

# Chapter 6

## Infrastructure Development in East Asia and Cooperation between China and Japan

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## CHAPTER 6

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The infrastructure connectivity plays a special role in the economic development and also in the regional cooperation. Currently, East Asian countries are facing two challenges: one is to stimulate the economic growth in dealing with the effects of the global financial crisis, while another is to restructure the economic development model due to the changed international economic environment. In meeting those two challenges, the regional cooperation in East Asia should play a more active role. As China and Japan are two largest economies in East Asia, they should closely cooperate in both stimulating and restructuring the regional economic development and create a new and sustainable development model.

### **1. Cooperative Mechanism in Regional Infrastructure Development**

ASEAN pioneered the regional cooperation in East Asia. However, the cooperation in whole East Asian region really began only after the 1997 Asian Financial Crisis. Several frameworks form the basis of the cooperation in East Asia, including ASEAN, “10+1”, “10+3”, East Asian Summit (EAS) and the triangular cooperation between China, Japan and Republic of Korea (ROK).

The global financial crisis that began in the end of 2007 puts forward new requirements for cooperation in East Asia. In the current situation of financial crisis, East Asian countries should change their development strategy from an export-oriented growth pattern to a domestic demand led growth pattern. This will

be realized by the enhanced regional cooperation.<sup>19</sup>

All governments in the region have adopted the stimulus macro-economic policy in dealing with the negative effect of the financial crisis. For a longer strategy, the emphasis should be given to improve the internal environment for a sustainable development foundation. Of all measures to realize this, the improvement of transportation infrastructure is of great importance. So that, it is necessary to initiate a region wide infrastructure project, either under “10+3” framework, or EAS framework.<sup>20</sup>

According to the definition provided by Asian Development Bank, regional infrastructure construction is referring to: 1) Programs that crosses two or more neighboring countries and involves mechanical construction work and policies and procedures coordination. 2) A country's internal infrastructure projects have significant cross-border effects: the project's implementation and enforcement requires the cooperation and coordination with other countries; the project aims at promoting regional trade and increasing income; the project is used to connect network with its neighboring country or a third country.<sup>21</sup> If the cooperation between more than two countries is considered as a benchmark, then there is a long history of East Asia cooperation and the cooperation on infrastructure construction.

Since 1960s, some international organizations including the United Nations have been discussing about building international corridors to interlink different Asian countries, among which the highway networks and railway networks receive most attention. *Asian land transport infrastructure development (ALTID)* project, which was proposed by the United Nations Economic and Social Commission for Asia and the Pacific (ESCAP) in 1992, includes two main parts: the building of Asia's highway network and Trans-Asia railway network. The first part involves 32 countries, 141,000 kilometers and it has been launched on July 4<sup>th</sup>, 2005. Up until now, it has

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<sup>19</sup> Sun Lijian, “The Construction of Two-oriented Society should be the Common Theme for East Asian Cooperation,” *China Development*, No. 3, 2009, pp.3-5.

<sup>20</sup> Zhang Yunling, “East Asia Cooperation Needs New Ways,” *China Economic Weekly*, No.1, 2010, pp.50-52.

<sup>21</sup> Asian Development Bank and Asian Development Bank Institute, *Infrastructure for A Seamless Asia*, Tokyo: Asian Development Bank Institute, 2009, p.20.

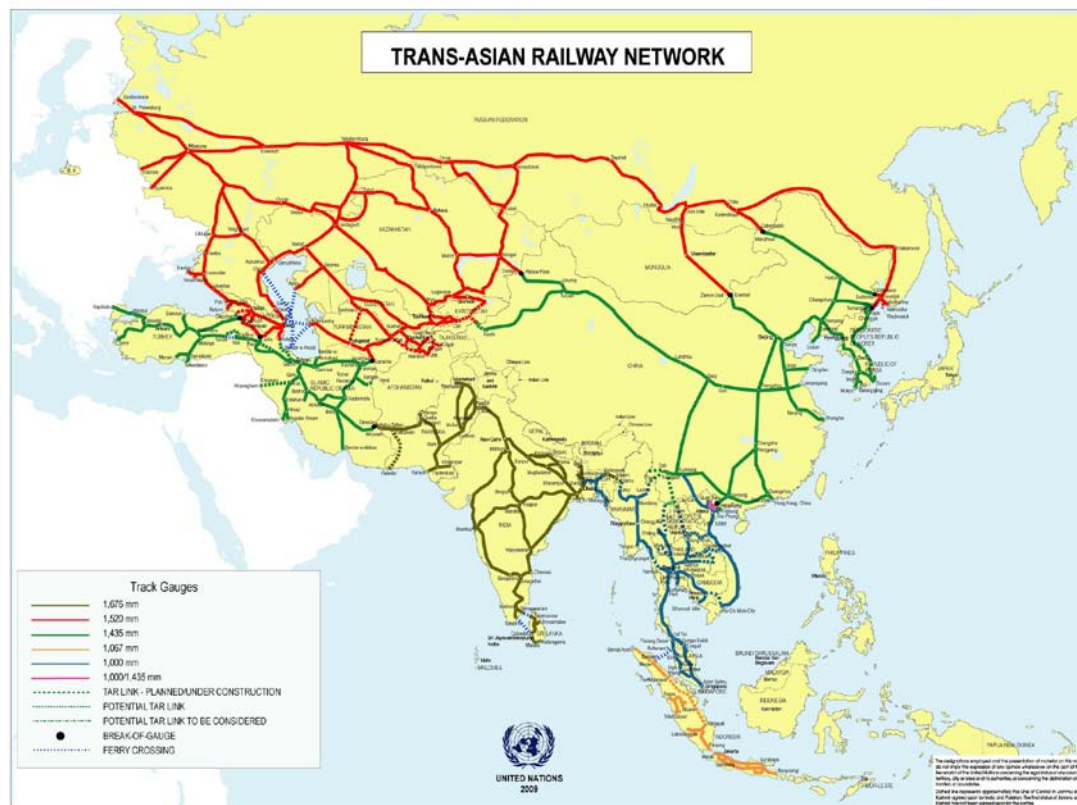
the signatures of 28 countries.

**Figure 6-1. Asian Highway Route Map**



The idea of building of Trans-Asian Railway (TAR) was put forward as early as 1960s. A proposal was made to build the railway between Singapore with Istanbul in Turkey and further expand it to link Europe and Africa in the future. Due to political and economic constraints, the progress of this proposal seems very slow. One important progress in this area is the construction of Eurasian Land Bridge. On November 10<sup>th</sup>, 2006, 17 states belonging to ESCAP signed *Trans-Asian Railway Agreement*, and another 24 states agreed to build the trans-continent railway from Europe to the port in China, which is called “iron silk road”. This agreement finally took effect on June 11<sup>th</sup>, 2009.

**Figure 6-2. Trans-Asian Railway Network**



The intra-regional trade in East Asia has developed very fast, which is taken as a basic variable reflecting the effects of the regional cooperative mechanisms. The share of intra-trade rose from 35% in 1980 to 55% in 2005, that equals to that of the North American Free Trade Area (NAFTA), though still less than that of EU. This is not only due to the liberalization of the markets, but also the improvement of the regional infrastructure environment.

In the view of the experts from Asian Development Bank (ADB), linking regional infrastructure constructions is beneficial to improve the competitive strength of this region. By linking the production centers with markets in different countries, infrastructure construction can reduce the cost of transportation and logistics, greatly promote the economic exchanges among the countries. Therefore, developing the networks of regional infrastructure will be an important work in the coming decades.

As for the infrastructure development, attention should be given to distinguish hardware and software. Hardware is just a part of the multinational linkage, and sometimes software is more important and vital, such as law, supervision, procedure and supportive policy. In developing the regional infrastructure networks, the government's involvement is very critical, including risk-sharing and creating a credible policy mechanism for financing etc.<sup>22</sup>

**Table 6-1. The Investments of Infrastructure Projects by Primary Sector in Asian-Pacific Regions, 1990-2008 (U.S. million dollars).**

Year	Energy	Telecom	Transport	Water	Total
1990	44	984	921	0	1949
1991	379	306	2405	0	3090
1992	3528	1938	855	284	6605
1993	5578	2782	2338	2558	13255
1994	6583	2913	4133	821	14450
1995	8371	4058	4821	520	17770
1996	10533	7035	8762	149	26478
1997	13235	9289	6472	8033	37029
1998	5190	1653	2290	943	10076
1999	5176	4581	2180	273	12210
2000	3476	7619	2643	4064	17802
2001	4439	5043	2651	673	12806
2002	3461	5191	1844	934	11431
2003	9455	3077	5670	697	18898
2004	3985	4906	1776	3367	14034
2005	6442	3540	7216	1014	18212
2006	4014	4657	9787	1572	20029
2007	6178	7629	6509	1902	22218
2008	7623	5465	1317	974	15378
Total	107690	82665	74590	28777	293721

*Resource:* Data was collected from World Bank resource.

<sup>22</sup> Haruhiko Kuroda, Masahiro Kawai and Rita Nangia, "Infrastructure and Regional Cooperation," *ADB Institute Discussion Paper No.76*, September 2007.

## 2. The Importance of Regional Infrastructure Construction

World Bank in its 1994 *World Development Report* compared the economic experiences of Southern Africa and East Asia with the conclusion that the differences between them can be attributed to much extent to the fact that East Asia pays more attention to the investment in infrastructure per capita.<sup>23</sup> In the later decades, this conclusion was further proven by many empirical researches. It is now a popular consensus that infrastructure can boost the economy by expanding opportunities and improving overall economic efficiency.

In January, 2004, ADB launched a joint infrastructure research program *Infrastructure in East Asia: Leap Way*. Experts argued that the infrastructure investment has been lagged behind compared with the speed of economic growth of East Asia, and there exists an “infrastructure gap”, especially in the supply of electric power, transportation and water. According to the experts, East Asia needs as much as 1 trillion dollars investment on the infrastructure construction in the future for supporting a sustainable economic growth. In infrastructure development, the role of the government is vital, but the active participation of the private sector is also important.<sup>24</sup> According to the report in *Connecting East Asia* published by ADB, the urbanization in East Asia has promoted the economic growth and urbanization contributes to as much as 70% of GDP increase. However, many challenges are also following the process of urbanization, especially the newly increased urban population’s need for infrastructure service. Another challenge is the unequal distribution of infrastructure, for about 60% of the population of East Asia is living in rural areas. So the political economic significance of the infrastructure construction means who will obtain benefits from the fast-improved infrastructure construction, while the rest will have to bear the cost and consequences of undermining

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<sup>23</sup> World Bank, “Infrastructure for Development,” in World Bank, *World Development Report 1994*, Washington, DC: World Bank, 1994.

<sup>24</sup> Ruby Anne M. Rubio, “East Asia Needs \$1tril. in Infrastructure Investments,” *Business World*, Sep21, 2006.

environment.<sup>25</sup>

According to the report *The Infrastructure Operating of Asian Development Bank* published by ADB in March, 2007, the biggest quantity gaps among Asian Pacific regions and industrialized countries lie in the aspects of electric power, highway and sewage disposal, while gaps in telecommunication are relatively small.<sup>26</sup> Entering the 1990s, it has seen a great increase in telecommunication and electric power in this region while the development of other sectors is very slow. At this speed, it will take Asia about half a century to catch up with the current level of industrialized countries. In terms of quality, compared with other regions in the world, railways are better developed in this region, while electric power is lack behind. The development of infrastructure differs much in different countries, sectors or fields. South Asia seems slow in infrastructure development, while Central Asia is also weak in some particular sectors. Importantly, a sustainable infrastructure development requires comprehensive mobilization of the factors, including policy, finance, technology, and also economic, environmental, social and political factors.

ADB has organized series of flagship seminars, for example, “*Emerging Asian Regionalism*”, “*Infrastructure and Regional Cooperation*”, to discuss the issues relating to developing cross-border infrastructure projects. In the regional infrastructure development, as pointed out by Masahiro Kawai, China has played a very important role in promoting the linkage between Asia’s northern part and southern part, between the eastern part and the western part, as well as among the GMS countries.<sup>27</sup> According to ADB/ADBI in their report on infrastructure, trade within Asian countries is more and more in the form of production networks and the improvement of trade competitiveness depends on an effective, fast, reliable and seamless linkage of infrastructure.<sup>28</sup> However, many regions on the Asian continent,

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<sup>25</sup> Asian Development Bank, The International Bank for Reconstruction and Development/The World Bank, and Japan Bank for International Cooperation, *Connecting East Asia: A New Framework for Infrastructure*, 2005.

<sup>26</sup> Diwesh Sharan, Bindu N. Lohani, Masahiro Kawai and Rajat Nag, *ADB’s Infrastructure Operations: Responding to Client Needs*, Asian Development Bank, 2007.

<sup>27</sup> Masahiro Kawai, ADB/ADBI’s Flagship Study: Infrastructure and Regional Cooperation, Third Workshop on Book Preparation, 2008, p.4.

<sup>28</sup> Asian Development Bank and Asian Development Bank Institute, *Infrastructure for A*



including some islands and remote areas, are separated both economically and geographically. Though many infrastructures have reached the world-class level, most of infrastructures are still under the world average level. In facing the new situation, the infrastructure development should be given to priority for the regional members and adopt a new approach by creating the close partnership between the public and private sectors, strengthening market system and perfecting policies.

### **3. Cooperation between China and Japan**

China and Japan are two biggest economies in East Asia. The two countries share mutual benefits and great cooperative space in the regional cooperation.

In terms of the infrastructure of the networks of highway, railway, aviation and pipeline in the region, China has a vital position and role in developing the regional infrastructure networks due to its geographical location and size of the market. Japan as a well developed country owns advantage in providing capital, technology, skill of management and especially its position and role in the regional production network. China and Japan could find them complementary in participating and promoting the regional cooperation in East Asia and also other region in Asia. East Asia is facing the new challenge of changing the mode of economic growth. A new infrastructure initiative will play a significantly in building the internal strength both on the national and regional levels. According to ADB's estimation, in terms of the investment on infrastructure in Asia, 8 trillion dollars is needed at the national level, while 290 billion dollars is needed at the regional level during 2010-2020. Therefore, about 750 billion dollars will be spent in Asia.<sup>29</sup>

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*Seamless Asia*, Tokyo: Asian Development Bank Institute, 2009.

<sup>29</sup> ADB, *Infrastructure for A Seamless Asia*, p.25.

**Table 6-2. The Needed Investments on Asia’s Infrastructure by Sector, 2010-2020 (U.S. million dollars)**

Sector/subsector	New capacity	Replacement	Total
Energy (Electricity)	3176437	912202	4088639
Telecommunication	325353	730304	1055657
Mobiles	181763	509151	690914
Telephone	143590	221153	364743
Transport	1761666	704457	2466213
Airport	6533	4728	11260
Ports	50275	25416	75691
Railways	2692	35947	38639
Roads	1702166	638366	2340532
Water and Sanitation	155493	225797	381290
Sanitation	107925	119573	227498
Water	47568	106224	153792
Total	5418949	2572760	7991709

*Resourced:* Quote in Masahiro Kawai, “Book Dissemination Seminar: Infrastructure for A Seamless Asia,” Tokyo, Japan, 29 September 2009, p.9.

**Table 6-3. Infrastructures in Stimulus Package in Asia (U.S. billion dollars)**

Country or Region	Total Stimulus package	Infrastructure allocation
China	586	263
Japan	250	0
Australia	27	3.12
Malaysia	16.2	0
Singapore	13.6	3
South Korea	13	1.9
Indonesia	7.5	5.7
Vietnam	6	6
Taiwan	5.2	1.7

*Resources:* Business Monitor International, “Japan Infrastructure Report Q4 2009,” Part of BMI’s Industry Report & Forecasts Series, Business Monitor International, UK, September 2009, p.9.

Japan has provided considerable support to develop the regional infrastructure, both economically and technologically. Japan companies are in the core of the regional production network and their investments objectively promote the infrastructure construction in host countries. Through its ODA programs, Japan has provided capital and technological support, as well as capability building to many developing countries in the region in their infrastructure development.

China has invested significantly in its infrastructure development and the international connectivity with its surrounding neighbors on highways, railways, water ways and also air ways. China has also provided capital (including soft loans), technology and management assistance to the regional members.

China and Japan have cooperated comprehensively in the regional cooperation frameworks on transportation infrastructure development. Chinese leader emphasized the cooperative role for two countries in the regional economic development in the areas of energy, environmental protection and infrastructure.<sup>30</sup>

In Japan-China high level economic dialogue in June, 2009, China and Japan signed a joint memorandum for infrastructure construction in Asian developing countries. It encouraged the companies from two countries to bid for Asian projects together, and they thus could get financial and other support from both governments.

To confront the financial crisis, East Asia should change its export-oriented development strategy and develop the economic mode of expanding domestic demand. In this period of transition, resolving the development issues should be the focus of the cooperation, including infrastructure construction, the regional flow of personnel, capital and technology.<sup>31</sup> A domestic-demand-oriented East Asian economy highly needs a better transportation infrastructure system that urges the regional cooperation mechanisms to play a stronger role in initiating, designing, financing the large regional infrastructure programs. China and Japan should the leading role together.

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<sup>30</sup> Zeng Peiyan, "Make Use of Opportunities to Promote to Build China and Japan's Relationship of Mutual Benefits," Xinhua News Agency, Dec 1st 2007.

<sup>31</sup> Zhang Yunling, "East Asia Cooperation Needs New Ways," *China Economic Weekly*, No.1, 2010, pp.50-52.

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