019]**

Conclusion

In view of continued demand for efficient transport infrastructure and the increasing share of intra-Asian trade in the region's overall exchanges, identifying investment needs for the TAR is an important task for the future and timely development of the network.

"A coordinated plan for the development of railway lines of international importance which countries intend to pursue within their respective national program. In this regard, although many sections of the TAR network are already supporting substantial traffic volumes, more actions need to be undertaken to ensure full network connectivity between countries and subregions and ensure interoperability across border. Although many regional, sub-regional and bilateral initiatives support the development of regional transport infrastructure, countries still face many challenges in mobilizing the resources required for the upgrading and extension of the TAR routes within their territories." **[www.railwaygazette.com]**

In a comprehensive account of the economic and business prospects which the South Asian countries would be able to utilize and benefit from their vast resources by more fully developing the BYIMT region through integrating the land transport infrastructure stretching from China in the east to Turkey and Iran in the

West. "The tide of opportunity which promises to be opened up through integrating the transport system should not be missed on any pretext. To do so would only marginalize the countries such as Bangladesh from the mainstream communications network of the region and would compel it to lose out on the opportunities provided by its strategic location within the land transport network of Asia." **[Khan, 1999]**

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