INFRASTRUCTURE
SUSTAINABLE DEVELOPMENT

PROCEEDINGS OF THE 1998
PUBLIC-BUSINESS/PRIVATE SECTOR DIALOGUE

20 – 22 MAY 1998
CHINESE TAIEPI

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FOREWORD

Since its establishment by APEC Ministers in Jakarta, November 1994, the Economic Committee has undertaken a broad range of research and analysis in support of APEC's work both on trade and investment liberalization and facilitation and on economic and technical cooperation. Work on infrastructure, carried out through the Committee's Infrastructure Workshop, has become an increasingly important part of this overall effort, reflecting the importance that Ministers and Leaders have attached to the development of economic infrastructure by making this one of the six priority areas for APEC's overall ECOTECH agenda.

A major substantive input to this work over the last several years has come from the Public-Business/Private Sector Dialogue that has been organized annually by the Infrastructure Workshop. The first Dialogue was organized by Indonesia in Jakarta in September 1995. It resulted in seven recommendations for on-going cooperation, which have since served as an important point of orientation for the Workshop's work program. The second Dialogue, organized jointly by the USA and Indonesia, was held in Seattle in July 1996. It focused on "best practices" in infrastructure development, with particular emphasis on risk mitigation, supportive policy environments for infrastructure development, beneficial institutional structures and regulatory regimes, and effective communication between the public and private sectors. The third Dialogue, organized jointly by Mexico and Indonesia in Los Cabos in June 1997, considered how to implement many of the best practices that have been identified in the course of previous Dialogues, in particular through enhanced integrated planning. This latter Dialogue also provided a boost to the development of the Protocol Agreement to promote cooperation amongst Export Credit Agencies and Export Financing Institutions in the APEC region; this agreement was signed in Vancouver in November 1997, as a practical "deliverable" to APEC Ministers and Leaders.

This year, APEC Senior Officials have looked to the Economic Committee, through its Infrastructure Workshop, to follow up on the ambitious package of infrastructure initiatives launched at the meetings of APEC Ministers and Leaders at Vancouver in November 1997. In particular, the Infrastructure Workshop has been tasked with:

- implementation of those aspects of the Leaders' *Vancouver Framework for Enhanced Public-Private Partnerships for Infrastructure Development in APEC* that fall under its aegis;

- follow up on the results achieved at Vancouver in developing concepts for focused outcomes in the areas of sustainable cities and infrastructure for rural integration and diversification; and
- exploration of the possibility of developing a Network of Infrastructure Facilitation Centers.

This work is also recognized as making an important contribution to sustainable development in the APEC region, reflecting the role that infrastructure plays in delivering economic, social and environmental objectives.

As these Proceedings show, the 1998 Public-Business/Private Sector Dialogue that was organized jointly by Chinese Taipei and Indonesia in Taipei this past May was a key event in developing concrete approaches to implementation of the initiatives launched at Vancouver. As well, it underscored the important contribution that infrastructure development can make to restoring growth in those parts of the region that have been hit hard by the economic and financial crisis and to making growth more sustainable.

I should like to take this opportunity to extend my congratulations to Mr. Ruslan Diwiryo of Indonesia and Dr. Yuh-San Liu and Dr. John C. Li of Chinese Taipei for organizing this year's Dialogue and for again assembling an outstanding group of businesspersons and technical experts to help steer APEC's work on infrastructure along practical lines. Thanks are also due to Ms. Julie Gould, Director (Program) at the APEC Secretariat who has taken particular responsibility for seeing these Proceedings through to publication.

Finally, I should also like to extend my thanks to Malaysia which has offered to host the next Dialogue in 1999. The Dialogue has become an important venue for APEC's public-private consultations and I am delighted that it will be continued next year.

John M. Curtis

Chair
APEC Economic Committee

Ottawa
September, 1998

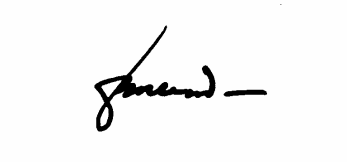
INTRODUCTION

A most important characteristic of the APEC process is the way it strongly encourages and indeed depends on bringing together the energies and capabilities of the whole breadth of the APEC community. It avoids compartmentalisation by interest groups and focuses diverse views and experience to set out and achieve progress on common objectives. This quality is exemplified by the cross-cutting nature of the Infrastructure Public-Business/Private Dialogues. Since these Dialogues commenced in 1995 they have combined an efficient process for synthesising a balanced picture of the challenges, possible approaches and priorities for the region on subjects as different in nature as protocols for interagency cooperation on investment risk management and the complex issues of sustainable urban development. It is not a random process, the agendas of Dialogues are continually evolving, blending closure on short-term practical priorities with the challenging proposals and free wheeling discussion that can catalyse energetic support to new areas of initiative. The Dialogues are repeatedly recognised by the Leaders of APEC economies as a deep-rooted source of views and information from across the community.

The Dialogue hosted so ably in Taipei typifies that blend. Its discussion on the infrastructure response to the economic crises in Asia provides penetrating insight into an immediate concern to at least the majority of the developing and developed member economies. It laid the groundwork for a programme of discussion that will concentrate expertise from across the region on assisting economies urgent efforts to rejuvenate rural economies. It also carried the discussion of the complex problem of achieving sustainable urban development closer towards closure on concrete measures; measures to apply policies and mechanisms to change a heavy social, environmental and economic burden of the late 20th century into one of society's most enduring achievements of the early 21st century.

Each Dialogue has challenged a subject that for the private sector, public sector or other interests groups has been an intractable hurdle in building awareness, consensus and determination for action. It is a process that can go much further; a process that should be open to a far wider contributing community than can be present at these important 'round table' discussions. Indeed an important and clear message from those lucky enough to be present was their call for support to a parallel APEC Infrastructure Workshop initiative to give leadership and practical support to the growth of open cooperation and facilitation networks. Such networks will support continuous exchanges and direct application of diverse experience to 'on the ground' initiatives and provide a fertile ground for future dialogues and initiatives at all levels of the regional and global community. These networks and the Dialogues can light the way forward for some of the most critical aspects of the evolving partnership between the developed and developing economies.

I thank all those that have made this and each previous Dialogue such remarkable events and invite all those who gain from or contribute to the infrastructure that can serve society's global progress to help set out the path and join in future dialogues.



Ruslan Diwiryo
APEC Infrastructure Workshops
Chair

September 1998

DIALOGUE CHAIRMEN'S FOREWORD

The 1998 APEC Public-Business/Private Sector Dialogue on Infrastructure, hosted by Chinese Taipei on May 20-22, 1998, was the fourth such dynamic exercise bringing together business people and government officials to discuss possible needs and approaches to advancing public-private cooperation concerning infrastructure development in the Asia-Pacific region, under the auspices of the APEC Economic Committee and its Infrastructure Workshop. It is of particular importance to APEC as it focused on how to develop the infrastructure and sustainable development initiatives that were endorsed by the Economic Leaders at Vancouver in November 1997, as well as following up the results of the Jakarta 1995, Seattle 1996, and Los Cabos 1997 Dialogues.

The Dialogue's message was that sound infrastructure was becoming more urgent not less, reflecting both the demands of a rapidly evolving information age, the tidal wave of urbanization ("urban tsunami") that is building in the region, and the damaging impact on long-term investment of the Asian financial and economic crisis in the developing economies of the region which most need infrastructure to address pressing economic, environmental and social goals. There was a strong endorsement of the need for facilitation from governments by improving economic frameworks and conditions for long-term investment within their own economies and also through regional cooperation through APEC. These are important messages to APEC Senior Officials, Ministers and Leaders.

The Dialogue was well attended, with over 160 participants from 14 APEC member economies. As Co-Chairs, we congratulate the delegates who joined us from such varied spheres of expertise and whose sharing of their extensive experience made this event so stimulating and productive. It demonstrated how well suited is open dialogue to providing insights into the cross-cutting, complex issues posed by the diversity of the region. We would like to thank Mr. Dan Ciruiak, the EC Chair's Representative for his assistance in chairing the proceedings when events related to the regional economic and financial crisis prevented the Indonesian delegation from attending.

Dr. Yuh-San Liu
Co-Chair of the Dialogue
Vice Chairman
Council for Economic Planning and Development

Taipei
September, 1998

Dr. John C. Li
Co-Chair of the Dialogue
Vice Chairman
Public Construction Commission

Taipei
September, 1998

SUMMARY REPORT OF THE 1998 PUBLIC-BUSINESS/ PRIVATE SECTOR DIALOGUE

SUMMARY REPORT OF THE 1998 APEC PUBLIC-BUSINESS/PRIVATE SECTOR DIALOGUE ON INFRASTRUCTURE AND SUSTAINABLE DEVELOPMENT

The 1998 APEC Public Business/Private Sector Dialogue on Infrastructure was held in Taipei, Chinese Taipei, May 20-21, 1998, under the auspices of the APEC Economic Committee and its Infrastructure Workshop. This was the fourth such Dialogue and of particular importance to APEC as it focused on how to develop the infrastructure and sustainable development initiatives that were endorsed by APEC Economic Leaders at Vancouver in November 1997.

Dr. Yuh-San Liu, Dialogue Co-Chair, opened the discussions by noting that, in Vancouver, Leaders had emphasized that infrastructure is inextricably linked to financial stability. Government and business need to work hand-in-hand in infrastructure development to gain the best possible results and to ensure sustained economic growth. Accordingly, the collective efforts of the delegates to the Public Business/Private Sector Dialogue would make a major contribution to the implementation of the Leaders' Vancouver Framework for Enhanced Public-Private Partnerships for Infrastructure Development in the APEC region.

Dr. John C. Li, Dialogue Co-Chair, noted that, on the basis of the information updates received for the Infrastructure Workshop's ID**2 database, quite a few infrastructure projects had been suspended in member economies because of the East Asian financial and economic crisis. He urged the Dialogue participants to exchange their views and experiences with the objective of getting infrastructure development back on track.

Dr. Schive Chi, Vice Chairman, Council for Economic Planning and Development of Chinese Taipei and Vice Chair of the APEC Economic Committee, reviewed the results of past Dialogues and highlighted the contributions that they had made to the Osaka Action Agenda, the Manila Action Plan for APEC and the Vancouver Framework. He emphasized that coordination and cooperation among the related APEC fora would be of the highest importance in 1998 to counteract the effects of the crisis on infrastructure development. This included the Economic Committee's Workshop/Dialogue, the APEC Finance Ministers process, and various Working Groups working on one aspect or another of infrastructure.

A message from Dr. John M. Curtis, Chair of the Economic Committee, was also presented to the Dialogue. Dr. Curtis noted that, as stability is progressively restored in the region, the longer-term factors that determine growth would again move front and centre stage. One of these areas is infrastructure. Before the onset of the crisis, it was widely recognized that there was a great need for improved economic infrastructure to meet the needs of the information age, to efficiently handle the vastly increased flows of people and goods within the region, to meet the power requirements of rapidly industrializing and urbanizing economies, and more generally to make good the

inadequacies that were impeding social development and environmental protection in many corners of the Asia Pacific. One of the key processes within APEC for developing an understanding of what must be done to improve the framework for infrastructure development within the region is the Public-Business/Private Sector Dialogue, which is also particularly important as it directly involves the private sector in APEC's work.

Dialogue sessions were held on the following themes:

Session I: Climate for Private Investment
Session II: Public/Private Partnership
Session III: Infrastructure Partnership for Developing Sustainable Cities and the Rural Economy
Session IV: Networks to Facilitate Infrastructure

To maximize inter-action amongst participants, following presentations by invited speakers, individual groups were formed to discuss and develop the themes. The recommendations that flow from these discussions thus reflect the views of all the participants. Reflecting the emphasis that APEC Economic Leaders and Ministers have placed on APEC fora working together with the business and private sector, the recommendations should be given serious consideration by member economies and taken into account in shaping and guiding APEC's ongoing work to promote infrastructure development in the region. Set out below is an overview of the discussions, followed by a summary of the Dialogue's recommendations. This is followed by a fuller report of the presentations, discussions and conclusions of each of the sessions.

Overview of the Discussions

Participants agreed that infrastructure requirements have, by and large, not been reduced by the economic and financial crisis. While immediate requirements have declined in some sectors directly related to the level of economic activity, such as power, elsewhere the need remains pressing, reflecting the need to keep pace with the requirements of a rapidly evolving information age, the need to support the immense amount of urban development – a veritable "urban tsunami" – that is facing the region in the next few decades, and the need to redress deficiencies in basic infrastructure in the developing economies in the region to meet pressing economic, environmental and social objectives. In the latter area, the negative impact of the Asian financial and economic crisis on long-term investment in the developing economies of the region which most need basic infrastructure has in fact exacerbated the situation.

Participants strongly endorsed the need for facilitation from governments by improving economic frameworks and conditions for long-term investment within their own economies and also through regional cooperation through APEC. The crisis has also emphasized the need to mobilize domestic savings in developing economies to support infrastructure development and, at least temporarily, has also placed a greater requirement on the public sector to step into the short-term breach left by the withdrawal of private capital. However, in the long run, private sector involvement is essential, a message that came through repeatedly and clearly.

Participants promoted transparent and open economic frameworks as a key way to stimulate private sector participation in infrastructure development and called on APEC to take a leading role in developing guidelines and templates of best practices. At the same time, the fact that risk was real and had to be carried in part by all parties came through. Participants supported development of independent regulatory institutions to ensure that decision making was based on economic criteria and noted that many checks and balances must be built into the process for appointing these bodies in order to ensure, on the one hand, their independence and on the other, to avoid excessive concentration of arbitrary power.

Participants supported the incorporation of sustainable development principles in economic activity in general and in particular the "greening" of infrastructure design and development as a productive ways forward on the global environmental agenda. As well, participants supported partnering amongst government, business and the non-government institutional sector and repeatedly highlighted the importance of involving all stakeholders.

Summary of Recommendations

The following summarizes the recommendations as developed in the breakout sessions and incorporating the comments and suggestions from the discussion of the reports in the Dialogue's plenary sessions.

Session 1: Climate for Private Investment

The Dialogue made the following recommendations based on the discussions in Session 1 on the Climate for Private Investment:

- Individual member economies should set up transparent systems that protect investors' and the public interest, including by:
  - setting up a strong legal framework that ensures transparency and consistency in law enforcement and policy execution irrespective of change of government;
  - building strong economic systems that are:
    - independent of government interference and that ensure that project decisions are based on commercial grounds rather than on political considerations;
    - encourage competition and fair play; and
    - provide a free flow of information and knowledge;
  - building strong and independent financial and banking systems that can provide adequate support to private investment;
  - providing concessions and incentives such as tax holidays, preference loans, interest subsidies, guarantee of payment in foreign currency, and guarantee of minimum returns; and
  - allowing the investment of domestic savings alongside foreign capital in

infrastructure so as to mitigate risks for foreign investors.

- APEC should provide a network to share experience in developing an appropriate climate for private investment among member economies.
- Recognizing that there is no universal model as regards an appropriate climate for private investment, APEC should conduct research and analysis of the special characteristics in member economies, compile and publish these findings and case studies as a guide and reference for member economies, and hold seminars on these studies.

Session 2: Public-Private Partnerships

The Dialogue made the following recommendations based on the discussions in Session 2 on Public-Private Partnerships:

- APEC should create an APEC Multilateral Training Center
- APEC should develop Guidelines for Training and Capacity Building.
- Training programs should be offered to public officials at all levels as well as to the private sector, which should provide:
  - professional training on public-private partnerships; and
  - training to bridge cultural differences.

Session 3: Infrastructure Partnership for Developing Sustainable Cities and the Rural Economy

This session made a number of important recommendations to promote global sustainable development that would, however, fall outside the work area of the Workshop. These include:

- promoting global social infrastructure to promote international networking of all members;
- moving from free trade to fair trade to pursue sustainable growth;
- through networking of NAFTA and APEC, APEC member economies that are not WTO members should be helped by other members to join the WTO;
- policy of international worker migration should be formed; and
- an infrastructure system is needed to improve income distribution.

The session also considered various issues in Urban Regeneration.

As well this session made a number of general recommendations of relevance to the Workshop:

- Develop or maintain, as the case may be, stable regulatory structures to protect and encourage long-term investment;
- Undertake long-term planning to coordinate all sectors;
- Include the reduction of regional disparity in planning goals;
- Include social equity in infrastructure planning; and
- Provide stable government policy and adequate incentives to private investment.

Session 4: Networks to Facilitate Infrastructure

The session concluded that there was a clear call for enhanced comprehensive infrastructure facilitation, including:

- Integrated planning;
- Risk management;
- Financial engineering;
- Environmental design;
- Dispute management; and
- Information sharing.

This facilitation would involve centers of excellence structured as a "network of networks" including:

- An APEC network that would develop guidelines/best practices and share information APEC-wide; and
- Linked networks within member economies (where required) to interpret and apply these guidelines and best practices in the specific context of each member economy, without competing with the private sector.

The networks should be "sustainable" in the sense that incentives should be there for member economies and private sector players to participate, without undue burden of responsibility on the network facilitator.

SESSION
REPORTS

Report of Session I

CLIMATE FOR PRIVATE INVESTMENT

Session 1 considered the topic of "Climate for Private Investment". Presentations were made by four speakers; this was followed by roundtable discussions.

Summary of Speeches

Peter Cassidy, Head of the Private Capital Division of AMP Asset Management Australia Ltd. (Sydney, Australia) provided the perspective of an Australian institutional investor on the issue of an appropriate investment environment. He emphasized in particular the importance of government setting up transparent systems, legal frameworks and policies to ensure "fair play" and to protect shareholders' interests.

Mr. Hideya Takaishi, Senior Manager of the Bank of Tokyo-Mitsubishi, Ltd. (Tokyo, Japan), reviewed several very good case studies in the Philippines, Pakistan and Thailand in which his bank has been involved. These provided a clear message: a sound and fair risk-sharing arrangement is needed to encourage the direct participation by the private sector in infrastructure investment and joint efforts are required on the part of both the public and private sectors to establish such an arrangement.

Mr. Liang Chang of Chinese Taipei reviewed a local case showing how the government has successfully encouraged participation by private sector in infrastructure investment. Private sector participation in infrastructure development in Chinese Taipei took off in the 1990s in the form of Build Operate Transfer (BOT) deals, thanks to a series of efforts by the government in improving the investment environment, including legal and regulatory changes and privatization of state corporations. However, Mr. Chang suggested that further efforts are needed, including the establishment of a risk-sharing mechanism between the public and private sectors, and the easing of restrictions on access by infrastructure projects to domestic and international capital markets.

Ms. Sue Su, also from Chinese Taipei, provided some insights into the BOT Law, which is to be passed by the Legislature. The purpose of the new BOT Law is to maximize direct participation by the private sector while at the same time ensuring greatest government prudence. The adoption of the Law would set up a more comprehensive framework to encourage private sector participation in infrastructure development.

Summary of the roundtable discussions

The discussions mainly covered the following areas:

- Government role in creating a favorable investment environment
- BOT/BOO projects / Risk sharing
- APEC's role in sharing experience among member economies

- Sustainable development: environment / privatization

As regards the first theme of an attractive investment environment, this is the fundamental factor in encouraging direct participation by the private sector in infrastructure. The government has a major role to play in this regard. In particular, the roundtable participants suggested that the government should:

- Set up a strong legal framework that ensures transparency and consistency in law enforcement and policy execution irrespective of change of government.
- Build a strong economic system that is independent of government interfering and which ensures that project decisions are based on commercial grounds rather than on political considerations. A system that encourages competition and a fair play. A system that provides a free flow of information and knowledge.
- Build a strong and independent financial and banking system that could support private investments.
- Draw up policies providing concessions and incentives such as tax holidays, preference loans, interest subsidies, guarantee of payment in foreign currency, and guarantee of minimum return etc.
- Allow domestic savings and pension funds to be invested alongside the private sector in infrastructure so as to mitigate risks for foreign investors.

In a word, the crux of the matter is to build a transparent system that protects investors' interest. The investors could trust the system and achieve their benchmark return.

As regards the second theme, Build Operate Transfer and Build Operate Own (BOT/BOO) projects have become a popular form of investment in infrastructure. A BOT/BOO project usually involves three key players: government, lender and equity owner. For a BOT/BOO project to work successfully, each party should make an effort to reduce, mitigate and share risk. There should be trust and confidence among the three parties that each of them has the ability to deliver its bit. The government creates a favorable investment environment, the equity partner has the technical competence to deliver a cost-efficient project accompanied by a satisfactory return and the lender provides the debt needed based on the confidence that the other two parties can deliver. Here, it is worth emphasizing that both the equity owner and the lender should be able to carry out quality feasibility studies and thorough and comprehensive due diligence. Only when each of the three parties has successfully delivered its bit will their respective objectives be achieved, i.e., maximum public interest for the government, maximum return for the equity owner and maximum security for the lender.

It was pointed out that international financial institutions such as World Bank and ADB should be encouraged to participate in BOT/BOO projects so as to mitigate risk. BOT/BOO will work but is not the solution to everything. It has its drawbacks such as relatively low Internal Rate of Return (IRR) and long payback period.

As regards the third theme of APEC's role, it was suggested that APEC could help by providing a network to share experience among member economies, and in fact by contributing some research and analysis of situations in various economies. It was noted

that, since each individual economy has its own special characteristics, there is no universal model of best practice to follow. An APEC-wide compilation of the situations in member economies, together with various case studies, could serve as a reference for member economies and help guide practice and policy development. It was suggested that such research could be sponsored by member economies who would also organize seminars on the findings.

As regards the fourth theme of sustainable development, it was pointed out that environmental protection and development are not mutually exclusive and indeed complement each other. It was also pointed out that, with privatization playing an increasingly important role in infrastructure development, private sector awareness of environmental concerns was becoming commensurately more important.

Report of Session II

PUBLIC-PRIVATE PARTNERSHIPS

Session 2 considered the topic of "Public-Private Partnerships". Presentations were made by seven speakers; this was followed by roundtable discussions.

Summary of Speeches

Kamran Akhtar, Director of the United States-Asia Environmental Partnership Program, spoke on the need to bridge the gap between eastern and western cultures through training and sharing of information on the experiences of member economies.

Sergio Hinojosa, Head of Studies, Ministry of Public Works (Chile), presented a government approach to build public and private partnership projects, citing many specific cases where new procedures had been applied to successful BOT and BOO programs. In the Chilean experience, innovative public sector approaches were combined with competitive private sector investment.

John William Taylor, Senior Vice President, Carol Johnson Associates, (USA) presented a land development case in Cambridge, Massachusetts, that had a long process of involving different interest groups and variety sources of funding. The benefits and the demand for the project were underestimated. The lesson learned from the case is the importance of flexibility of the joint partnership among people, private sector, and all levels of government.

Teo Ah-Khing, Managing Director, TAK Design Consultants (Malaysia) presented a large-scale coastal development project that involved international financing, environmental management, local land use regulations, and many interest groups. Examples were offered of information sharing with other member economies that have influenced the government's planning in Malaysia. The focus was on the effort to resolve all the conflicting issues and competing interest groups in the area.

Robert Hoskins Lloyd, Project Manager, Major Work, Hong Kong Government Highways Department (Hong Kong, China) presented the initiatives currently being undertaken by his department in conjunction with other public works programs, focusing to a greater degree than before on the Hong Kong, China region. A new set of guidelines for investment opportunities is being developed for the future.

Yap Kioe Sheng, Professor, Urban Management Centre, Asian Institute of Technology (Thailand-Canada) presented plans for training and capacity-building experience for public officials in facilitating BOT investment and partnership based on the Canadian initiative.

Alven Lam, Fellow, Lincoln Institute of Land Policy, (USA) shared the experience of his institute in professional training and the approaches to developing training curricula. He

presented different models of training for different professional levels and in different geographic regions. It is important to have research program that can provide timely and effective training materials.

Summary of the roundtable discussions

Participants were divided into seven small groups for roundtable discussions. The following main issues were raised:

Changing government roles: The government's role in a public-private partnership in respect of an infrastructure project does not have to be that of a promoter. It is important, however, that government act as a facilitator or a coordinator to bring different players together.

Partner role for government: As a stakeholder, government can participate in projects by sharing the risks and profits. However, it is important in forming such a partnership, that government and all partners understand each other's financial obligations.

Government guarantees for BOT projects: It is almost impossible for a lender to finance a BOT project without some sorts of government guarantee. It is also a debatable issue how much risk a government should undertake in entering such a partnership.

Start with small projects and increase progressively: In developing the financing arrangements, simple structures can be used initially to obtain experience as well as to establish confidence. This can lower the risk of the project and reduce the burden of obtaining significant financial commitment. More complicated structures can be used later.

Uncontrollable variables for the private sector: Government should understand more about the uncontrollable factors that the private sector needs to deal with. For example, a permit approval for a land development project is needed for the lender to commit further financing. Getting a permit of this kind may be more uncertain when social, economic, and political situations are complicated. Government should give special attention to assist the private sector to minimize the uncontrollable factors.

Grand-fathering through good governance: The private sector's rights should be protected if new laws change the rules of the partnership projects. Because most infrastructure projects require long periods of time to be developed and implemented, social, economic, and political circumstances can change during the course of the project. If the rules change, government should protect the rights of project partners.

Build consensus for privatization: Consensus building is a long process but is a key element for the partnership projects. Consensus building requires good negotiation skills, open-minded thinking, and clear and transparent expectations on the projects.

Secondary profit: Developers may expect external benefits by participating in a partnership project. Even if the actual project itself does not generate immediate profits,

the developer may receive benefit from other projects that are indirectly associated with it. Such external benefits may be significant and give the project partnership more flexibility.

To avoid too strong a public interest: While strong public support helps partnership projects, strong public opinions may also create negative effects for a project. Political backfire can, for example, sometimes occur if the public is overly enthusiastic and high expectations are not fully met. Strong public opinions also influence the decisions of politicians and may consequently affect the relationship among partners.

Training to bridge east-west cultural differences: This issue was raised quite frequently during the roundtable discussions. Cultural differences sometimes create tremendous hurdles which are costly to resolve. More training and information sharing are particularly critical during the stages of forming partnership and implementing the project. Better education can avoid expensive mistakes caused by the cultural differences.

Transparency lacking in private sector practice: While the private sector demands transparency within government procedures, the private sector itself is far from transparent in its decision-making. The government should also be able to ask for transparent decision-making processes in the private sector.

Solid regulatory framework: Having a strong legal and regulatory framework is the most important element to facilitate a partnership. The procedures and rules to be followed need to be well defined. The implementation of an infrastructure project should also be fully monitored. It was note that, while a solid regulatory framework is required for infrastructure partnership projects, this by itself does not guarantee successes as there are other factors that ultimately play a role.

Balancing public-private interests/risks: Partnership means sharing benefits and risks. Successful partnership projects require that the sharing of both benefits and risks be fair. It was noted that, to the extent that parts of the project contribute more strongly to the public interest, the government may have to take a larger share of the risk burden.

On the job training: On-the-job training is an essential element of training.

The recommendations drawn from the discussions in this session were that:

- APEC Guidelines for Training and Capacity Building be developed;
- Training programs be offered on public-private partnership, including to train public officials at all levels as well as for the private sector; and
- Programs should bridge cultural differences.

Report of Session III

INFRASTRUCTURE PARTNERSHIP FOR DEVELOPING SUSTAINABLE CITIES AND THE RURAL ECONOMY

The theme for the session III was "Infrastructure Partnership for Developing Sustainable Cities and the Rural Economy". This session was scheduled to be chaired by Dr. Ruslan Diwiryo from Indonesia, Chairman of Infrastructure Workshop. However, due to the domestic economic crisis at the time, Dr. Diwiryo was unable to attend. Mr. Jean Bilodeau from Canada agreed to serve as the session chair.

Summary of presentations

Eight speakers made presentations in this session. The key ideas and themes are summarized below:

Mr. Bosco C.K. Fung, Deputy Director, Planning Department (Hong Kong, China) reviewed the current efforts being made in Hong Kong, China through the planning process to achieve sustainable development. A study on Sustainable Development for the 21st Century (SUSDEVE21) was launched in Hong Kong, China to deal with sustainability issues including demand management, trans-boundary issues, strengthened institutional support, public awareness and support issues.

Mr. Jean Bilodeau, Director General, Environment Canada, described two specific initiatives undertaken by the Government of Canada to improve the environmental performance of its buildings and infrastructure. How "Environmental Management Systems" (EMS) can be used by both the public and private sector as an effective decision-making tool to contribute to the goal of sustainable cities was also outlined in his presentation.

Mr. Khor Poh Hwa, Director, Public Works Department (Singapore) introduced the evolving concepts of planning in Singapore to achieve sustainable development. Balancing urban economic redevelopment and historic cultural preservation was emphasized in addition to other planning efforts made to achieve environmental sustainability.

Mr. Barrie Cook, Chief Executive Officer, CKI Materials (Hong Kong, China) presented a systematic view of sustainable development to address economic growth, social stability and environmental continuity simultaneously and in a balanced manner. Government policy, corporate citizenship and appropriate technology are the development tools that need to be appropriately exercised. Examples of recycled resources were also reviewed.

Mr. Tadashi Nagai, Principal Planner, Nikken Sekkei Ltd. (Tokyo, Japan) presented a case study for infrastructure partnership in redevelopment of the Gujarat State Textile Corporation (G.S.T.C.) sites in Ahmedabad, India. Employment-generation activities to

alleviate the impact of industrial restructuring on workers in India affected by restructuring were financed with National Renewal Funds (NRF). The conceptual plan and working experience of the G.S.T.C. redevelopment project were reviewed.

Mr. Scott Pollack, Associate Principal, Arrowstreet Inc. (USA) presented successful stories of "brown field" redevelopment in the US, highlighting the importance of active government involvement in providing the right climate for private partnership.

Finally, Ms. Carole Brookins, President, World Perspectives Inc. (Washington, D.C., USA) and Dr. Robert Thompson, President, Winrock International Institute for Agricultural Development (who were representing the PECC Food and Agriculture Forum) emphasized the importance of infrastructure provision, particularly in the transportation system, to help rural development, not only in less-developed economies, but also in developed-member economies. They have pointed out that development of the food and agriculture system in APEC member economies is critical to the continued balanced growth in this region. More importantly, information infrastructure is critically needed to link with the INTERNET world.

Summary of the roundtable discussions

Three groups were formed which focussed their discussions on global sustainable development, national infrastructure planning, and local development policy respectively. Key points are highlighted as follows:

As regards *global sustainable development*, various efforts were proposed to promote sustainable development at the global level, with an emphasis on the importance of international networking. In particular, it was noted that:

- A global social infrastructure system is needed to support international networking of all member of the global community;
- A policy addressing issues related to the international migration of workers should be formed; and
- Infrastructure development is required to support improvement in income distribution.

As regards *national infrastructure planning*, it was noted that improved planning could help to ensure sustainable development. Infrastructure is the key instrument to promote national economic development. Moreover, it is central to the objective of ensuring the basic amenities and thus achieving social equity objectives, especially in rural areas. In these regards, the roundtable discussion suggested the following directions for future efforts:

- Providing a stable regulatory structure to protect and encourage long-term investment;
- Improving long-term planning to coordinate all sectors;
- Incorporating the objective of reducing regional disparity in infrastructure planning;

- Incorporation of the objective of social equity in infrastructure planning; and
- Supporting private investment by maintaining stable government policies and adequate incentives.

As regards *local development policy*, the focus of the discussion was on regeneration of "brown fields" and in particular on the experience in the USA, as reviewed in the presentation of Mr. Scott Pollack, where state and city subsidies have been used to help developers to clean up the land. This issue is becoming increasingly important for several reasons:

- Due to economic restructuring, more "brown fields" are to be found in all member economies;
- If "brown fields" are not reused, urban development pressure goes to virgin lands; and
- If "brown fields" are not cleaned up, soil pollution will spread out continuously.

It was suggested that, if such sites are too expensive for the private sector to clean up, the government should take an active role.

The factors critical to successful projects in USA were viewed to be:

- The USA has amassed a considerable amount of cumulative experience in similar projects;
- Sufficient time was taken to get development agreement from various parties involved; and
- Certainty of future tax revenue was ensured.

Potential difficulties in applying individual member experience to other member economies were however noted, including differences of a cultural, economic and political nature.

Report of Session IV

NETWORKS TO FACILITATE INFRASTRUCTURE

Dr. John C. Li of Chinese Taipei chaired this session. He opened the session with a summary of the various considerations bearing on the need for networks to facilitate infrastructure development in the APEC region, particularly in light of the financial and economic crisis that has hit this region; as well as on the design and scope of such networks. Four speakers then addressed the group; this was followed by a general roundtable discussion of the issues raised.

Mr. Hsi-An Yang of Chinese Taipei presented an overview on the ID**2 database, including the issues to be addressed in improving the coverage of projects in the database, and its utility to end users.

Mr. Dan Ciuriak, Coordinator Asia Pacific Research (Government of Canada) reviewed the considerations that would guide the design of an architecture for a comprehensive network of infrastructure facilitation.

Mr. David Katz, Chief Commercial Consul, U.S. & Foreign Commercial Service (American Consulate General, Hong Kong, China), reviewed the situation in the USA, including the role of commercial providers of infrastructure information and data bases.

Mr. Michael Harcourt, Chairman, Foreign Policy Committee of the National Roundtable on the Environment and Economy (Canada) examined infrastructure issues and the associated networking required between government, business and centers of excellence to respond to the "urban tsunami" that is building in the region.

The session concluded that there was a clear call for enhanced infrastructure facilitation and that this should respond to the immense requirements looming for new urban infrastructure to accommodate the several billion additional urban dwellers expected over the next two to three decades.

The facilitation should be comprehensive, including:

- Integrated planning;
- Risk management;
- Financial engineering;
- Environmental design;
- Dispute management; and
- Information sharing.

It was noted that this facilitation would have to involve centers of excellence since much of the requisite knowledge and expertise resided in such centers; and that it would have to be structured as a "network of networks". This "architecture" would include an APEC

network that would develop guidelines/best practices and share information APEC-wide; as well as linked networks within member economies to interpret and apply these guidelines and best practices in the specific context of each member economy.

In this regard, it was noted that one model would not necessarily fit each economy, and indeed, some economies might not even require such a facilitation network if the equivalent services were available on a commercial basis or through other means. The session agreed that APEC should focus on filling gaps and not compete with the private sector.

At the same time, the networks should be "sustainable" in the sense that incentives should be there for member economies and private sector players to participate, without undue burden of responsibility on the network facilitator.

KEYNOTE
PRESENTATIONS

AFTER THE FINANCIAL TURBULENCE: INFRASTRUCTURE DEVELOPMENT IN ASIA

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AFTER THE FINANCIAL TURBULENCE: INFRASTRUCTURE DEVELOPMENT IN ASIA

Introduction

There has been a global shift towards private provision of infrastructure in the last decade and Asia has been no exception. In fact, in Asia private provision of infrastructure began to gather momentum in the late 1980s and the Asian economies have accounted for a lion's share of total private investments in the infrastructure sector worldwide. Economies like Indonesia, Philippines, Malaysia or Thailand have increasingly relied on the private sector to build new infrastructure. In most of these economies, infrastructure provision by government is now limited to where the private sector is not willing or able to go. In most physical infrastructure sectors, such as power, telecommunications, roads, urban water or mass transit, private provision is playing an increasingly important role.

Until the onset of the recent financial turbulence, most 'Top Ten Private Infrastructure Projects' lists included seven or eight projects from the Asian region. In a short period of time, economies in the region were able to improve infrastructure availability. The private sector was able to end the power crisis in the Philippines and provided considerable relief to commuters in Thailand. Project Finance in private infrastructure became a vibrant industry and most important investors from around the world had to have an office in the region. Has this boom ended with the financial turbulence? Is a role-reversal anticipated in Asia? Today's important question is, 'When will the Asian Project Finance market bounce back?'

For an economist, it is difficult to provide an answer to these questions. However, we hope to address some of the issues that can help in an analysis of the present situation.

Before we begin however, a basic point needs to be made. There may be short-term problems, and there may be disagreements amongst experts about the length of the "short-term", but ultimately, private infrastructure has to grow in our region given the large unmet demand for infrastructure services. Further, a slow-down in the overall economic growth in the region as a result of the financial turbulence presents an opportunity. It is providing a short window of opportunity for us to reassess and reevaluate future strategies for this important sector.

There are many important issues facing private infrastructure today but I intend to cover only three issues this afternoon: the immediate and medium-term impact of the financial turbulence on private infrastructure in the region, the possible long-term impacts, and the challenges ahead.

Immediate Impact of the Financial Turbulence

The immediate impact of the financial turbulence on infrastructure development depends on the extent and the size of various risks born by the government and project sponsors and how the various parties involved are able to address these risks in the changed circumstances. Three types of risks in the context of infrastructure projects have become

quite important at the present time: foreign currency risk, fuel risks, and market risks.

The actual experience of risk allocation varies a great deal across the regional economies. The Philippines had little choice but to undertake foreign currency risks in the early nineties whereas Malaysia, with its relatively developed domestic capital market, was able to reduce overall foreign currency risks in its private infrastructure projects. Furthermore, overall impacts are very different for the projects already begun and those in the pipeline.

It is reported in trade journals that for a number of projects signed in late 1996 and early 1997, competition amongst banks for projects became so severe that a number of projects in Malaysia, Indonesia and Thailand were undertaken by the banks at margins below yields on sovereign bonds. In Indonesia, the dollar-denominated sovereign debt yields soared to double the pre-crisis levels, and soon to follow was the sovereign downgrade, even though individual projects had good fundamentals. Within sectors, the power sector has been hit hardest and partly this is due to much lower growth expected in future demand for power compared to the pre-crisis period.

Existing Projects

The overall impact on the existing private infrastructure will depend on whether these risks are born by governments or by the project sponsors. For example, in the Philippines, most of the power projects have "take-or-pay" contractual agreements denominated in foreign currency and so most of the foreign currency risk is with the government or its designated agencies. Thus, it is expected that the current devaluation will not affect the financial viability of private power projects but will only influence the cost of power purchased by the National Power Corporation. Since there exists a mechanism to pass on all increases in costs, the immediate impact will be on the consumer tariffs rather than the financial viability of projects *per se*. In Manila, the purchased power adjustment costs at retail level have gone up from 33 centavos/kwh in July 1997 to some 80 plus centavos/kwh in early 1998. The consumer tariffs have therefore increased significantly as a result of the devaluation. And if governments are *not* able to pass on such increases to the consumers, it will lead to significant fiscal impacts.

In Indonesia too, many power purchase agreements were denominated in foreign currency and so the crisis has increased the overall cost of purchased power. Almost all power projects are threatened with the possibility of renegotiation. In Thailand, for example, some of the foreign currency risk was with the project sponsors and hence devaluation has had a major impact on the financial viability of these projects. These projects will need to be renegotiated or restructured or both.

Projects in the Pipeline

There will be a pause in the setting up of new projects. The financial crisis has slowed down the pace of private deals. The share of private infrastructure projects in the region has declined to less than one fourth of total number of projects in 1997. In 1996, Asia accounted for about a third of total projects worldwide. Currency dives have meant postponement of a number of projects across the region. In Malaysia even prestigious projects such as the Bakun dam or the Linear City have been shelved.

There are a number of projects in the pipeline, some of which will need to be completely reworked. Many lenders who previously accepted that there was no need for risk cover in Asia may demand such cover henceforth. If there are problems with arbitration in the existing projects, political risk cover may be needed. Even in the best of scenarios, projects will face a hardening of terms.

Medium-term Impacts

In the medium-term, postponement or delay of projects in the pipeline may have a negative impact on the infrastructure sector and on the overall availability of infrastructure services. For example, as of last December, 12 projects were in the pipeline in the Philippines awaiting financial closure. As mentioned earlier, the investment needs of infrastructure in the region are large and such delays can lead to infrastructure emerging as a constraint to economic growth. In some economies, high infrastructure cost was becoming a major constraint to competitiveness. Further delays may prove to be expensive in terms of economic growth.

In addition, governments may once again have to offer generous terms to attract the investors back. This may negate the gains reported in the last few years around the region. The APEC Energy Working Group (1997) had demonstrated that the final cost of private power in Indonesia and the Philippines came down significantly: from about 8 cents per kwh to as low as 3 cents per kwh in the Philippines. In Indonesia earlier projects such as Paiton 7 and 8 were available at a cost of 8 cents/kwh whereas the more recent projects had costs of less than 6 cents/kwh. This was possible for several reasons– three important ones being:

- Decline in the "perceived risks" by the developers once a number of projects were closed successfully in a country,
- The 'learning-effect' in governments, and
- Greater competition among project sponsors.

One could expect the financial turbulence to have a similar but *opposite* effect on new investments in the medium-term. There will be an increase in the risks perceived by private investors. In fact this is already being felt. Second, given such large changes in the values of currency, there will now be many fewer sponsors in the market. Both these factors will lead to a hardening of terms for individual projects.

There are also a number of potentially positive effects in the medium-term—for

example, higher user charges for power or water may lead to more efficient use. Similarly, higher tariffs could slow down the growth in infrastructure demands leading to more efficient use of scarce resources. Finally, if the governments are unable to pass on large increases to consumers, they will be more careful in selecting projects in the future. All these factors could bring additional efficiency gains.

Long-term Impacts

In the long-term, the impact of the financial turbulence on infrastructure development may even be positive, for several reasons.

- Firstly, the financial crisis has altered the fundamental structure of private infrastructure projects. Most project sponsors will be reluctant to undertake foreign exchange risks in the future. Similarly, governments will not discount these risks. This will lead to a situation where the risk allocation between governments and project sponsors will be more carefully done. In cases where governments have to undertake foreign currency risks, they will be less willing to shoulder other risks that are better handled by private sponsors.

- Secondly, the crisis has highlighted the need to develop domestic markets for capital to fund the infrastructure sectors. Whenever there is a mismatch between cost and revenue streams, it entails a significant risk. There are short-term solutions in terms of government support, but the only sustainable way to eliminate this risk is through the development of long-term domestic markets for capital and improving the functioning of local financial markets in general.

- Finally, it is also being recognized that unless reforms in the infrastructure sector are undertaken seriously, public-private partnerships will not be sustainable.

Historical Evidence

We all know that private infrastructure is nothing new–even in the 19th century, large infrastructure development projects were carried out by the private sector. Several studies of such early development indicate some interesting similarities to the present situation. We have just about completed a study on build, own, operate, transfer (BOOT) projects and have found similarities between the emergence of BOOT projects in Asia and 19th century private developments. In the 19th century developing regions also financed large infrastructure investments through inflows of foreign funds. The foreign capital was seeking higher rates of return and developing regions were in a hurry to develop infrastructure. I would like to touch upon two important findings from our study–first, in a number of railroad projects, local support through capital turned out to be a pre-requisite for the success of large projects. In the USA, this was possible. Large tracts of land, and railways, were successfully developed with local subscription and external capital providing mutual reinforcement.

In Argentina, however, this did not happen–from hundreds of lines that were built by the

1870s, most with British capital and government aid, Oeste was the only one which made a profit. In the present conditions projects undertaken with the help of domestic capital are less vulnerable.

The structure of incentives has always mattered – whenever debt was guaranteed by the governments, the private sector adopted heavy leveraged structures, at times even to the detriment of a project's financial viability. Similarly in a large number of the Asian Projects today–when governments have provided guarantees, say for foreign currency risks, most projects undertook unsustainable foreign currency risks. Take-or-pay contracts reduced the market risks for the sponsors, leading to over-capacity in many economies. Widespread use of government guarantees lead to the undertaking of higher risk projects than would otherwise be allowed by the markets.

The Challenge

The overall challenge is to ensure adequate infrastructure supplies at reasonable costs for the economies in the region, and it has to be met against the background described above. The present financial turbulence has created large risks for private sector and governments alike. However, we need to remind ourselves that most infrastructure projects face large financial risks–we saw it in the 19th century, and we have also seen it much later. Even in the 1970s and 1980s power and water enterprises in the USA showed signs of financial strain. Slower population growth coupled with erratic and slower economic growth usually take their toll on the viability of the infrastructure sector. Pervasive over-capacity was one result of these uncertainties. Similar effects will be experienced this time around in Asia too. What is required is a realignment of our approach to private infrastructure.

The first and most important need now is to find financial resources to restructure and refinance debt. Governments and private sponsors need to work on strategies to reach the best possible solutions. Given the political uncertainty, the first task should be to preserve the investment climate so private funds continue to flow into the infrastructure sector.

Secondly, sector restructuring will also need to be addressed so that the additional funds help to generate competitive markets. In most economies in Asia, what has been achieved so far is a greater role for private investments. The next task is to create conditions to establish competitive markets in infrastructure sectors. This task is a lot harder than to allow discrete series of private projects. Creating competitive markets would require the setting of enabling conditions across many diverse fields, such as legal and regulatory regimes, or tariff reforms and designing incentives for technological upgrades. We need to take advantage of the present condition of surplus capacity to create efficient delivery of infrastructure. Only this will help to maximize consumer gains. Unless public-private partnerships develop into competitive or contestable infrastructure markets, this relationship will not remain sustainable. It is here that the window of opportunity mentioned earlier–of surplus capacity and competitive pressures–needs to be used to maximize overall gains for consumers. Experience shows that competition is relatively easy to establish when there is surplus capacity.

Thirdly, another issue that needs to be dealt with effectively is public acceptability—most infrastructure services exhibit some characteristics of public goods as well as some elements of natural monopoly. Thus, governments always have to balance public interest with private. Given the present financial conditions, this responsibility is simply overwhelming. Unless there is action on this front from both governments and the private sector, it will not be easily resolved.

Developing appropriate financial markets to deal with infrastructure needs has always been a priority. Long gestation periods, operating life, and payback periods are important attributes of infrastructure investments. At present, availability of long-term funds, typically with maturities of over 10 years, is beyond the capability of the domestic capital markets in most Asian economies. Legal and structural impediments, financial sector deficiencies, and insufficient human and institutional resources affect the growth of required markets. Developing domestic markets for long-term capital helps to curtail risks and clearly needs to be put on a priority list.

Finally, human and institutional capacities within governments need to be built up to deal with the complex issues of private infrastructure provision, and they must be constantly upgraded to deal with the emerging challenges of globalization and complex financial structures. A few governments are trying to adopt strategies for risk curtailment and management and these will need to be continuously built-up.

Summing Up

The financial turbulence in the region is likely to have significant impacts on private infrastructure. Not all impacts will be negative. There could be short-term problems–but with a large unmet infrastructure demand in the region, the private project finance market has to bounce back. The short window of opportunity of surplus capacity around Asia offers a unique opportunity to move beyond greater private investments in infrastructure to creating competitive markets. The key to success lies in developing domestic capital markets for funding infrastructure investments and improving human and institutional capacity to deal with emerging challenges.

INFRASTRUCTURE AND SUSTAINABLE DEVELOPMENT

Ladies and Gentlemen:

I would like to welcome all of you to Taipei. I am pleased to be here and make an introductory note to this conference.

The past three dialogues have given a clear picture of infrastructure development in the region, so I will focus more on the implementation issues in this dialogue.

The currency crisis has had a serious impact on the economy and politics in the Asia Pacific Region. Infrastructure is essential for sustaining economic growth, better quality of living and healthy urban development. Meanwhile, more infrastructure projects will not only stimulate the economy to recovery, but also spark growth in the financial market, labor market, construction industry and other related industries. It will be a benign cycle between excellent infrastructure and prosperous economy.

According to a survey of infrastructure projects which cost more than US$40 million, and in relation to medium- and long-term economic development in the eighteen APEC member economies, the aggregate value of projects has exceeded US$220 billion, including more than US$40 billion in private investment. Private participation in infrastructure development has become a worldwide phenomenon.

Following this global trend, Chinese Taipei has also adopted the build, operate and transfer model (BOT), to encourage private participation in infrastructure development. The infrastructure projects in Chinese Taipei have long been financed by government funds and supervised under strict regulations. As a result of economic prosperity, the demand for infrastructure is increasing, and the government's budget is no longer sufficient to sponsor the numerous public constructions. Thus, a Statute for Encouragement of Private Participation in Transportation Infrastructure Projects was promulgated in 1991. The famous High Speed Rail (HSR) Project is ruled under this Statute. The private investment in the HSR Project was undertaken by a consortium through a tendering process. The private investors were required to be responsible for all of the electrical, mechanical, and civil works, and for the operation and maintenance of the HSR system for 30 years. The government on the other hand, will undertake the difficult task of acquiring land as well as other supervisory functions. Therefore, the BOT approach was adapted to incorporate private funds and integrate the private sector’s efficiency and the free market principle into infrastructure projects.

On the international front, it may be appropriate for APEC to develop a set of guiding principles that its member economies can follow so as to better utilize the resources, including the financial resources, technological resources, operating efficiency and management know-how, from the private sector. To facilitate the infrastructure developments of each member economy, such guiding principles could perhaps address the following issues:

- Removal of Investment Barriers

- Encouragement of Private Participation
- National Treatment of Foreign Investment
- Limitation on Government Intervention

As private participation in infrastructure projects increases, it is of vital importance to reduce the disparity of perception between the public and the private sectors in terms of implementation. Thus, a fair and equitable regulatory framework should be set up by each member economy to facilitate implementation of infrastructure projects. Such regulatory framework should include the following issues:

- Transparency in the Tendering Procedures
- Balance between Public Policy and Private Interests
- Competition Policy and Resources Allocation
- Incentives for Private Participation
- Risk Assessment and Management
- Operation and Supervision

Meanwhile, vast capital is indispensable for almost every infrastructure project. A number of factors involved in infrastructure projects, including methods for determining feasibility, interest rates, financing methods, risk distribution methods, and sources of capital, are critical to the projects' success. This is, of course, in addition to financial institutions' financing of infrastructure projects. As such, the issue of "bankability" should be addressed in one form or another. A protocol including the following elements could perhaps be developed:

- Project Evaluation
- Alternative Financing Methods
- Capital/Debt Ratio for the Projects
- Syndicate Arrangement
- Risk Distribution Methods
- Right of Intervention

Finally, I am optimistic about the outcome of this dialogue and outlook for our collective action. This conference will surely produce a wealth of insights and ideas and help us in numerous ways to take the next step. I look forward to this wonderful opportunity to learn–for myself, for Chinese Taipei and for all APEC member economies.

Thank you.

CLIMATE FOR
PRIVATE INVESTMENT

INFRASTRUCTURE AND SUSTAINABLE DEVELOPMENT

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THE CLIMATE FOR PRIVATE INVESTMENT IN APEC

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THE CLIMATE FOR PRIVATE INVESTMENT IN APEC

During the past decade the APEC region has experienced a rolling series of financial crises. The Mexican crisis rolled through South America and today the crisis in Asia is wreaking similar problems on the other side of the Pacific. The experience from South America was that those economies that had well developed capital markets and strong savings systems were less affected than those that did not have these features. It will be interesting to see over time whether the same features emerge in Asia. There are lessons to be learned from recent history and these lessons do impact the climate for private investment.

It is important to understand the key drivers that lead to stability and sustainable wealth creation. Governments and their bureaucrats have a vital role to play in the creation of the conditions necessary to enable business to develop and wealth to be created in their economies.

I aim to identify a number of issues that are, to a greater or lesser extent, of fundamental interest to an institutional investor. I will try and identify, at a macro and hence simplistic level, similarities and differences between the developed and developing economies in the management of an economic crisis. Finally, I will try and give a strategic view of the Asian crisis from an institutional perspective for future investment.

Let me start with a comment on the Asian crisis as it is at the forefront of people's minds today. It is recognised that the Asian crisis had its genesis several years ago when decisions in China (which devalued its currency 30% in January '91) and Japan (whose currency began depreciating in April '95) began a process resulting in competitive devaluations across the region and a widespread regional recession. Unfortunately many of the local corporations across the region did not recognise the trend until it was too late.

The equations of capital (profit and balance sheet) are common to developed and developing economies that use the capitalist framework to create a better life for their people. The dynamics in the Asian crisis are caused by the typical human emotions found in any society. Fear and greed are the two most common emotions that are manifested in the negotiated interactions occurring, for example, between buyer and seller, debt and equity, borrower and lender–with the added twist that the lender has often been a foreign institution.

Governments play an important role in determining the rules between the various parties who are the stakeholders of the community. I will examine these relationships briefly.

The Role of Government

Without going into detail, the fundamental human emotion to wealth creation is trust among the stakeholders in a particular venture. In the case of a nation the stakeholders are many, ranging from individuals to corporations, government and its bureaucracies as well as special interest groups. It is the role of government to create a framework in which all

stakeholders can trust they will be treated fairly. This is not a trivial task. It requires amongst other things, competitive policies and a legal system that is seen to be impartial and capable of protecting stakeholders' interests.

In order to ensure that government itself is trusted, politicians and bureaucrats have to be seen to be even-handed to all stakeholders. Conflicts of interest should be avoided at all costs as the stakeholders may not believe that they are being fairly treated. The result is a lack of focus and commitment from the stakeholders to optimise the wealth creation process.

All developed economies have experienced the excesses leading to recession, and their governments in recent years have gained the political fortitude to dampen expectations and remove the volatility of previous economic cycles.

The results, at the micro level, of recessions in an advanced economy and in an Asian economy are surprisingly similar. Financial institutions, especially banks and specialists such as brokers and merchant banks fail, as do businesses without strong cash flows. A lot of people lose their jobs and the societal stresses become highlighted through the political process. An important feature of the developed economies is that they have highly developed mechanisms for relieving this social stress. The political, legislative and legal frameworks exist to tighten laws, seek legal remedies against the people who have benefited from or caused the excesses and the break up of failed companies. The result is the rapid emergence of a new generation of business people who begin to build businesses in the modified framework.

I see that a key weakness of a number of developing economies is that the political process is too closely aligned with business and it is difficult for the politicians to implement policies that relieve the stresses and allow the rebuilding to occur rapidly. A foreign institution has to be particularly wary entering an environment that lacks transparency and accountability. Thailand appears to be an example of how political change may lead to increased transparency and as a result an increase in confidence by the markets.

Extreme situations can emerge in times of stress, particularly when there are other issues impacting the community at the same time as the economy weakens. Indonesia is a case in point. The international community has to be sensitive to such situations as social stability is a precursor to economic stability.

Borrower and Lender

In developing economies companies are generally controlled by families and entrepreneurs who believe that owner-control is vital for their long-term success. Their preference is for debt and hence they are willing borrowers. As the economic bubble expands in an overheating economy many borrowers begin to believe in their commercial immortality and start borrowing for non-productive business activities. Up until the middle of 1997, many developing Asian nations borrowed heavily on an unhedged and short-term basis. Much of the borrowing was for non-productive business activities often involving property speculation.

Enthusiastic lenders are equally to blame as it takes two to tango. Bankers with sales orientations sell the advantage of increased debt levels and the sales pitch is accepted by the willing borrowers. There is perhaps an argument for a lack of business experience among the entrepreneurs of the developing economies, but in reality the same lack of experience also occurs as the generations change in the developed economies.

The presence of strong central banks focused on keeping inflation low are powerful feedback loops to slow down entrepreneurial excess. Central banks in most of developing Asia have neither the independence nor the authority to concentrate their efforts on policy targeting. Hence the cycles of boom and bust are not likely to be mitigated and dampened as they are in the current low inflationary environment in the developed economies.

Banks go through internal cycles that alternate the internal forces between selling product and credit control. Excessive focus on selling and market share leads to loss of focus on credit control and a build up of poorly performing loans. The aforementioned close linkage between the government and business has resulted in Asian banks, with an implied government guarantee, making loans regardless of risk. This resulted in there being almost no Western style conventional risk analysis. As the hole in the balance sheet appears, credit control moves into the ascendancy. In the case of Asia it has been too little too late.

Debt and Equity

At the end of the day equity pays the price for the excesses of debt. I have seen the resigned looks on equity investors' faces as they contemplate having to write down their holdings and subscribe new capital to preserve some value in their investments in the banking sector following a market collapse. The irony is that in today's competitive and intertwined world lending excesses by the banks have sometimes been achieved by outbidding the fixed interest manager in an institution which owns the bank equity in a different portfolio.

A weakness in some of the Asian economies affected by the economic crisis is the lack of both a strong, trusted domestic institutional long-term savings base and a class of professional institutional investors who invest in the domestic banking sector and the broader corporate sector.

The weakness has resulted in foreign lenders filling the market gap. Institutional investors generally require transparency and the elimination of conflicts of interest to strengthen the quality of their investments. Foreign lenders have not necessarily seen the need to focus on transparency to the same extent that a local institution would. They just rely on the right to have security and the right to exercise on that security. Equally, foreign lenders have their own sales-credit control dynamics that are driven by the needs of their off-shore stakeholders. The results are volatile capital flows and, unfortunately, volatility in the currencies. Currency volatility might have been reduced in some economies if the domestic savings engines had been properly constructed and were participating sensibly across their local economies. I believe that this is a powerful

incentive for governments to implement broad-based pension savings systems which are coupled to transparent and well-regulated capital markets.

It is important to recognise that as foreign capital returns to Asia it will return with the strings attached that are required by the foreign stakeholders. Acceptance of these requirements will result in a trend towards markets that are acceptable to institutional investors.

Financing Infrastructure in a Developing Economy

I have concentrated mainly on the lenders of capital. There have been several major equity funds established in recent years that have focused on infrastructure investment. The equity has been provided by foreign investors who have been sold a view of the returns that they can expect. The capital in these funds is relatively long-term with the investment and divestment cycle occurring over ten years. Investors in these funds have no choice but to sit tight and hope that sufficient value is restored within the time horizon of the fund to justify the risk. It is disappointing that one of the Asian sponsors of a major infrastructure fund has failed. It reinforces the point that investors have to be careful about who they choose to back.

It is important to recognise that, from the perspective of national interest, the time frames of these funds are relatively short. The power of compound interest requires one to two generations (i.e., 20-30 years) of disciplined economic management to work its magic and enable sufficient internal wealth to be accumulated so that an economy can withstand external economic pressures. Singapore and Chile are good examples.

The need to match time horizons and expectations again points to the need for long-term pension related savings mechanisms that are trusted by the people in developing economies so that the truly long-term under-pinning of the economy can occur. In times prior to the emergence of modern capital markets, life insurance fulfilled a similar role of matching long-term investment with long-term savings.

An interesting mis-match has emerged in the development of infrastructure investments in the APEC region. Governments have established policies that allow a certain IRR for infrastructure projects. I understand that the bench mark is about 14% and it has the endorsement of multi-lateral agencies such as the World Bank and the Asian Development Bank. The benchmark return is barely adequate for private investors in their domestic economy. From the perspective of the relevant government this is a justifiable return as it approximates the long-term stock market return in developed economies. After all, from the government's perspective it does not see a sovereign risk and it only wants a fair return for investors. Unfortunately most of the capital comes from foreign investors who, by definition, see a sovereign risk as soon as they invest outside their own economy. To date the foreign investors have bought the concept sold to them by investment managers specialising in investing in developing economies on the basis that they will receive an outstanding return on their investment. Often, though, the return is predicated on a listing on a local or regional exchange at a premium. Recent events have shown how high risk this strategy can be.

Another mis-match occurs as a result of the need for sophisticated technology that has invariably been created in a developed economy. The price of the technology has to be sufficient to generate a sustainable return to the company. Unfortunately the developing economy cannot always afford the price and political solutions emerge to cool down the dissent amongst the people. The result is that the investor takes a risk that the economic engine will be ruined and the investment will lose substantial value.

Another challenge for governments is to be even-handed with local and international business people. I have experienced a situation where local business people have been able to leverage their political influence to obtain a preferred position in a venture when they were not even a partner in the venture to begin with.

These are a few examples of risks that are not covered by a 14% return! The risk for government is that the foreign investor will not in future trust that the risks are manageable and the promised returns achievable. The consequence will be that investors will focus on other opportunities that suit their criteria.

Governments have to carefully plan their selling pitch to investors and have a well-developed implementation program that has appropriate performance benchmarks against which they can be assessed. A consistent performance leads to the creation of trust with investors. This is not a situation where one party can afford to be arrogant and dismissive of the needs of another key stakeholder.

The major challenge for government is to focus on the creation of internationally sustainable businesses and support them with internationally benchmarked infrastructure. There is no magic solution. One particular opportunity we, as Australians, have identified is that resource rich economies have a natural endowment that can be leveraged. Mine developments need electricity, roads, railways and ports. They create new communities and new opportunities for existing communities. Parts of inland Australia were developed under this paradigm.

Sensitive strategies can potentially create business opportunities for local stakeholders on a marginal cost basis.

PROJECT STRUCTURING TO ACCESS EVOLVING FINANCIAL, CAPITAL AND RISK MARKETS IN THE POWER INDUSTRY

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Japan

PROJECT STRUCTURING TO ACCESS EVOLVING FINANCIAL, CAPITAL AND RISK MARKETS IN THE POWER INDUSTRY

Ladies and Gentlemen, it is indeed a great pleasure for me to be here and represent The Bank of Tokyo-Mitsubishi (BTM) at this important conference. I am especially happy that this conference has given me the opportunity to talk about recent developments in project structuring in the private infrastructure industry. Project structures have been changed to respond to local currency devaluations in the region. I would like to give several examples from the power industry so you may get an overall understanding of these structures, and then share with you our recent experience of the joint efforts by the public and private sectors to enhance the climate for private investment.

We have seen that power infrastructure development requires enormous commitment in terms of resources and it is not easy for the public sector in developing economies to provide all the necessary resources. At the same time the private sector is handicapped by the sheer magnitude of the projects. It is very difficult for the private sector to fund, manage and invest in the infrastructure projects entirely on their own. These resource problems are not limited to the developing economies but hold true even for the technologically advanced economies. We have seen and learnt that the successful execution of power projects depends to a large extent on the joint efforts of the governments, ECAs, MLAs and the private sector.

The developing economies in the Asia-Pacific region face challenges in meeting their power needs. In many East Asian countries, private sector participation (including financing and management) in new infrastructure projects has either become, or is close to becoming, a reality. Even though the recent financial crisis in the region may prevent developing countries from rapidly expanding as they have been before, we do not believe this slowdown will change the basic need for private participation in the infrastructure industry.

We, as a financial institution, are proud to say that BTM has been happy to play a role in the development of the power industry in the region. What follows is a brief overview of some of the landmark transactions in which BTM has played a key role.

The Pagbilao Power Project is probably one of the best examples illustrating risk sharing between public and private sectors in the power industry. The project is a 700 MW coal-fired power station in the Philippines, and the deal was closed in 1993. The leading sponsor was Hopewell. This transaction was the first private power project in the region on a limited-recourse basis for JEXIM, USEXIM and ADB, all of which provide a debt facility to the borrower. The Bank of Tokyo-Mitsubishi is acting as the JEXIM/MITI facility agent, providing more than half of the total loan amount.

The government guarantees the obligations of the National Power Corporation (NPC) under the electricity off-take arrangement with Hopewell's project company. The ECA also provides an insurance and/or guarantee to support the government guarantee. Accordingly, commercial banks providing finance for the deal are only exposed to the

commercial risks associated with the power project. These risks include mainly the construction and operation of the power station, but exclude NPC's non-payment risk. Even though we do not believe exactly the same structure is still required for similar private power projects in the Philippines or in the region, at that time it would have been impossible to close a bank syndication without support from the ECA. Since NPC's payment is made in U.S. dollars, and guaranteed by the government, commercial banks are protected from devaluation risks associated with such payments.

The Hub River Power Project led by the World Bank in Pakistan is also a good example. Even though the actual agreements are quite different from those of Pagbilao, the concept used for private and public risk sharing is the same. We, the Bank of Tokyo-Mitsubishi, were one of the lead arrangers and in charge of the World Bank Guarantee as its agent. Since the guarantee structure is the basis for other ECA's guarantee facilities, we played a key role for public sector support for the deal.

Now, I would like to touch on recent developments in Thai power projects. Unlike the other examples so far explained, the public sector did not originally provide any guarantee as to EGAT's payment obligations in terms of U.S. dollars. The power purchase agreements only offered capacity and other fee payments in the local currency. Project sponsors and banks were therefore exposed to local currency devaluation risks. Because of this local currency payment arrangement, all private power projects were expected to suffer any foreign exchange losses. Responding to the regional currency crisis, there have been discussions and negotiations about how to solve the issue. After long discussions between the private and public sectors, EGAT has agreed to revise the power purchase agreements to absorb local currency exchange risks. I will not elaborate on the revised payment arrangement in this connection, however, it is reported that generally speaking around 90% of the risks associated with foreign exchange in the capacity payment portion is now taken by the public sector.

Also, it is essential that several ECAs have agreed to expand their support so as to enhance the climate for private investment in Thailand. Exact terms for such enhancement are still under negotiation, and unfortunately are not available at this moment. Overall frameworks seem to have been agreed for at least some on-going projects. Owing to this new support from the public sector, even after the currency devaluation, private power transactions are not totally suspended. We, as lead arranger, are currently negotiating with sponsors for several private power station projects for Thailand, and at least two of them are expected to be closed in the near future.

Pagbilao Power Project:

Project: 2 x 350 MW Coal fired thermal power station
Location: Pagbilao, Quezon, Philippines
Sponsors : Hopewell Energy International Limited
Power Purchaser and Fuel Supplier: National Power Corporation (NPC)
Our Role: JEXIM/MITI Facility Agent
Senior Lenders: IFC, ADB, JEXIM, USEXIM, CDC
Loan Facility: US$698,000,000

Hub River Power Project:

Project: 4 x 300 MW Power Station
Location: 40 km west of Karachi
Sponsors: National Power, Xenel, Mitsui, IHI.
Power Purchaser and Fuel Supplier: WAPDA
Our Role: World Bank ECO Guarantee Agent, Technical Bank, Co-bookrunner
Loan Facilities: US$867,000,000

CONCLUSION

It is clear that to a large extent some of the risks can be eliminated by the active cooperation of the public sector or ECAs that represent government/ECA participation in the project. Removal of these risks aids in attracting a larger number of international participants, and this would in turn produce healthy competition and bring down the costs. A large number of private sector participants would ensure that the appropriate technology would be used and the risks associated with the project would be borne by the appropriate parties.

Thus, in conclusion to what we have learned and what we have seen, we can safely say that success in the field of power generation requires a very close understanding between the different parties involved. The role of the public sector/ECAs and their participation in the projects can be a very important factor in encouraging the involvement of the private sector and plays a vital role in the involvement of international investors.

Even as the private sector expands its role, however, the public sector will remain important. The public sector should be responsible for establishing and maintaining the frameworks required for private participation. Especially taking account of market conditions in the region, I would like to review four points raised by the World Bank for facilitating private participation in infrastructure projects. The Bank lists the following in its report entitled *Infrastructure Development in East Asia and Pacific*:

Conducive policy, legal and regulatory framework
Government decision-making and project facilitation
Unbundling mitigation and management of risks
Capital markets development and term financing

The creation of conducive sector policies, robust institutional structures, and a credible regulatory framework is essential for enhancing private participation on a sustainable basis and for improving the efficiency of the sector. Without the necessary policy and institutional reforms at the sector level, private investors are unable or unwilling to assume commercial risks, negating the objective of reducing public sector obligations.

Transparent and competitive mechanisms for private project approvals and preparatory measures by public agencies to reduce the costs and risks involved in bid preparation are particularly important for large infrastructure projects. They increase competition, can lead to significantly reduced costs and are essential to gain necessary public support and

credibility.

Definition of governmental policies and institutional mechanisms for unbundling, sharing and managing of risks that are applicable to all potential entrants in a sector are seen as important by project sponsors and capital markets alike. They are also important for the involvement of multilateral development banks.

Lastly, the development of domestic capital markets and of mechanisms to facilitate procurement of long-term debt requires top priority in most developing economies. The creation of fixed-income securities and liquid bond markets is crucial for infrastructure projects as well as for the health of the economy (*Infrastructure Development in East Asia and Pacific Towards a New Public-Private Partnership* The World Bank 1995).

The current perception of the region has changed since the recent Asian currency devaluations. Some economists and financial institutions are taking a bear-ish view towards East Asian project finance. We believe however, that over time East Asia is the key market for infrastructure finance as the region still requires further infrastructure development, and accordingly, further participation from the private sector is expected. Although the degree and mechanism of private and public participation will vary from one economy to another, the risk sharing scheme, and in particular currency risk sharing, will be determined after thoughtful review and discussions among concerned parties in response to prevailing market conditions.

Recent developments in Thailand are a good example. The risk sharing was negotiated and agreed at the time of the execution of project agreements. Responding to the recent Asian currency devaluations, risks associated with foreign exchange fluctuations have been passed on to the public sector. Examples like this illustrate the ability of sponsors and lenders to continue moving forward in developing the infrastructure of East Asia.

We at BTM are very pleased to be one of the active players in the market right now. We would like to continue to play a leading role in the Asian power industry, and contribute to the development of the industry in the region.

CHINESE TAIPEI: PROJECT STRUCTUREING TO ACCESS EVOLVING FINANCIAL, CAPITAL AND RISK MARKETS

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CHINESE TAIPEI: PROJECT STRUCTURING TO ACCESS EVOLVING FINANCIAL, CAPITAL, AND RISK MARKETS

I. Overview of Infrastructure Project Development in Chinese Taipei

- Past infrastructure projects were funded by government which also created various state-owned monopolistic enterprises.
- The concept of inviting private sector to participate in infrastructure projects is a recent development, dating from the early 90s.
- The private sector has mainly participated in transportation, power, and incinerator projects.

    - *Power projects: 11 IPP projects, total installed capacity of 9700MW by 2002.*
    - *Transportation projects: Chinese Taipei High Speed Rail Project, Taipei-CKS Airport Rail Link Project.*
    - *Incinerator projects: 8 BOT/BOO projects to be completed by 2001, capable of disposing 4,500 tons of garbage per day. 10 more projects have been approved to handle 4,050 tons of garbage per day in the future.*

- The government has taken measures to encourage the participation of private sector in infrastructure projects by either privatizing existing state-owned monopolistic enterprises or liberalizing the markets through regulatory changes. *For example by the introduction of the "Encouragement Statute" for transportation projects and revising the Electricity Law to deregulate the power industry.*

II. Access to Financial Markets

- Due to demand from the private sector to finance their capital-intensive and often costly infrastructure projects, the concept of non- or limited-recourse project financing (depending on the type of project) has also been introduced.
- Since the introduction of the concept of privately invested infrastructure projects, the regulatory framework has been gradually evolving. However current project structures and commercial terms do not exactly follow international standards, which creates difficulties in raising international financing.
- The common obstacles usually involve the risk-sharing mechanism between the private sector and the government. Furthermore, the subtle definition of the government's role as a player and judge also complicates the situation. *Take power projects for instance: negotiating PPA with the state-owned monopolistic Taipower, land acquisition for sites, environmental standards, public protests are all issues that need to be addressed and clearly defined in the commercial contracts between the government and the private sector.*
- Obtaining international financing at this point is difficult, and the recent financial turmoil in Asia has shown the potential currency risk involved if large amounts of funds are borrowed from abroad for big infrastructure projects.

- However, liquidity in Chinese Taipei's financial markets has been sufficient to

support local projects. *Current funding sources for projects are usually provided through the application of the Medium to Long Term Fund of CEPD, whose main funding source is the Postal Savings Bank (over NT$1 trillion). The fund stands at a current amount of NT$400 billion or US$12.1 billion.*

- It is evident that the depth of the local financial market and related regulations have allowed projects to proceed. *For example Article 26 of the Encourage Statute exempted the single lending limit to an infrastructure project by commercial banks.*
- In order to undertake the project risks and provide the credit, the local banks will also have to adjust their conventional methodology when performing due diligence upon non-recourse financing projects.
- The local banks are gradually becoming more willing to provide loans for infrastructure projects because they have a more familiar understanding of the economic environment and the associated risks. *For example*, *a few IPP projects have achieved financial closing:*

    - *Mai Liao Project, 1350MW, Project cost: NT$36.6 billion (US$1.1 billion), Loan amount: NT$23 billion (US$687 million)*
    - *Ho Ping Project, 1300MW, Project cost: NT$42 billion (US$1.25 billion), Loan amount: 32 billion (US$955 million)*
    - *Everpower Project, 900MW, Project cost: NT$20.6 billion (US$615 million), Loan amount: NT$12 billion (US$358 million)*
    - *The Chinese Taipei High Speed Rail Project's NT$280 billion (US$8.36 billion) debt financing is also underway.*

- Both the regulatory framework and the attitude of the government are evolving and moving towards the direction of developing contractual terms that will meet international standards of project financing.

III. Access to Capital Markets

- Since infrastructure projects usually have a long pay-back period and long loan-repayment period, obtaining access to the capital markets will attract initial investors as well as provide channels to refinance the primary debt obligations.
- Regulations in Chinese Taipei still prohibit companies without any prior operation history from being listed on the stock exchange. However, the Singapore and Hong Kong stock exchanges already have special provisions and guidelines regarding the list of infrastructure project companies.
- Currently, the issuance of corporate bonds is controlled by various regulatory restrictions, and interest received from the purchase of corporate bonds is subject to a 20% withholding tax rate, which deters investors from possessing such assets.
- If regulations can be improved or relaxed for green-field project companies, the depth of the local capital markets can be very impressive. *The total amount of capital raised (IPO's secondary offerings) reached NT$138 billion (US$4.84 billion) in 1996, NT$208 billion (US$7.17 billion) in 1997, and NT$50.3 billion (US$1.5 billion) in the first quarter of 1998.*

IV. Access to Insurance Markets

- Due to the magnitude of infrastructure projects, the local insurance industry can usually retain only a limited portion of the insurance policy, since most of the risk would have to be reinsured in the international markets.
- In order to gain access to the capacity of the international insurance markets at a reasonable cost, regulatory changes, support of government, and top quality project management are all necessary elements to allocate the various risks appropriately among the various parties who are capable of bearing the risk.
- Since insurers will seek to minimize any risk exposures due to the project, especially during the construction phase, the most efficient way to reduce insurance costs and maximize coverage capacity is to develop international standard contracts and adopt international standards of project management.
- The success or failure of placing the insurance issue in the international markets will directly reflect the level of comprehensiveness of the risk-sharing mechanism of the project.

V. Conclusion

- The government, the banks, and the private sector investors are all going through the collective learning process of developing infrastructure projects on a cooperative basis. Having a consensus upon the implemented policies among various government departments is especially vital for creating a conducive environment for project development.
- A deeper understanding of the risk-sharing mechanism between the government, the private investors, and the financiers needs to be further developed.
- A more rigorous review and improvement of current regulations are vital to accommodate the development of further private participation in infrastructure projects. However, it is evident from the current incinerator projects that the structure and terms of the commercial contracts have been evolving and improving.

LEGAL FRAMEWORK FOR BOT PROJECTS IN CHINESE TAIPEI (AN INTRODUCTION TO THE NEW BOT LAW)

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LEGAL FRAMEWORK FOR BOT PROJECTS IN CHINESE TAIPEI (AN INTRODUCTION TO THE NEW BOT LAW)

Introduction

Since the 1980s direct private participation in infrastructure construction has become a worldwide phenomenon. Infrastructure projects in Chinese Taipei have long been financed by the government, which used to have constant budget surpluses. This financing did not become a problem until the end of the 1980s.

In order to promote private participation in the construction of transportation projects, a Statute for Encouragement of Private Participation in Transportation Infrastructure Projects was enacted in 1994 (the Encouragement Statute). The Encouragement Statute also aimed to resolve expropriation problems and to provide incentives to project sponsors. However, this Statute is not applicable to non-transportation projects.

Private participation is the key to BOT and privatization. In order to encourage private participation in non-transportation projects and to remove certain obstacles encountered by developers under current laws, a new BOT law, the Law for Facilitation of Private Participation in Public Infrastructure Projects, was drafted. This law is waiting for passage at the legislature.

The new BOT law was drafted based on two principles–maximum private participation and greatest government prudence. Not only transportation, but also non-transportation projects, such as incinerators, power plants, water and sewage systems, industrial parks, theme parks, education and health facilities, etc. are included. Government supports, tax incentives, subsidies, preferential loans and related regulations also explicitly spell out these principles.

The types of private participation were expanded to also cover BOT (Build -Operate-Transfer), BT (Build-Transfer), BLT (Build-Lease-Transfer), BOO (Build-Own-Operate), BTO (Build-Transfer-Operate), ROT (Rehabilitate-Operate-Transfer), ROO (Rehabilitate-Own-Operate), etc.

Our government has chosen 14 infrastructure projects for private involvement, amounting to over US$43 billion. They include the high-speed rail project/line/link, independent power plants, incinerators, and development of industrial zones, harbors, etc.

Government Supports and Incentives
Under the New BOT Law

Supports and incentives under the bill include government appropriations, subsidies, loans, grants of concession, and tax incentives, etc.

1. Foreign Investment Restrictions

There is no nationality restriction imposed for projects undertaken under the new BOT law and foreign companies are free to participate in and undertake BOT projects in Chinese Taipei. However, certain public-utilities industries listed in the Negative List, as issued pursuant to the Statute for Investment by Foreign Nationals, are restricted from foreign investment. Nevertheless, the bill empowers the government to lift the foreign investment restrictions under other laws if it deems it necessary.

2. Expansion of Let-use Types of Government-owned Land

The bill continues to adopt the mechanism of land support by the government. Moreover, it expands the let-use types of government-owned land. If necessary, government-owned land will be provided for use by the project company through lease arrangements, superficies, trusts or equity contributions in kind. If in line with policy requirements, such land may also be sold to the project company.

3. Finance

Bankability is the key factor in a BOT project. Certain financing restrictions under current banking and securities related laws have been legal obstacles hindering the progress of BOT projects which require large-scale financing. Therefore, the bill adopts the following approaches:

i. It continues to adopt the mechanisms of interest subsidies and preferential loans under the Encouragement Statute, so as to increase the IRR of the project company.

ii. With the approval of the Ministry of Finance, loans provided by financial institutions for projects under the BOT law will not be subject to financing restrictions such as the lending term, lending quota, etc., under current Banking Law.

iii. Foreign financial institutions which participate in the syndication are entitled to perfect their mortgages even though they do not have a branch office in Chinese Taipei.

iv. A public offering project company may issue corporate bonds without being subject to the profitability requirements of the Company Law.

v. The project company may offer its shares to the public without being subject to

the profitability and net-worth restrictions of the Company Law.

4. Tax Incentives

The bill continues to adopt the tax benefits available under the Encouragement Statute, which include five-year tax holidays, 5% to 20% investment credit, duty exemption or deduction, exemptions or deductions in land, building and deed taxes, etc.

5. Risk Sharing and Minimum Revenue Guaranty

The bill allows certain project risks to be taken by the government agency implementing the project. For example, the incinerator contracts impose a take-or-pay obligation on the government agency, therefore assuring the project developer that it will be paid for making a stipulated capacity available, whether or not waste is actually treated. In addition, the bill authorizes the government to guarantee a developer of public utilities or transportation projects a minimum revenue on a case-by-case basis.

6. Lender's Step-in Right

A lender's step-in right is an essential requirement of project financing worldwide. However, it took considerable creativity to design an appropriate legal structure for such a right under the Encouragement Statute given the statutory non-assignability of the concession. The bill explicitly authorizes the take-over of the project by the lenders before the government can terminate the concession agreement, thereby providing a clear legal basis for the lender's step-in right.

7. Compulsory Purchase of Project Assets

Like the Encouragement Statute, the bill also gives the government a right to compulsorily purchase the necessary and usable operating assets in case of the early termination of the concession agreement.

Conclusion

It is generally expected that the new BOT law will provide for a more comprehensive legal framework for future projects to come. We at Lee and Li especially take pride in contributing to the birth of this new law. We believe the new BOT law is constructive and should be able to promote private investment in infrastructure projects in Chinese Taipei.

PUBLIC/PRIVATE PARTNERSHIPS

PRIVATE SECTOR PARTICIPATION IN MALAYSIAN INFRASTRUCTURE PROJECTS

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PRIVATE SECTOR PARTICIPATION IN MALAYSIAN INFRASTRUCTURE PROJECTS

A. PUBLIC/PRIVATE PARTNERSHIP IN MALAYSIA

Privatisation

Since the early 1980s, the Malaysian Government has aggressively encouraged private sector initiatives in economic development.

"The privatisation policy introduced in mid-1983, was based on the premise that the transfer to the private sector of activities and functions which have traditionally rested with the Government will bring about positive changes to the organisation, management and the performance of the public enterprises. It is in line with the overall policy towards greater liberalisation of economic activities aimed at strengthening the role of the private sector as the engine of growth in the country's economic development....Since the inception of the programme, a total of 416 projects had been privatised. Of the total, 325 represent existing projects involving the taking over of Government's functions by the private sector while the rest represent new projects involving the construction of infrastructure and utility projects such as roads, light rail transit systems, independent power producers and water supply projects." *(*Extract from speech entitled *"Malaysia's Privatisation Policy: The Rationale, Policy and Process of Privatisation in Malaysia" delivered in July 1997 by Tn Hj Zainuddin Hj Abdul Rahman, Deputy Director of the Economic Planning Unit of the Prime Minister's Department.)*

The Government has consistently given its commitment to encourage greater private sector participation in developing and financing major infrastructure projects. Privatisation has been, and continues to be, a key component of the Malaysian Government's economic policy. In particular, a number of specific policies and measures have been introduced by the Malaysian Government to facilitate implementation of major infrastructure and utilities projects. The private sector in Malaysia has risen to the challenge. Through the privatisation process, they have initiated and/or accepted the opportunity to undertake the development, financing and construction of a wide range of large-scale infrastructure projects.

"11.106 Recognising that an efficient and reliable infrastructure and utilities network is critical to economic growth and enhancing the nation's competitive strength, substantial investments are required to finance the sector's development. A total of RM19.2 billion will be allocated by the Government for the sector with the private sector investing a sizeable amount, mainly through privatisation projects. Of the total allocation, RM9.8 billion is for road development. The allocations for the airports and ports subsectors are RM1.3 billion and RM486.8 million, respectively. For the rail and urban transport subsectors, RM3.4 billion and RM522.6 million, respectively will be allocated, while communications and utilities will be allocated RM3.7 billion. This sizeable infusion of public sector funds will also offer significant opportunities for

private sector involvement in the construction, maintenance and management of transportation infrastructure and utilities. At the same time, private sector investments in privatised infrastructure projects are expected to total RM68.3 billion*." (extract from the Seventh Malaysia Plan 1996 - 2000)*

Malaysia Incorporated

The Malaysian Incorporated Concept was first propounded by YAB Dato' Seri Dr Mahathir Bin Mohamad, the Prime Minister of Malaysia on 25 February 1983 and was reaffirmed at the launching of the Malaysian Business Council on 28 February 1991.

"The Malaysian Incorporated Concept seeks to foster close and mutually supportive co-operation and understanding between the private and public sectors. It envisages the two sectors working in a symbiotic relationship within a corporate or business entity jointly owned by both sectors in pursuit of shared corporate goals. The resulting benefits of this cooperative relationship in the language of benefits of this cooperative relationship in the language of business, means a higher level of profits leading to spin-off in economic investment, expansion and growth. The Government's interest in the success of the Malaysian Inc. lies in generation of employment opportunities, rapid industrialisation, promoting international competitiveness and increasing national resource to fuel socio-economic development of the nation. It is clear that the Malaysia Incorporated policy is aimed at intensifying the growth and expansion of the private sector which has been identified as the engine for economic growth. The onus is one the public sector to ensure that the private sector growth is facilitated to the fullest extent so as to spur economic growth and contribute more towards national development." **(***Extract from speech by Dr Abdullah Bin Abdul Rahman entitled "Malaysia Inc. Revisited: Towards Greater Public-Private Sector Cooperation to Achieve Vision 2020" delivered at the National Conference on Corporatisation & Privatisation 29 -30 June 1992.)*

B. POLICY FRAMEWORK FOR PRIVATE SECTOR PARTICIPATION IN INFRASTRUCTURE PROJECTS

The Malaysian Government has, over the years, consistently promulgated policies and introduced measures to encourage and facilitate private sector participation in infrastructure projects. There is a policy framework to guide the private sector on the substantive and procedural requirements to be met before a company may participate in any privatisation of infrastructure projects. Set out below are excerpts from relevant Malaysian Government policy documents or statements on the role of the private sector in infrastructure projects.

Privatisation Masterplan (1985)

Paragraph 80 (page 41) dealing with major components of the Privatisation Action Plan states as follows:

"(vi) New Projects

These are projects that have traditionally been developed by the public sector. Examples of these are roads, bridges, water supply projects. These projects can be developed by the private sector if it is allowed to collect revenue from the users of these projects. Many such projects have already been privatised by way of the "BOT" concept. Such projects are being identified during the formulation of the Sixth Malaysia Plan." (BOT is short for build, operate, transfer.)

The Second Outline Perspective Plan 1991– 2000

"5.48 The provision of a wider and more efficient infrastructure system in an increasingly complex transport network with higher traffic densities will require substantial resources. While the public sector will continue to mobilise funds to meet these demands, greater private sector involvement will become increasingly important. In this regard, the Government, through its privatisation programme will continue to promote private sector participation in the provision of these facilities. Apart from the provision of physical infrastructure, the Government will also concentrate on resolving issues confronting the sector such as pricing, cost recovery, regulation and intermodalism in order to raise the sector's performance."

Sixth Malaysia Plan 1991–1995

"10.03 During the Sixth Malaysia Plan, the Federal Government will continue to expand, operate and improve transport modes to maintain Malaysia's strength in providing good infrastructure and communications facilities. The programme shall adequately serve the rising demands for such a facility and support the rapid growth in industrial, tourism and other economic activities. The private sector is expected to play a more complementary role and take advantage of the opportunities created by Government initiatives.

The Government will provide the environment conducive to such private sector initiatives for speedy implementation of projects. In addition, the public sector will continue to place emphasis on the development of infrastructure and utilities in the less-developed regions."

Seventh Malaysia Plan 1996–2000

"III. PROSPECTS, 1996–2000"

"11.51 The development of the infrastructure and utilities sector will be further intensified in order to sustain the growth momentum of the economy. With the economy anticipated to grow at 8.0 per cent per annum during the Seventh Plan period, the supporting role of infrastructure and utilities remains vital. In order to effectively respond to this challenge, it is imperative that continuous upgrading and rehabilitation programmes of existing capacities as well as investments in new capacities be undertaken. In addition, the current focus towards improvement in efficiency and productivity to enhance existing capacities and the nation's competitiveness will be accorded higher level of urgency within the sector. The development thrust of the sector during the Seventh Plan period, will be guided by the following strategies:

- *Supply-driven approach will form the basis for the expansion of infrastructure capacities taking into consideration long-term demand, development projects and economics growth in order to ensure the availability of supply upon demand. This approach will be applied particularly to large infrastructure projects that are indivisible and require long lead time;*

- *Long-term integrated planning that incorporate a total approach will be adopted in infrastructure planning to enhance coordination and ensure a more orderly, systematic and comprehensive development and implementation of infrastructure;*

- *The promotion of multimodalism in the transport sector will be actively pursued to enhance the interfacing of all modes of transport as well as related services in order to increase the efficiency of infrastructure facilities and supporting services;*

- *Further expansion of infrastructure facilities to rural areas in order to enhance accessibility in line with a more balanced and equitable distributive policy; and*

- *Continuous review and stricter enforcement of performance standards and technical specifications for infrastructure projects in order to enhance productivity, efficiency and quality of life."*

C. THE ROLE OF GOVERNMENT IN SUPPORTING PRIVATISED INFRASTRUCTURE PROJECTS

Over the years, the Malaysian Government has provided support, whether directly or indirectly, to the private sector in order to facilitate the successful implementation of privatised infrastructure projects. Policy measures which have been adopted by the Government typically provide either :

- Direct financial assistance to support and bridge the anticipated shortfall in the initial revenue stream of selected strategic projects; or

- Indirect (i.e., no financial assistance) means of support to facilitate the development and implementation of projects.

Direct Financial Support

1. Government Support Loan For certain infrastructure projects which, due to their size, complexity or risks, cannot be undertaken by the private sector on its own the Government has acknowledged that some form of financial support is required to ensure that these projects are viable and bankable. Also, the Government may be prepared to provide financial support to ensure that the tariffs or charges imposed by the sponsors of the project are kept at a level which is reasonable and affordable for consumers of the product or services. Thus, in recent times, the Government has provided support loans for the North-South Highway project, the privatisation of the National Sewerage System, and the Light Rail Transit project. To the extent that these loans are given at

concessionary interest rates and/or a longer repayment period, *vis-à-vis* commercial loans, they are known as "soft" loans.

2. Land Cost It is usual for the Government to agree to absorb the cost of acquiring land (including the cost of re-settling squatters) required for infrastructure projects such as highways. Initially the Government provided the land at no cost to the concessionaires. More recently, the Government policy is to pay for such land costs as an advance which will be reimbursed by the concessionaires as and when the project is able to generate sufficient revenue.

3. Fiscal Incentives In selected cases, sponsors of projects may be able to claim a range of fiscal incentives in order to lower the cost of financing projects. These could include exemptions from import duties for capital equipment and tax holidays for a specific period of time to enable the project to earn sufficient revenue.

Indirect Support

1. Regulatory Framework The Government has initiated amendments to existing legislation and regulations, or introduced new legislation, to facilitate the successful implementation of privatisation projects and services. For example the Sewerage Services Act 1992 was enacted to establish a new regulatory framework for the privatisation of sewerage services throughout Malaysia.

2. Co-ordination Among Government Agencies The Government can facilitate the implementation of a major infrastructure project by forming a special committee or task force to co-ordinate the planning and development process. This is important for projects which have to deal with a multitude of regulatory approval involving the Federal government, State government and relevant local authorities.

3. Institutional The Malaysian Government introduced guidelines for the listing of infrastructure projects in September 1995. The Guidelines for Public Offerings of Securities of Infrastructure Project Companies (IPC) reflect the Government's commitment towards broadening and deepening the domestic capital market as an efficient and reliable conduit for infrastructure finance. The main requirements which the company must meet under the IPC Guidelines are :

- The project cost is not less than RM500 million and the project must be able to generate income sufficient to give a suitable rate of return to its shareholders ;
- These companies are awarded a concession or license by the Government or State agency, with the remaining concession period of not less that 18 years at the time the proposal is submitted to the SC; and
- The paid-up capital of these companies must be at least RM40 million with at least 25% of its issued and paid-up capital publicly held. The promoters of the project must retain at least 51% of the paid-up capital for a minimum period of 1 year.

D. LESSONS LEARNT FROM EXPERIENCE TO DATE

I would like to suggest that there are useful lessons to be learnt from the Malaysian experience with privatisation of infrastructure projects to date. The comments below are culled from my personal experience in advising project sponsors, banks contractors and Governments in the development, construction and financing of infrastructure projects in Malaysia and elsewhere. The summary does not appear in any particular order of importance.

1. It is extremely important for the Government to enact an effective regulatory framework before embarking on any privatisation of infrastructure projects and services. International experience suggests that to be effective, regulatory institutions should be characterised by clarity of objectives, policy framework and jurisdiction; accountability, autonomy; and adequate resources. If these principles are followed, there is greater chance that regulation will be stable, transparent and predictable, thereby reducing risks faced by private investors in infrastructure. Regulation should also be enforceable, simple and provide incentives for efficient operation. I believe it is preferable to start by outlining some broad principles governing the Government's approach towards regulating the provision of privatised infrastructure projects and services. These should then be tested to determine whether they can accommodate the specific requirements of the respective sectors or industries.

2. All parties involved in undertaking a major infrastructure project must strive to achieve a "win-win" situation. Although each of the parties involved in a project has different interests and concerns, the project cannot proceed if any one party is allowed to pursue its interests to the exclusion of all others. The key is to understand and accept that everyone involved is negotiating for the project to proceed and all must be willing to accommodate the interests and concerns of others. If possible, under such a scenario, sensitivity, flexibility, and a willingness to seek solutions through compromise is the preferred approach.

3. Governments must acknowledge that their continuing role is being transformed. The Government is increasingly playing the role of a co-ordinator or facilitator to ensure the success of a privatised project or service. However, sometimes it may have to be directly involved in insuring against policy-induced risks affecting a project. Also, the Government will become increasingly wary of providing direct financial comfort or assurances to sponsors or lenders to facilitate the success of a project.

4. Privatisation of infrastructure projects through the BOT or BOOT structure is more suitable for certain industries or sectors. I suggest that they are particularly suitable for capital intensive service industries such as utilities. Alternatively, they could be appropriate for undertaking major strategic projects with some monopolistic characteristics and a long gestation period.

5. Privatisation of infrastructure services which require the concessionaire to assume the collection risk from individual consumers will be more difficult to implement. A substantial amount of resources and commitment towards creating public awareness and education are necessary pre-conditions for successful implementation. Also, there must be strong political commitment on the part of the Government to ensure that the greater social benefits from such privatisation are accepted, notwithstanding some short term concerns of consumers.

6. If it is necessary for a privatised infrastructure service to charge consumers directly, I suggest that the concessionaire and the Government should start small first and develop a successful model. This could then be used as the basis for expanding the coverage to other areas.

7. Privatisation of new infrastructure projects or services must not result in leakage or loss of market for existing privatised projects or services. It is not disputed that the Government should not be constrained from exercising its right to privatise new projects and services. The question, however, is whether the privatisation of these new projects or services should be allowed if they materially impinge on the rights and obligations of existing concessionaires who have, in good faith, implemented a project earlier with the Government's consent.

8. Project sponsors have to take a broader and more long term perspective of their investments in privatised infrastructure projects or services. They will need to reconcile their interest in protecting their revenue stream and profits from a project with the practical and political considerations involved in having the full cost of their product or service borne by the Government and consumers. Also, they cannot assume that the Government will necessarily provide direct financial assurance and comfort to facilitate financing of projects if these prove to be politically sensitive.

INFRASTRUCTURE CONCESSIONS IN CHILE

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INFRASTRUCTURE CONCESSIONS IN CHILE: FOUNDATIONS FOR THE STRATEGIC AND ECONOMIC FRAMEWORK[1]

Abstract

This document attempts, in a general way, to show the economic and financial foundations of the Concessions Program for roads that the Chilean government is carrying out. The general strategy has been to prioritize concessionary projects for already existing roads, and not new toll roads that would serve as a substitute to the freeways. Given the functions of production, cost and technology, and the desire to maximize revenue, proprietors with different degrees of monopoly power are subject to different restrictions: institutional, market, asymmetric information, risks and financing. The independent and exclusive treatment of the problems of resource allocation that the presence of a classical monopoly presents in any society, for example via a mechanism of economic regulation, doesn't assure the success of a BOT. Moreover, it is necessary to observe and analyze the aspects related to the financing of projects, the careful analysis of risks, the form in which they are distributed, as well as the contractual aspects and the relationships that are established between the conceding public body and the Concessionary Association. On the other hand, an exclusive concern with the financial aspects of the project without considering the variables associated with the problem of the monopoly does not assure the BOT´s success in terms of social efficiency. It is therefore essential to keep in mind the necessity of the State's participation, regulating the economic aspects associated with the monopoly (rate of return, incentives, quality of service), as well as the financial aspects associated with the conception of the business (sources of financing, risk allocation, guarantees, insurance and compensations).

1. General Antecedents

During the last few years, Chile has experienced an important process of transformation that has led it to have one of the more open, competitive economies, and the lowest rate of inflation, in Latin America.

Partly, this is a result of the decision to participate in a world where borders do not exist, from an economic point of view, and where the possibilities of success depend on the capacity to be efficient on an international level.

However, the progress of the country has left important deficits in sectors like transportation infrastructure, which could become a threat to growth. If not eliminated, these deficiencies could, among other things, diminish the competitiveness of Chilean products in foreign markets, reduce productivity and restrict employment growth.

Also there are big gaps in the basic infrastructure, which frequently impede the integration of important segments of the population to the growth that the rest of the country experiences. Chile advances, but the development leaves pockets of poverty that accentuate the economic and social differences.

In other words, to a deficit in the road sector of US$6.25 billion (see Table 1), is added US$3.555 billion of private capital through the concession system. The difference will be provided by public funds through the investments that the MOP makes in construction, repair, expansion, rehabilitation, conservation and maintenance of urban and inter-urban roads.

The collection of tolls in Chile and the alternatives:

The collection of tolls in Chile was generated by the growing demand on the part of the State to maintain roads in good condition and continually improve the existing road network.

By Law of the Republic, in 1963, the country's first tollbooth was installed. This system began functioning with the establishment of the Angostura Tollbooth, located at Km. 57 on South-bound Route 5.

In February 1964, activities were begun on the Zapata Tollbooth, located at kilometer 65 on Route 68, that joins Santiago with Valparaíso. In 1966, the Lampa Tollbooth was built, 26 kilometers north of Santiago. The tolls of Lo Espejo and Pomaire, created in 1966 and 1967, respectively, were finished in 1979 and 1989. It is the same case with the Lagunillas Tollbooth, which began functioning in 1968 and was finished in 1977.

In 1969, the Perquilauquen Toll was built, 350 kms from Santiago, Route 5; in 1972 Lo Prado was built at the 25 kilometer mark on Route 68. In 1972 the Chacabuco Toll, at the 60 km mark on Route 57; Las Vegas, in 1976, located at km 88 on North Bound Route 5; Quepe, in 1975, at Km 365 on the South Bound Route 5; Quinta, in 1979, at km 155 on South Bound Route 5; Cristo Redendor, in 1981, at Km 10 on Route 57; Chaimavida, in 1982, in the access to Concepción (Route 148). In the last decade, 2 additional toll booths have been built: El Paico, in 1989, at Km. 50 on Route 78 and, most recently, the Coronel toll booth, which began functioning in 1994. All of the toll booths are administered, at the moment, by the State through the Ministry of Public Works.

In general, there have been legal arguments associated with the collection of tolls on roads that don't have alternatives. The legal arguments are based on two Acts guaranteed by the Constitution: the first Act guarantees free movement from one place to another in the Republic, and it could be considered diminished when there is a toll in a route which is the only feasible way to get to a certain geographical point; the second Act preserves property rights, and therefore, the toll could be considered a limitation of the use of private domain property for which the only access is by means of tollroads, or of the use of the motorized vehicles whose domain is also protected by the constitutional guarantee of property. Also, since the public roads are defined by the Civil Code as national goods of public use, the use of these goods should be gratuitous, unless there are alternatives without cost for the user.

In this respect, a legal report from March 1994 points out the following [(6):]

- Regarding the principle of free transit, it assures that it is not weakened by the fare or toll, affecting only the gratuity, not the liberty to exercise the right. On the other hand, the cost of the toll is only one of the components of the cost a trip always implies. Also

In fact, during the last few years there has been a growing demand for public infrastructure. This demand principally originates from the business sector, the growing industrial zones, the public service of the country and the social sectors, which have fallen behind in the process of economic growth that has taken place in this period.

The current requirements of annual investment in public infrastructure are estimated to be US$1.8 billion, which undoubtedly, the fiscal annual budget cannot satisfy. The Ministry of Public Works (MOP) has an annual budget of close to US$800 million and it will increase at a rate of approximately 10% annually during the next five years. An important part of these resources is devoted to the maintenance of the already existing infrastructure, which leaves very little available for expansion. By the year 2,000, conservative estimates calculate that the accumulated deficit will be more than US$11 billion.

Table 1: Deficit of Infrastructure 1995- 2000

AREA	General investment (millions of USD)
Roads and Highways	4,250
Urban Roads	2,000
Water Treatment	1,480
Drinkable Water	950
Equipment	810
Ports	450
Railroads	470
Watering/Irrigation	370
Control of Rainwater	195
Airports	100
Total	11,075

Source: Ministry of Public Works, 1996

Road infrastructure deficits due to problems of congestion, pollution, contamination, and accidents, and cargo losses produced by the inadequate transport of merchandise, cause the value of lost competitiveness to reach more than US$1.5 billion.

On the other hand, the international experience of emerging economies indicates that investments in infrastructure should reach between 3.5 and 5.5% of GDP. During the next five years 3.5% of GDP in Chile would imply investing, on average, around US$1.8 billion annually, with the economy's growth at 6%.

By means of example, during the 80s, in road infrastructure alone, only 30% of what was needed for road maintenance was invested, and the portion allocated to the paved network was even less. In this same period, a consistent increase in the quantity of automobiles was observed, which has further intensified the deficits in road infrastructure. In fact, between 1984 and 1994, the number of cars doubled, with a significant impact on the traffic circulation speed in cities and in the index of accidents, as is shown in the following table:

Table 2: Speed of Traffic Circulation in Greater Santiago

YEAR	Speed of Traffic Circulation at a Given Hour (Km/Hour)
1977	37.4
1991	24.6
1995	20.0

Source: Interview Origin-Destination 1991-
MOP Estimate 1995

Table 3: Accidents on Chilean Highways

YEAR	Accidents on Highways (per 100,000 people)
1985	8.7
1990	11.9
1994	18.3

Source: Ministry of Public Works, 1994

Regarding airports, the growing economic activity experienced recently in Chile has produced a marked increase in the demand for air transport. Passenger traffic, national and international alike, has grown up to 20% annually, surpassing by far the anticipated traffic increase. In 1995, the total number of passengers using airports was 3.5 times greater than that of 10 years ago. This situation has caused a high degree of saturation in the use of the airport infrastructure, requiring urgent expansion in the capacity of most of the country's terminals to meet the growing demand.

Additionally, the short-term challenge the country has set itself of becoming the entrance to Latin America for Southeast Asia, Australia and New Zealand, as well as adequately taking advantage of the benefits offered by Mercosur, requires an additional investment of more than US$900 million in associated infrastructure to facilitate economic integration.

It is understood that the government's central policy objectives for infrastructure, to be carried out by the Ministry of Public Works, are: the consolidation of a network of freeways, double-lane highways and bridges that connect the north of the country to the south, as well as the construction of highways that unite the coast with the mountain range, and the modernization of airports.

Due to the fact that the budget for public spending does not provide the necessary resources to meet these challenges, at the beginning of the 1990s the decision was made to create the conditions necessary to invite the private sector to participate in the process of investment in, and maintenance and exploitation of these infrastructure works. The most appropriate form of accomplishing this task was through a concession program of public infrastructure, in which the private sector provides financing to build, operate, and transfer the infrastructure.

In fact, the system of roadway concessions is oriented towards supplementing the fiscal financing of public infrastructure by means of incorporating private capital. Its underlying basis is the recognition that the assignment of these resources will provide a response adapted to the growing demand for the infrastructure required for the economic and social development of the country.

In this system, the private sector is expected to finance all the profitable works, private and social alike, recovering their investment by charging the user via tolls. In this way, the State will free public resources, allocating them to programs of a social character, and to concrete initiatives that strategically benefit the country, projects which currently don't have enough demand to appeal to the private sector.

In this context, the system requires an understanding between the public and private sectors in areas such as: project design, terms of concession, levels of road security and types of electronic collection, all of which will influence the quality, service and design of the business. With this in mind, the State is creating the legal, financial and regulatory conditions to encourage private investment while, at the same time, guaranteeing the profitability of the projects.

2. The Concessions: Legal Framework and Stages of the Process

The system establishes that the State will issue the concession of the rights of the public roadways to certain private agents that have previously qualified for such a position, by means of a public bidding process, for a specific period of time. The Law determines that the concession of goods of public or fiscal use, whose administration is given to other authorities, or the effective legislation of which requires the intervention of other bodies, will be granted a preliminary report on the corresponding authority or body. Also, the concessionary company will be authorized to exploit the goods subject to concession, independently or to a third party, in all events remaining solely responsible to the Ministry of Public Works.

From the normative point of view, the Ministry of Public Works and the private investors (firms) will establish relationships of co-existence in function to the contractual characteristics of each bidding. These projects, internalizing an adequate level of both societal and privately competitive profitability, are subject to a reasonable degree of risk, terms of operation (time tables), vehicle demands and guarantee levels that assure the financing of the project.

The MOP functions as a regulator which, in practical terms, means providing the investors with appropriate signs and incentives, in such a way as to facilitate both their protection of existing roads and the successful development of the concession projects. Moreover, it should protect and maintain the public's interest by means of adequately maintaining and supervising the level of service received by the users.

By means of the process of awarding the concession, the MOP hires the awarded concession-holder to construct and maintain the project. Nevertheless, projects that only involve maintenance and road improvement could also be open for bidding, even though

undertaking initial works, such as improvements and the construction of important structures (i.e., bridges, tunnels, etc.) does not apply. In these cases, only the recruiting of the corresponding service is anticipated.

The entity that is awarded the concession directly finances the investment in its entirety, providing an amount which includes the costs of the actual construction of the work proper, as well as the conservation, maintenance and operation of the same. The work will be done at the concessionaire's risk and the necessary expenditures for its termination will be made up-front. Nevertheless, the National Treasury will agree to the payment of damages that are established by the Basis of the Bid (BALI) of each awarded project, according to an outline of the risk distribution between the concessionaire entity and the State.

Upon granting the rights of exploitation of the work to the concessionaire, specifically the rights of use and privilege, the State is providing the opportunity to recover all of the invested capital. Nevertheless, the property and disposition of the public goods in concession, is privy, at all times, to the State, due to the fact that their use and privilege is only temporarily under the private agent's management. (See Appendix for DECREE No. 900 Ministry of Public Works Legal Framework)

The Concession

The concession basically consists of the State's delegation of the design, construction, operation and maintenance of roadway works to a private company by means of honoring an equitable contract that normalizes the relationship of 'concessionaire (firm) - State (regulator).' It is understood that the expense of the construction and maintenance contract will be paid by means of the temporary concession of the exploitation of the completed work.

This company, whether with its own financing or that of a third party, will build the contracted work, and will assume its administration, lending this service for the amount of years agreed upon, which shall be established in the contract. During this time the company will collect a toll from the users of the public goods in concession. This revenue allows for the financing of invested capital and obtains an adequate return; because, once the term of the concession is over, the constructed work returns to the management of the State with a similar standard of maintenance and conservation to that which existed at the time of the service's initiation.

The Pre-qualification

Starting in 1995, a consortium has been able to participate in the bidding for pre-qualification status for the concession, whether it is a natural or judicial entity, national or foreign.

When the applicant for pre-qualification is a group of natural or judicial persons, or a consortium not formed legally as a partnership, they should register their intention to form a partnership, consortium or group of economic interest, indicating the percentage of

participation of each of the members. In this case, the selected applicant will be required to form a partnership, a contract of association or any other collaboration that will constitute it as a group or consortium of economic interest. This contract should be registered via public and private means.

The Pre-qualified parties are the only ones able to participate during:

- The stage of Analysis and Discussion of the Project, including: debates on the antecedents of the works to be constructed; engineering studies carried out by MOP employees; and the judicial, administrative, economic and financial aspects of the process, all of which will be used in order to define the characteristics of the concession project.

- The process of the Concession Bidding, that will begin once the stage of Analysis and Discussion of the Project is concluded.

In general terms, the requirements for the pre-qualification stage are:

- General antecedents of the consortium

- Economic and financial requirements and antecedents

  - Financial Status
  - Patrimonial requirements
  - Promissory Warranty/Stand-by Letter

Constitution of the Concessionary Association

The contract of concession distinguishes the stages of:
- Formation of the concessionary association
- Construction of the work on terrain of fiscal property
- Development and maintenance of the constructed works

Moreover, the awarding of the concession is distinguished from others, by means of public bidding. There is a prior evaluation by the MOP of the technical and economic antecedents of each applicant. The contract is awarded according to the economic variables of selection (rate, subsidies, period, etc.) that the respective BALI determines.

The concession grantee will have a minimum of 51% of the rights of the constituted association and it is not permitted to transfer the rights without previous authorization of the MOP, until the work has begun. In that event, the concessionary association will request MOP's authorization for any change in the property rights that implies changes in the control of the administration or operation.

The concessionary association should be formed as an anonymous association, with the ability to assume legal standing as a company or association. The paid up capital of the concessionary association at the moment of their constitution, should be at least equal to the

20% of the total investment budgeted for the execution of the work, unless the respective BALI determines a different participation level.

Administration and Management of the Concession

In any case, the concessionary companies are understood to be the sole and exclusive managers. Specifically, one concession one company. The exclusive source of their revenue (rates and volume of demanded service) emanates from the development of the concession [(2).]

The concession may be schematized as assets that remain effective exactly for the term during which the concession is granted. In fact, under the operative time frame of the concession, the value of the assets are expected to decline gradually, until they disappear. In this way, the management of those assets is equivalent to that of any fixed assets, with the understanding that the total investment in the work will be redeemed and finally canceled in its entirety by means of the corresponding imputation of revenues of the development.

Since the concessionary association has disposal of the concession contract, it is responsible for all the administrative and managerial decisions, in relation to the technological, human and capital resources which are necessary for the development of the endeavor. Said resources can be employed, in situations and conditions that are deemed necessary, with all of the assets corresponding to its completion, with the ability to employ third parties in the completion of the contracts for the lending of services, in the understanding that the concessionary company is solely responsible to the MOP for the final result, whether it be the concessioned or a third party.

To highlight, the concessions award process consist of different stages:

- ***Project Study and Design***

  This is performed by the Ministry of Public Works, whether it involves a privately initiated project or not. A pre-qualifying phase for bidders may be held so that studies are undertaken in conjunction with private parties interested in the project. This means that the Ministry issues a call for a public pre-qualifying round for a particular project, in which interested persons or legal entities take part.

- ***Request for Proposals***

  Proposals are requested by the Ministry of Public Works via a notice published once in the Government Gazette and twice in a newspaper with nationwide circulation. In the case of international tenders, requests for proposal will be sent to the appropriate Chilean embassies.

- ***Tender Preparation***

  Bidders prepare their tenders, which must include three main elements:

a) General Information: bidder's name and domicile, bid bond, and affidavit of offer reliability.
b) Technical Offer as specified in the Request for Proposals.
c) Business Offer as specified in the Request for Proposals.

- ***Disclosures***

  This stage comprises a period for written inquiries or request by bidders to the Ministry of Public of Works for clarification concerning the Request for Proposals. All bidders have access to the questions posed by the different participants, and to the replies made by the Ministry.

- ***Presentation of Technical and Economic Bids***

  Technical and economic bids are presented together, with the economic bid held for safe-keeping by the General Director of Public Works.

  a) Opening of Bids: technical bids are opened and all those not containing the information specified in the Request for Proposals are rejected.
  b) Evaluation of Technical Bids: a Technical Bid Evaluation Commission meets and examines each offer and disqualifies those not satisfying the minimum technical requirements established in the Request for Proposals.
  c) Opening of Economic Bid: on the date, at the time and place stipulated in the Request for Proposals, the Evaluation Commission announces the results of the technical round and opens the Economic Bids to those bidders whose Technical Offers have been accepted.
  d) Evaluation of Economic Bids: the award is made to the bidder who tenders the most advantageous Economic Offer, in accordance with criteria set forth in the Request for Proposals.

  Afterwards, the Ministry of Public Works must draw up and process the tender award decree and publish it in the Government Gazette.

- ***Aspects of the Tributary Management of the Concessionary Companies***

The Additional Cost (Tax)

For the purpose of the MOP, the only payments that establish the contract of concession, refer to the transfers that form part of the conventional price and the IVA[3] corresponding to the total value of the price of construction and maintenance of the work. On the other hand, the concessionaire will collect the price, rate or conventional subsidy as the only compensation for the services rendered, and any other additional benefits expressly specified.

The normative of concessions has foreseen that the development of the work does not report the concessionary company's benefits to the users, but rather, the advantage of this is related to the concept of benefits for the services rendered, of construction and maintenance of the

public work, stipulated by the MOP, where this advantage is offered by the State, by means of the fiscal revenues not collected, which correspond, in practical terms, to the same revenue generated for the operation and/or development of the work in concession. In other words, the toll payment or refund should be made by the user directly to the MOP, who would collect these resources to be subsequently reimbursed by it to the concessionaire in return for the bidded contracts. However, a mechanism has been devised which would allow for the same concessionaire to collect the tolls, paying itself the amount corresponding to the price of construction and maintenance of the work.

During the construction stage, the main purpose of the concessionary company is in relation to the accumulation of fiscal credit, in order to purchase the goods and services related to the physical formation and furnishing of the bidded work. The corresponding imputation of tax is made effective in the moment that the final or partial price of the construction is established, according to the particulars of each case. The imputation and, finally, the payment of the corresponding taxes occurs when the MOP approves the record of final or accumulated costs, with the corresponding structure of unitary prices of all parties participating in the work's execution.

During the development stage the tax refund will also be completed by the MOP, with an imputation for a percentage of the conservation expenses that the Concessionary Association assumes for these effects. This percentage shall be defined beforehand and established in the BALI.

Income Tax

The applicable tributary norms for the concession projects of public works corresponds to the income tax for profits up to 15%. They are equal to those which apply to other economic activities.

Once the construction of the work is completed, the price is determined corresponding to said contract, and work on the concession begins. The concessionary association begins to generate revenue, which can be distributed for the redemption or depreciation corresponding to their contract of construction and maintenance. In the latter case, the taxable base will be constituted by the monthly revenues of the development of the concession work, with the amounts previously imputed for the redemption of the work deducted or with the recovery of the construction price, in the proportion established in the contract.

The income for the work's development is equivalent to the total annual income, minus the investment amount, which is discounted. The depreciation cost is equal to the cost of the work, divided by the years required for the concession's completion.

In particular, they establish two alternative forms of depreciation or recovery of the investment:

- Linear Depreciation: The annual depreciation of the assets corresponds to a quota that tends to be constant and that is determined in relation to the time period of the concession.

$$T_t = 0.15 \left[I_t - CM_t - \frac{I_0}{N} \right] \qquad \forall t = 1 \ldots N$$

- Accelerated Linear Depreciation: The objective is to increase the annual quota of depreciation of the physical goods of the immobilized assets, reducing the time frame of the assets' development by a third.

$$T_t = 0.15 \left[I_t - CM_t - \frac{3\, I_0}{N} \right] \qquad \forall t = 1 \ldots N / 3$$

Where:

T_t : Tributary total in the "t" period

I_t : Total income from tolls in the "t" period

CM_t : Maintenance Costs in the "t" period

I_o : Total value of the physical investment in the work

N : Total time period of the concession

3. Strategic Aspects

The public debate in the last few years has emphasized the importance of infrastructure as a means of support for the development of Chile. Moreover, it has been pointed out that the current infrastructure has many limitations that need to be overcome, so that they don't turn into a bottleneck that inhibits the possibilities for further development. As previously mentioned, the way to confront this problem is through the incorporation of private capital for the financing, construction, development and maintenance of the highways.

However, a condition has been proposed involving alternative roads in order to proceed with the collection of tolls on the concessionary roads while providing another option to the public.

This phenomenon is known as the problem of highway duplication [(4)]. The argument in its favor is that all countries with an extensive system of tollways require the availability of freeways or roads without tolls for the public. Countries such as France, Spain and Mexico, for example, all encountered the necessity of having free alternatives for the public, and in so doing, avoided the eventual suspicions and accusations of monopoly abuses. But too much competition from an alternative freeway could cause problems, both practical and in terms of social efficiency.

From a practical point of view, an alternative freeway which is efficient impedes high tolls on the concessioned highway, which results in diminished profits. From a perspective of social efficiency, too much the contrary competition is not desirable between the freeways and the tollroads, simply because there would be an undesirable traffic flow: crowded

freeways and under-used tollways. In other words, it would result in lost/wasted investments [5].

The problems caused by the bad roadway conditions:

The typical problems caused by bad roadway conditions are stated in relation to the following aspects:

- Low construction standards that translate into higher operational transport costs. These could be combated with improvements, especially in paving.

- Insufficient capacity, resulting in congestion, which means growing costs of operation and time. This situation could be alleviated by means of tolls or traffic controls, but at any moment could result in demands for expansion of roads (widening, double lanes) and the construction of new alternative roads.

- Inadequate conditions increase operational costs of vehicles in relation to those on roads which are in good condition. Furthermore, it forces the improvement or reconstruction of roads when their state becomes intolerable. Conservation allows roads to be preserved in an acceptable state and operational costs to be kept within acceptable limits.

- Accidents, due to deficiencies in design or to bad conditions, resulting in the loss of human lives and material goods. However, the correction of the deficiencies would only eliminate a fraction of the accidents.

There are two types of negative consequences of the road problems. The consequence of inadequate conditions and congestion is waste, in the form of additional costs to the user of the network originally built by the State. In the case of low construction standards, the consequence is the loss of potential benefits because the improvements are not realized. In the case of accidents, the consequences are a combination of both types.

The Concessions Program

The Roadway Concessions Program, defined by the government, consists of the following projects, which are divided into two groups: Inter-urban and Urban Concessions.

GROUP I	**INVESTMENT (In millions of U.S. dollars)**
Melon Tunnel	40**
Wood Road	30**
North access to Concepción	200*
Route 78, Santiago-San Antonio	150**

AMB access (SIC)	10*
Puchuncaví – Nogales	15**
Route 5, Los Vilos-Santiago	260*
Route 5, Talca - Chillán	160*
Route 5, La Serena-Los Vilos	230*
Route 5, Stgo-Talca- (Santiago Highway - San Fernando)	750
Route 5, Chillán- Collipulli	200
Route 5, Collipulli - Temuco	180
Route 5, Temuco - Rio Bueno	200
Route 5, Rio Bueno - Puerto Montt	200
La Dormida Highway and Route 68, Stgo.-Valpo.	450
Route 57 CH, Santiago - Los Andes	110*
Total, Group I	**3,245**

GROUP II	**INVESTMENT (In millions of U.S. dollars)**
Avenida Circunvalación A. Vespucio, Santiago	350
Avenida Costanera Norte, Santiago	350
North South Axis + Avenida General Velásquez, Santiago	230
Total, Group II	**930**

Total, Groups I + II **4.175**

(*) awarded projects and in construction stage.
(**) awarded projects and in developmental stage.

it is necessary to consider the cost of time, the expenses of operation of the transport, etc. Consequently, Free Transit refers to the mode of transport that is used, keeping in mind that each one possesses a different value or cost of transportation. The fare or toll, as such, is only a component of the total cost of transport in motorized vehicles, just as the taxes, fuel or circulation permits would be, to mention other costs of which the State is the beneficiary. The Constitution doesn't assure the right to gratuitiously exercise the rights that are guaranteed; neither does it impose each one of them, concerning when they should be carried out in connection with the public component, or whether there should be alternatives without cost for the user of those prerogatives, that are under the State's domain.

- Regarding property rights, the Constitution also states that the law can establish limitations and obligations that are derived from their social function and that consist in the general interests of the Nation, the national security, the utility and the public health and the conservation of environmental patrimony. Thus, the toll becomes an obligation allowed for by law, that affects those who travel by road, for the general interest and collective good of having roadway infrastructure according to the requirements of development, transport and life in society.

- Regarding the capacity of goods for public use of the roads, it should be pointed out that the fact that a road is subject to fiscal tolls does not affect its capacity as national goods. On the other hand, the users of this type of public good don't possess a right of property concerning usage rights, but only exercise faculties that are granted by the norms. Consequently their situation can be modified and the administrative authority can charge for the use of the national roads. Furthermore, there are sufficient examples in which payments are required for the use of goods for public use, such as parking meters or the rights of marketing services that are carried out in the public sector.

The Environment, Land use Impact and City Planning

The Ministry of Public Works incorporates environmental sensitivity in all its projects, evidencing its concern about the environment, the degradation of natural resources, pollution, and Chileans' quality of life. It does so in response to objectives explicitly defined in environmental impact studies, and in accordance with regulations established in the text of the environmental groundwork law, enacted in 1994. This text states "The right to live in a pollution-free environment, dedicated to the conservation of nature and to the preservation of environmental heritage, shall be regulated by the provisions of this law, without detriment by what other legal norms may establish regarding the matter."

Concessions are framed consistent with the concept of sustainable development, understood in the environmental groundwork law to be "The process of sustained and equitable improvement in people's quality of life, based on appropriate measures of environmental conservation and protection, so as not to compromise the legacy of future generations."

In relation to the instrument for land-use management - namely, masterplans - the Ministry of Public Works shall be responsible, via executive units especially created for the respective concession, for making projects materially consistent with communal or

intercommunal land-use plans, in the event it should be necessary to dictate a change in land use or zoning, roadway structure ranking, or other contingency.

These units will be in charge of developing and voluntarily referring the environmental impact studies connected with each project to the environmental impact evaluation system, coordinated by the area office of the national commission for the environment in the region respectively affected by the proposed project plan. This body, at the time it approves the said studies, shall issue a resolution rating the project as to its environmental quality and determining the preventive, mitigating, or offseting environmenal measures held to be necessary during project construction of which will be the responsibility of the concessionaire.

Toll Collection Technology

Choice of toll collection method is an issue to be resolved in the various concessions that the Ministry of Public Works is putting into execution. Although it is true that up until now tollbooths have traditionally operated using manual collection techniques, it is clear that the new requirements associated with service-level demands on the routes being put to tender compel examination of the suitability of a switch in collection technology.

The predicament is most apparent on urban roadways, because it would be inconsistent to improve service standards with the consequent saving in resources and travel time only to make users then have to stop to pay tolls. Moreover, the necessary space is not available in the city to set up a manual payment system that would be efficient, inasmuch as this would cause long queues and crowd routes with vehicles.

The solution to this problem is to institute electronic toll collection technology. This consists of a communication link established between the tollbooth and the vehicle, which carries a signal-emitting tag or transponder. Activating vehicle-booth transmissions allows tolls to be paid on the move, without having to stop. In this mode of operation, payments can be made either by debiting a special pre-paid user account opened beforehand with an initial deposit (like a secured credit card), or by post-transaction billing, where charges would accumulate on a service invoice that is sent to the tollway user in the same fashion as, for example, a telephone bill.

Highway Safety through New Services

Growing levels of traffic and the increased power and speed of vehicles require continuing and coordinated action to reduce highway accident rates and fatalities.

Along this line, standards applicable to highway concession projects have been changed to enhance service capacity and motor safety.

The concessions program is therefore requiring the following of the concession holder, via the mechanism of project bidding guidelines:

i) General Safety Measures

- The concessionaire shall be responsible for implementing inspection and safety measures on the segment agreed upon concession, subject to all current legal regulation.

- These measures shall complement those customarily undertaken by the police.
- To avoid accidents, the concessionaire shall ensure that normal service conditions prevail on the roadway. In so doing, he shall assume liability for all legal actions users may bring against him for negligence in this regard.
- Should accidents or losses occur, the concessionaire shall be obliged, to the best of his ability, to remedy the situation and seek help from law enforcement, emergency services, or other agencies.

ii) Specific Safety Measures

Roadway Standards

- Divided highway the entire length of the segment, including bridges and tunnels.
- A median strip physically separating opposing flows of traffic.
- Grade-separated crossings at all high-traffic locations.
- Improvement of at-grade intersections.
- Service roads in areas of high local traffic.
- Upgrading and resurfacing of bridges and roadways.
- Geometric design for a peak speed of 100 -120 kph on some segments.
- Acceleration and deceleration lanes at controlled access points.
- Traffic barriers in locations where necessary.
- Prohibition of U-turns and left turns.
- Implementation of maximum vehicle weight limits applicable to public roadways.

Roadway Repair and Upkeep

- Pavement shall undergo periodic maintenance to uphold minimum technical standards.
- Provisions shall be made for clearance operations to handle emergencies such as cave-ins and landslides.
- A plan for periodic and deferred maintenance.

Traffic Signs

- Signs suitable for day and night time conditions.
- Pavement markers and striping in accordance with current safety regulation.
- Proper signposting during roadwork, roadway construction, or repair, in accordance with current transport and telecommunications ministry regulations.
- Due indication of temporary traffic detours.

Roadway Assistance

- An accident advisory system allowing timely response measures.
- Ground or aerial patrol systems.
- Notice to police or to accident and emergency centers by the concessionaire via telephone or radio.
- Mechanical assistance (tow trucks equipped with intermittent lights, fire extinguishers, and front and rear hydraulic hoists, for removing vehicles weighting up to 40 tons).
- First-aid.

Safety Performance Monitoring and Management

- Periodic reporting on roadway safety management.
- Provision of highway accident statistics covering the reporting period.
- Facility service procedures: The concessionaire must prepare rules for internal procedures, including:
  - Safety and inspection measures.
  - Fire prevention and other hazard-prevention measures.
  - Facility maintenance measures.
  - Measures to prevent and handle accidents, back-ups, etc.

Traffic Barriers

To prevent U- turns and crossings in unauthorized areas, medians shall be equipped with traffic barriers along the entire length of the segment, and all existing median and roadside barriers shall be replaced, repaired, or repainted. For response to emergencies, removable traffic barriers shall be installed in the median at 5-kilometer intervals to permit passage of emergency vehicles and to allow rerouting of traffic to the opposite side of the roadway.

Construction of Special Areas

Roadway shoulders shall be landscaped and planted at irregular intervals with rows of shrubs and trees to control roadside noise levels. Thus, motorists may enter and exit the frontage road, acceleration and deceleration lanes with a maximum design speed of 100 kph shall be provided. Also to be provided are signs indicating the presence and location of service areas, of which there are three types:

- Inspection areas: for police, health, and revenue service checks.

- Rest areas for trucks, spaced along the route at distances equivalent to 5 hours of driving time. Each shall have a total area of 1.5 hectares, paved parking for at least 20 trucks, and washrooms, lighting, and security service.

- Rest areas for cars and buses, alternately spaced 50 kilometers apart on the east and west sides of the highway. Each shall cover 1.5 hectares, provide parking for 20 cars and 5 buses, and have washrooms, play areas, drinking water, electricity for motorists, lighting, and emergency service facilities.

Economic aspects

Roads: Goods of Gratuitous Use or of Public Service?

In this case, the roads have been provided for by the State in the capacity of national goods for public use. This means that they are of free and indiscriminate use, although subject to determining regulations; their provision is in the State's charge, financed generally by taxes and not exploited for profit. In general terms, with the exception of tolls, the State has not charged for the use of the road network.

The concept of national goods for public use, traditionally associated with roads and streets, has been ingrained in the mind of the public. This is justified in that the road network permits accessibility to the whole territory. The other modes of transport could not do without it, as it is an indispensable complement.

The accessibility that the road network gives allows the public to exercise their right and to facilitate the transport of people, products and services to the entire country. The benefits that accessibility generates favor the nation as a whole and they could not easily be attributed individually to the diverse users of roads and streets, because most people are not likely to willingly and voluntarily contribute to the financing of a public good.

Consequently, it seems legitimate that the State takes charge of providing the infrastructure that grants the collective benefits inherent to accessibility. Nevertheless, nothing mandates that to assure this accessibility, the roads that provide it be of a high standard.

On the other hand, besides the above-mentioned collective benefit, the users enjoy an individual benefit. Unfortunately, private appropriation may imply the following negative effects for the society:

- The roads deteriorate with use, which demands their maintenance, in order that they can continue providing adequate service

- Roads with high traffic levels produce congestion. The vehicles interact with each other, imposing an additional cost for the other users in their costs of operation.

These are costs that don't have to become collective. Consequently, in order to take advantage of roads in good condition, the users should pay for their maintenance. Other costs occur in relation to the congestion generated and the expansion that become necessary.

It is worthwhile for the users to pay to keep the roads in good condition, because the amounts are generally less than the operation saves.

For example a trip from Santiago to Chillán has a current cost for passenger vehicles of $9.5 [(7)] while with a Concession the estimated maximum value would increase to $12, being exactly 26.3% higher. Nevertheless, the comparison of these values in absolute terms could be deceiving. What is relevant is the comparison of the generalized cost of the trip where there is no expansion project (current situation) versus a situation with a concession project. The generalized cost of the trip is figured, based on the operational costs of the vehicle, the cost of the trip's time and the toll.

In this way, upon comparing the generalized costs of trips from the social point of view, applying a toll of $2.5 - $3 would be attractive for the user since the project gives the following benefits:

- Significant time savings in periods of high demand because of the increased capacity of the road.

- Time savings because of the elimination of speed reduction sections, such as in crossings, poor design and uncontrolled accesses.

- Time savings because of the decrease of conflicts with other vehicles.

- Eventual savings in operational costs in the case of high demand.

In order to analyze the social benefits associated with the increase of road supply for Route 5, an example has been developed for the stretch between Santiago and Chillán, a trip of 380 Kms, that considers two stages: the current situation with a speed average of 75 Km/Hr and a situation after the project with an average speed of 110 Km/Hr.

Assumptions:

- There are 2 tolls of $4.75 each, considering a day during the week and a day of a long weekend (Angostura and Perquilauquen Tolls). Therefore, the average cost of the trip would amount to $9.5.

- With the Concession Project, in the considered stretch, there would be 4 tolls: Angostura, Quinta, San Rafael and Perquilauquen. The maximum value of the individual tolls would amount to $3 (homogeneous toll). Therefore, the cost of the tolls for the trip would amount to $12.

The obtained result is demonstrated in the following chart:

ITEM	Passenger Vehicles
Time Savings ($) (1)	17.54[8]
Current Tolls ($)	9.5
C/P Tolls ($)	12
Tolls ($) (2)	2.5
Benefit ($) (1) - (2)	15.04

Source: Personal Calculations
Time savings is calculated in the following way:
(380/ Vcurrent - 380/ Vproject) [xVT], where VT is the value in time.

The benefit for the user that travels on the highway is $15.04 per hour.

Another example is the Concession from Santiago to Los Vilos, the current toll fare for long weekends collected by the MOP (Department of Roads, Department of Tolls) is $5. The time savings for passenger vehicles will be up to 40 minutes and the new cost of the bidded toll will be $2.5 paid in two toll booths, or, $5. Clearly the project is highly profitable from the user's and the society's point of view alike, since the cost to the user will be the same for a highway offering better service.

If the users don't want to pay for maintenance and improvements to the road, normally roads in bad condition can be shown to cost them much more.

The direct link between payment and work to be developed implies that the improvements, repairs and conservation of the roads is considered to be a public service. The same as with the telephone service, drinkable water and electricity, benefits to which all have access, but that are not used free of charge; in turn, the payment gives the right to receive in exchange for something properly defined, that, in the case of the improvements and efficient conservation of the roadways, would be roads in good condition. This payment would play a similar role as that of the rates, just like for any other public service. The provision of road expansions, especially if they are motivated by congestion, could be considered as a public service. Therefore, the users would pay for the use of a better road, but for less operational costs.

The referred payments should not be considered as tax, but rather a price or rate that reflects the resulting damages or costs.

Definitely, one does not consider that the roads stop being national goods for public use, or that the existing network of roads becomes a source to be exploited for profit. Instead, together with charging for the provision of infrastructure and the problem of congestion, a service is given and paid for by the users who benefited from them.

Expansion of the capacity of the existing road or new highway

The relevant question that we have had to answer has been: In order to reach a certain level of service that is consistent with a social objective[9] and to respond to both origin and destination, is it more beneficial to carry out an expansion of the highway or to build a new highway?

In general, projects to expand capacity or improve the existing highway don't give rise to new traffic. They could create new traffic due to the reductions in travel costs, but the majority of the traffic on the improved highway is probably that which can be found already circulating on the existing roads.

This means that most of the benefits, the product of the improvements, will be for the traffic which would have circulated on the highway anyway, before its condition improved. All the direct benefits of a highway expansion imply greater cost savings.

In the case of a new highway, parallel to the current one, the benefits in monetary savings of trips should be comparable and identical.

The problem resides in the differences in the costs of construction and especially to the external issues (positive or negative) associated with one or another alternative.

Engineering determines that for traffic which averages between 4,000 and 20,000 vehicles daily double lane highways are justified, while for more than 20,000, three or more lanes are necessary depending on the vehicle composition and the highway layout. Recently, in the case of Route 5, a social evaluation has been carried out, taking into consideration the methodology of immediate profitability.

If we combine the economic and engineering aspects the answer is not superficial. A study should be done on the alternatives, evaluating both situations that depend on the relevance of different aspects, which may be simple or very complex. For example, the following should be analyzed:

- Existence and costs of land availability for the highway.
- Territorial impact generation and attraction of activities. Undoubtedly, a new highway changes the location of activities and the use of the associated land.
- Optimization of construction for minor or major changes to land use
- Social costs associated with traffic detours, while the expansion is being carried out, versus avoidable costs if a new alternative is built.
- Major (or minor) degree of freedom for the management and design of the works.

Finally, the question that must be solved: Is the cost of responding to the needs of several types of users cheaper with the use of expansion or two separate highways, the current and the new one?

Using the following equation it is possible to evaluate the alternatives

Ca (V) compared with Cm (V^f)+ Cb (V^z)

where:

V: Vector of Vehicles that circulate between an origin and destination i, j

V^z: Vector of Vehicles that use the new highway

V^f: Vector of Vehicles that use the old highway when the new one has been built

C^m: Current value of the maintenance costs of the current highway

C^a: Current value of the costs of amplification and maintenance of the current highway.

Cb: Current value of the costs of construction and maintenance of the new highway.

If Ca (V)= Cm (V^f)+ Cb (V^z) it is irrelevant which scheme is used

If Ca (V) (Cm (V^f)+ Cb (V^z), the construction of the alternative is the appropriate response.

If Ca (V) (Cm (V^f)+ Cb (V^z), the expansion of the current highway is the appropriate response.

Studies show that, in Chile, there are economies of scope and scale of production of services associated with highways only for several types of vehicles. In this case economies of scale should be interpreted as advantages from the cost of a mass "production" point of view, related to the flow of automobiles, heavy and lightweight trucks and buses. The economies of the field indicate the profitability, from a cost point of view, of producing flows of cargo and passenger vehicles and flows of lightweight and heavy vehicles alike. The same studies conclude that it isn't economically viable to have 2 highways: one for light-weight vehicles and another for heavy vehicles.

However, the following arguments try to explain why the decision to enlarge the current highways has been made, instead of permitting the coexistence of state highways and concessioned highways.

- The highway is perceived to be a public service, which doesn't mean that the user should not pay for its use. This argument could be used for the importance or not of the argument of the highway considered as a public good.

- The country has a history of more than 30 years with the payment of tolls on the main inter-urban highways. Also, the expansion of the current highways' capacity provides net profits for private business, as well as for the user, due to the fact that: i) a notable improvement in the given service exists, ii) the relevant comparison is between the current highway with toll versus a concessioned highway with a higher toll. In most of

the cases, the comparison is not simply between two highways with tolls, but between with a state toll versus a concessioned toll.

- The collected rates in the highway reflect the costs associated with construction and exploitation. They are not monopoly rates since their absolute maximum value comes from a competitive process, where in the absence of collusion of the bidders, efficient rates are given on the one hand and on the other, they tend to dissipate rents and their system of readjustment is fixed by law.

- International experiences show that it is more costly for countries to build alternative highways that are perfect substitutes of origin/destination, than to carry out an expansion program to meet capacity requirements. Strictly from an assignment of resources point of view, the evidence demonstrates that this approach would be inefficient. Examples: France, Spain, Portugal and most recently, Mexico.

- There are no territorial conditions, degrees of consolidation, relocation of activities, environmental and use of floor variables that in widespread form indicate the necessity of creating alternatives to the current highways. In cases where these approaches have had an influence, work has been done in the form of construction of alternative bypasses. Examples: Concession Route 5 and the bypass of Los Angeles, Laja, Rancagua and Temuco and Concession Route 57 with the bypass of the city of Los Andes.

The selected option has been, in general, to offer for concession highways without alternatives, obligating the governmental authority to be concerned about the regulation of monopolies and the contract design. These aspects are analyzed in the next section.

4. Regulation

General aspects:

The current theories of regulation emphasize partial aspects of the regulating market, supposing that their parts are neutral in the determination of policies and regulating actions. For example, from the perspective of public interest, the regulation doesn't assign any role to the expression of individual demands, nor to the procedures of the political side of the offer. Especially, consider a government whose function is to maximize, given that it works with representative individuals, basing their actions and decisions on social demands. Similarly the theory of "capturing" the regulation supposes a process of expression of very special demands, where only the demands of the regulated signatures can be translated into political decisions. In this theory, several sectors could have an influence in regulation decisions.

a) *Ex ante* Regulation. The Focus of the Public Interest: Market Failures

Market flaws are the basic foundation for the regulation of public service companies, those that are characterized by strong economies of scale and of diversity.

Nevertheless, this vision has been discussed by Demsetz[10], who argued that with the presence of economies of scale, the bidding of the right to serve a market would be a more efficient institutional alternative than direct regulation.

The focus of the "contestable" markets takes on a similar perspective[11]. This focus applies to the conditions under which a natural monopoly will be subordinated to the market rules, in the absence of "sunk" costs[12], or in other words, when the investments whose alternative values are less than their costs.

However, in order not to regulate the market, this focus requires extremely rigorous conditions. There are two types of conditions. First, the absence of sunken investments permits free entrance and exit from the industry, and this makes it competitive in principle. Second, a set of conditions for the demand and the technology are presented in such a way that the balance of the market is efficient in terms of "second best." Thus, there is not socially inefficient entrance and the monopolist only receives normal earnings. These conditions are extremely difficult to verify.[13]

In this context the most classical instruments of regulation are the return rates; sales, costs and product regulations, RPI - X (+ K) and due to the competition.

In summary, for the development of regulations, the focus of public interest is directed towards the political process and the regulating agencies, looking for policies that improve well-being. In particular, the regulation of prices and of market entrance will appear in those industries where the potential for exercising the power of the market is extremely high. So, the introduction of these regulations would reduce the earnings and increase demand for the product.

b) *Ex Post* Regulation: Institutional Regulation and Necessity of Supervision of Concessionary Contracts.

While the regulating agencies' mission is to promote the public interest, the probability exists that they will be captured by the industry they regulate.[14]

The main prediction is that by approaching the focus in this way the rates of return would be greater in regulated companies than in unregulated ones, which would be contrary to the essence of regulation. This greater profitability in regulated firms would occur precisely because they are subject to "capture of the regulator."

In the contractual process of concessions of public works a relationship between the concessionary association and the government is formed through the effect of institutionalizing the functions.

The option in this regard has been to work under the context of not carrying out contracts *ex post*. The concessionary contract is one of adhesion, in the sense that once the concessionaire carries out the technical and economic offer, it will automatically adhere to the legality stipulated in the fundamentals of the bid, the law of concessions, the regulation and the ordinance of award of the concession, plus all of the related norms. Once the concession has been assigned, the State cannot make any changes to the economic and

technical conditions of the concession. Nevertheless the nature of the contracts is that they are incomplete, since it is not always possible to anticipate all the future events and actions, which leads one to think of a special form of Concessionaire-State relationship.

In this regard, two central aspects are pointed out: i) It is more effective to separate institutionally the normative functions of the regulators. In fact, the normative authority and political powers (the ministries) have different objectives, incentives and mechanisms of operation than a regulating and fiscal authority. The regulating and fiscal functions require their own institutionality which is characterized by its independence, stability in time, efficiency and technical competence. The regulator's independence from political pressures or special interest groups associated with the regulated companies is fundamental in order to avoid risks of capture, which is one of the main threats to any system of regulation. ii) It is efficient for the fiscal companies to have a good fiscal body, because this assures them greater stability in time and a decrease in their business risks, which translates into reduced financial costs for investments.

The supervision of the concessions recognizes the aspects characteristic of this business, attending to the general criteria that the government is establishing regarding this topic, those which cross areas as diverse as the sanitary companies, the generation and distribution of electric power, fuel, etc. Thus, two areas of action have been established: Fiscal Supervision and Conciliatory Committees.

Fiscal Supervision

The institutional responsibility for the preservation of the contractual conditions is undertaken by the MOP through the nominated fiscal inspections.

By definition in the Regulations for Public Works Contracts, "the Fiscal Inspector is an employee of the competent authority, directly in charge of the correct execution of a work and, in general, for contract completion."

In this regard, the principles characteristic of the fiscal inspection of the concessionary works are:

- The main concern of the fiscal inspector is the completion of service standards and levels of the work's quality, and in the negotiations for the expansion of the contract and/or new investments that are made, those which are subject to a series of regulatory aspects, defined on the basis of bidding, and not explicitly with State resources. The former implies a special form of negotiation, on account of the economic and financial variables.

- The size of the roadway works, on average, surpasses 120 kilometers and US$150 million in investments, with the following implications: i) the duration or average permanence of the inspection in the construction stage is 3 years, and in the exploitation stage it is more than 20 years; ii) the complexity of the inspection and the type of relation with its counterpart.[(15)]

- The counterpart of the fiscal inspection is the concessionary association; nevertheless, there are other types of inspections and controls, such as: inspection of creditors, inspections of the financial institutions and inspections of the insurance guarantees.

- Due to the characteristics and dimensions of the work, the potential number of participants in relation to the Fiscal Inspector is high and they are mainly associated with: the concessionary association, investors, contractors, sub-contractors, centralized public institutions, civic centers, regional governments, parliamentarians and organized social groups.

- The attributions and responsibilities of the fiscal inspector of concessionary works is subject to the General Control of the Republic, which implies being attentive to the precise, integral and opportune completion of the economic, technical and legal conditions, in accordance with the principles that originated the competitive awarding of the concession.

The principal functions and attributes of the fiscal inspector are to:

- Control the concession contract by MOP during the construction and exploitation stages;
- Inspect the designs, studies and specifications of the project;
- Control the completion of the specifications and technical norms of the construction of the works;
- Control the completion of the security requirements;
- Control the completion of the quality requirements;
- Revise the statistical information turned in by the concessionary association;
- Approve, reject and suggest modifications to the timetables, in those cases where an approval is required;
- Suspend work in the case that the projects necessary for its execution are not approved or they are being executed without conforming to the approved projects;
- Apply corresponding fines, in keeping with the concessionary contract;
- Control the completion of the technical requirements regarding the conservation of the works and approval of their conservation programs;
- Control the completion of the technical requirements in the operation of the works, and control the completion of the service regulations of the work.
- Control the completion of the cover rates; and
- Control the completion of the economic conditions of the bidding.

Conciliatory Commission

In addition to the fiscal inspections, the legal regulation establishes that controversies or complaints that are produced by the interpretation or application of the concessionary contract shall be made known to the Conciliatory Commission, consisting of 3 members: one named by the concessionaire, another by the MOP and the third by mutual accord. In the case of no accord concerning the third member, s/he shall be named by the Santiago Court of Appeals. The members of the Conciliatory Commission are designated at the beginning of each respective concession. The Commission will determine the requirements and procedures for the resolution of conflicts.

The Problem of a Natural Monopoly

There are theoretical arguments that hold that a highway concession has an economy of scale[16] and scope, and therefore, is given to the presence of an industrial configuration in the way of a natural monopoly[17]. Due to the operational costs, the cost of invested capital is included, which is established based on the size of the project. In this way, the average cost for the user decreases. This is particularly relevant in Chile because, in general, the strategic option has been to concession the existing roads and highways, those which have no free alternatives available.

The implications of the former are the following:

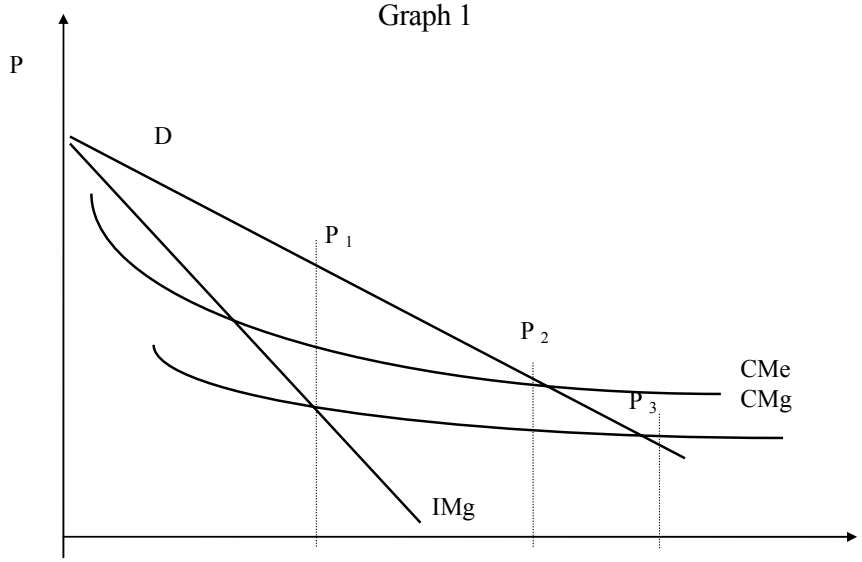
- It is not viable to set tolls at a marginal cost for the provision of long term infrastructure, given that the monopolist would not finance their fixed costs.[18]

- If the costs decrease due to conditions exogenous to the industry, it is also possible to observe *ex post* monopoly earnings.

In general, when there is a subadditivity in function of costs, a natural monopoly could emerge and take advantage of its monopoly power, in the absence of a regulator. The simple case illustrated in Graph 1 shows a monopolist that has economies of scale and in costs, which is maximized when the marginal cost is equal to the marginal income (P1, Q1). In order to avoid monopoly powers, the goods can be financed and produced by the State or, alternatively, concessioned to a private operator, but regulated based on a price cap or a maximum rate of return.

The regulator wants to protect the users from any potential monopoly abuse that the private concessionaire could take advantage of. But, moreover, it needs to give the investors the opportunity to obtain a competitive and reasonable profitability, recognizing the risks which they are taking.

Graph 1



Q_1 Q_2 Q_3 Q

As a special countercheck to the regulatory actions on the government's part, Demsetz (1968)[19] proposes that in place of regulations as previously mentioned, the government could offer a system of competition for the right to a monopoly. The offer could take the form of a price that the competitor could charge to the users. The bidder that presents the lowest price would win the privilege for the concession for a period of time fixed *a priori* by the regulator.

In other words, if the competitors have functions of similar costs and could also project in the same way the demand of future highway traffic, then the relevant price should be P_2 and the awarded firm would obtain certain competitive profitability for their investments. In this way, according to Demsetz, the regulation could be superfluous and based mainly on the demands of completion of service standards, and the government would only create the conditions so that a greater competition in the proposals and bids would occur.

It has been pointed out that since in the natural monopolies generated by a concession there is no competition in the operation, competition could be generated in a stage previous to the sale. The State could promote the competition in terms of the rates, subsidies, services and terms of the concession that they are willing to collect and receive the applicants to operate as monopolists, eventually leading the monopoly operation to a similar situation to that which would exist in an optimal regulation.

In Chile's case, within the criteria of selection for the awarding of a concessionary for an infrastructure project, it is the lowest tariff offered by the consortium, subject to a maximum tariff or ceiling established in the bid.[20] In this way, the concession is awarded to the bidder with the lowest tariff, according to the economic basis. In the case that all of the bidders offer the same tariff, another variable will come into play. In this sense, the Demsetz method is implicit in the concession law of public works.

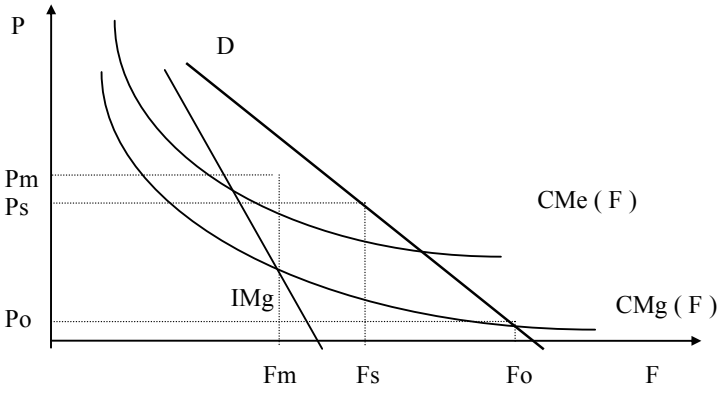
In particular, the said law establishes different economic variables for the awarding of a concession. The factors to be considered for the choice of the "best offer" among others are the following:

- Tariff structure: the bidder who offers the lowest tariff is desirable
- State subsidy to the bidder
- Term (timetable) of concession
- Revenue guaranteed by the State
- Payments offered by the bidder to the State
- Degree of risk commitment that the bidder assumes during the work's construction
- Total revenue of the concession
- Bidder's offer to reduce rates to the user, to reduce the term of the concession or of extra payments to the State when the profits of patrimony or assets exceed a maximum, pre-set percentage

Pricing: User Charge

The Theory of Pricing on roads or highways is still divided between what is an optimal price for infrastructure and price (charging) for congestion. The former responds to the idea that the existence of economies of scale and scope, maintenance and development of new infrastructure, which takes us to the study of a classic monopoly, which can be graphically described as:

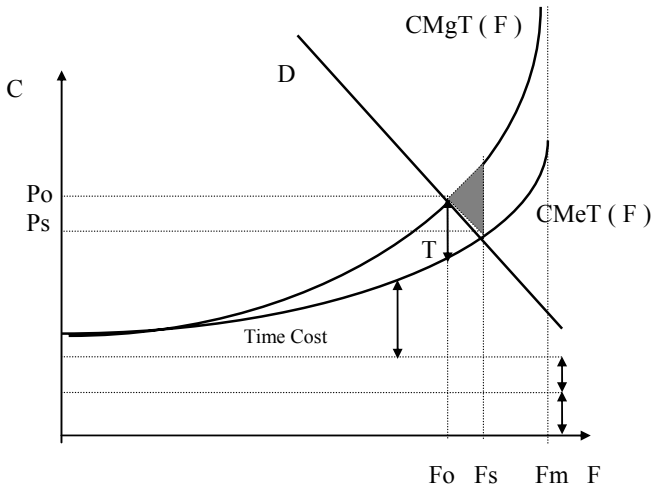
Graph 2



This graph represents the curves of median and marginal costs of provision, maintenance and exploitation of infrastructure with economies of scale. We see that we are confronted by a natural monopoly that should be subsidized[21] and regulated in order to obtain a "first best" price (Fo, Po), or rather, it should only be regulated to reach "second best" tariffs (Fs, Ps). Note that if regulation doesn't exist, the prospect chosen by the monopolist equals marginal entrance at a marginal cost, determining the wanted flow, because later intersecting on the demand it obtains the optimal tariffs from the private sector's perspective (Fm, Pm).

On the other hand, the theory of charging for congestion is that the analysis is realized from the user's point of view, where the tariff responds to correcting criteria for the externalities of congestion. In this regard, the inclusion of another user to the route affects the travel times for the rest of the users, so that the cost of the perceived time privately differs from the social cost.

Graph 3



Graph 3 shows the different components that make up the cost curves of making a trip on the analyzed route. There is the cost of vehicle operation and the cost of the time itself, both assumed by the private user; moreover, there is also an external cost given for the difference between the marginal cost. Also considering that there is a difference between the user's marginal cost (CMgT) and the total average cost (CMeT). Last of all, a variable cost of road maintenance is traditionally included that is independent of the flow. It is very important to note that, by convention, the variable cost of maintenance and the operational costs of the vehicle are added to the average cost of time in order to originate the CMeT curve, to which we will continue to refer to as the curve of median cost of time for the user. It should be noted that in absence of a rate for congestion, the level of equilibrated consumption in the road is Fs, for the generalized cost of Ps trip. However, due to the external presence of congestion, in this balance the marginal cost exceeds the demand and therefore is considered a social loss, resulting in the shaded in area in Graph 3. In order to correct this distortion, a tariff - T - is charged for congestion, in such a way that the new balance is given by (Fo, Po), which is optimal in the presence of congestion.

Regarding demand, the costs of taking a trip are not considered. In other words, the social costs incurred by damage to the pavement, the external problem of congestion, the cost of infrastructure that traditionally has been financed by the State, or the private costs that the user must assume, such as the cost of their own time, costs of fuel and the operation of their vehicle are not considered. Therefore, in this context all these elements are introduced by means of the functions of cost and not via the demand, which exclusively represents the well-being that the trip means for the user.

As has already been stated, for the determination of the road tariff policy, the concessions have been divided into 2 groups: group 1, consisting of the inter-urban highways; and group 2, formed by the concession of urban roads.

In general, there is no tariff for congestion in group 1, since so many vehicle demands and the dimensions of the projects allows for the estimation that this phenomena is not present in the total time period of the concession, and for that reason, the policy regarding charging tariffs incorporates only charging for optimal provision of infrastructure. In the presence of economies of scale, tariffs of marginal costs are not sustainable, given that they are not allowed to be financed to a concessionaire. Thus, the option has been to work with charging a 'second best price' because of economic efficiency[22]. Considerations of equity have been added in three ways: inter-generational equity, spatial or geographic equity and horizontal equity.[23]

Due to the aforementioned, the problem of minimization of the loss of economic efficiency was optimized in order to go from a 'first' to a 'second best', subject to the restriction of the concessionaire's financing of its fixed costs. The result of this problem is the well-known Ramsey rules, which state that the tariffs, in general, depend on the inverse of the elasticity of demand, assuming independent demands plus the restriction of self-financing (NPV = 0). For each type of vehicle tariff (that likewise represents different demands for highway use),

functions of elasticity are established. In inter-urban highways in Chile, with very few free alternatives of a similar standard, one could assume that under a certain relevant range the demand curve is close to zero. Likewise, the problem is to search only for the tariff that self-finances the concessionaire and the solution comes from clearing the tariffs from the current net value of the concession, discounting rate of capital cost equal to zero (VAN = 0). In this sense, the charging of 'second best' is consistent with tariffs equivalent to the long run cost.

The criteria of equity falls under the argument that the tariff level should be relatively similar in different geographic zones, so that the road standards are the same, and the different users should have the same cost to travel and, if possible, each user should pay for the use of the infrastructure, thus avoiding the problem of free riders.(24)

In order to simultaneously meet these criteria, in the past the concessions have gone to the State (past generations), which has made important investments explicitly for infrastructure and in other concessions the State has granted equivalent subsidies.

Group 2 has incorporated charging for the provision of infrastructure through the fixing of two maximum tariffs in two periods (peak and non-peak) and a third tariff has been incorporated that considers the difference between marginal and median cost via a tariff for congestion. This tariff is applied when the road users maintain average operational speeds of less than 45 km/hr.

Management, Adaptability and Tariff Revision

With the purpose of carrying out tariff management and, in particular, with the possibility of maximizing private income through business policies, linked to the capturing of greater consumer surplus, and to the revelation of preferences, but subject to the restrictions of maximum tariffs resulting in the process of competence (group 1) or previously established by the authority (group 2), the concessionaire can:

- Alter the relation between tariffs and different types of vehicles, where all the tariffs are in the maximum, fixed limits.

- Collect differentiated rates per hour, day, or week where all the tariffs are in the maximum, fixed limits and there is no discrimination to users of the same category.

- Offer to charge special rates to companies, institutions and the public in general, such as a discount for timely payment and discounts for volume of transactions.

- In general, the BALI establishes that the special tariffs will not be discriminatory, in the sense that any user that meets the necessary commercial conditions in order to choose these tariffs will have the right to take advantage of them.

In the case of tariff indexing, with the aim of giving the concession the risks of inflation, the basis of bidding has established a system of tariff indexing equivalent to 100% of the price

variation for the consumer of the previous year. The value of the maximum tariff will be re-adjusted starting January 1 of every year, in the following form:

$P_t = P_{t-1}^{X} (1 + IPC_{t-1})$

where:

P_t : The maximum tariff for the year t

IPC_{t-1} : Variation of the Consumer Price Index between January 1 and December 31 of the year t -1

The tariff revision would be carried out in the following way: every two years the concessionaire could solicit, if justified, the revision of the system of re-adjusting the maximum tariffs.

Problems of Assymetric Information

The regulation of a public service can be analyzed as a relation between an agency within the public regulator (The State, MOP or a special agency) that plays the Principal role and a private company that lends the service, that plays the role of the Agent (concessionary)

The relationship between the Agent (the concessionary) and the Principal (the MOP) takes place because of a divergence of objectives between the two parts: the controller is the guarantor of public service that is concerned with the principles of equality of access, quality of service, and the non-discretionality of tariff collection. Naturally, the objective of the company is to maximize its private benefits.(25)

In this way, the regulator's concern is that of establishing a contract which allows for adjusting, as much as possible, the behavior of the firm, in the collective interest. On the one hand, the regulator attempts to reduce or, if possible, suppress the profits that the company could obtain due to their standing as a monopoly. On the other hand, the regulator encourages the firm to reduce costs of production, consequently there would be a decrease in the tariffs and an increase in the number of users, which would mean an increase in well-being due to a greater number of consumers.

In this way, the regulator's main objective is to avoid monopoly powers on the concessionaire's part and they can use, separately or jointly, the following instruments:

- Fix a maximum tariff (price cap)
- Fix quality requirements
- Carry out a process of selection using the Demsetz process, competing for the lowest tariff

However, the above-mentioned instruments are not established in an area where the information is transparent and the interests of both parties are perfectly defined, which presents an information deficit problem for the regulator. On one hand, the regulator has incomplete information regarding how the firm produces the service (function of

production). In fact, s/he only has access to countable data, from which the firm's management cannot be understood nor the efficiency in reducing their costs, particularly those associated with the minimization of investments according to the established requirements.

On the other hand, the company has made a forecast of profits during the contract negotiations and may now have an incentive to demonstrate greater costs, dissemble about the possibility of reducing them, or may even falsify the demand estimations. The company is confronted with a business that has risks and a regulator that has another perspective. The regulator's fundamental difficulty is how to make decisions under conditions of asymmetric information.(26) The company utilizes this advantage of the asymmetric information for maintaining a certain monopoly power and eventually maintaining positive profits. In particular, problems of moral hazard appear, as well as adverse selection, from the perspective of the Agent and Principal.

In particular, the problem of moral risk is the effect of the relationship of the parties involved in the transaction or contract leading to actions that: a) affect the assessment of the transaction that is done by the other party; but, b) the other party cannot control and/or perfectly impose itself. The solution to the problem of moral risk is found in the use of incentives, structuring the transaction in such a way that the party that undertakes the action, motivated by self-interest, completes an action that would be the preference of the other party.(27)

The problems of adverse selection happen when one of the parties of a transaction or contract has knowledge of aspects that become relevant but unknown to the other party. The solution to this problem is the transmission of signals in the market (or market signaling), by means of the party who possesses superior information, communicating via the known assets.

The problems of asymmetric information can arise in all phases of the concession, which can affect the vision of both parties. The State desires concessionaires with good conduct and the concessionaire requires a State whose conduct is appropriate, making the risks of domination minimal.

For example, in the projects pre-qualification stage only consortiums that are seriously participating are accepted, which is why the State solicits a guarantee of seriousness for pre-qualification. If the Consortium is demonstrating good conduct, the State should provide opportune and adequate information, that which was promised to the consortiums. Another form of transmitting the market signals is when the consortium has enough capital or patrimony to make large investments through the completion of demands of adequate capital.

The BALI establishes a series of fines in case the concessionaire fails to comply with the demands that are specified in the concessionary contract, especially in relation to the quality of service. Clearly, these fines are incentives for good conduct. The fact that the State doesn't audit operational costs and that these are not associated with the explicit mechanisms of profit extraction, are clear incentives for the concessionaire to act as a minimizer.

Hiding information related to the production and technological process used by the firm and performing hidden actions with the aim of withholding the true costs, the projection of income or the rates of capital return, constitute important incentives for the concessionary firm at the moment of contract negotiation, if for different reasons, they require new investments. These new investments can be approached from the State's point of view, which pays by way of the highest tariff, longest term, or subsidy. In order for this negotiation to be efficient, it is necessary to state and design explicit mechanisms, known *ex ante* as the bidding, as well as to generate the incentives so that the new investments - in the terms of collective interest - materialize.

How does the State demonstrate that it will not commit actions that damage the concession regarding income, for example, by means of transport policies contrary to those which already exist? It does so by means of a guarantee of income. If the State performs actions that damage the concessionaire's income, they will be paid for. The existence of clauses that establish a minimum income from tolls is an incentive for the concessionaire to always have as an objective the charging of tariffs. An extreme example would be where the concessionaire decides to go only with the State's income to save on operational and maintenance costs.

With this logic, the contracts are designed to imply rights and responsibilities for the concessionaire and the MOP alike.

5. Business Analysis: Financing, Risk Analysis and Sources of Financing in Chile

The financing of a BOT project has at least three requirements: a) that the projected flows be capable of offering an attractive profitability for the capital at risk; b) that the level of guarantees, collaterals and insurance regarding the payment of commitments and debts are promised by trust to the creditors; c) that the financial structuring is able to become independent, or separate proportionally the risks of the project from the risks of the sponsors.

However, as a prerequisite to the three former requirements, it is necessary that the country which is encouraging the process of concession has financing, both in quantity and quality. In fact, in this type of project, it is highly desirable that different financial agents can participate, in such a way as to diversify the risks, optimally, and facilitate any re-financing that is necessary. The depth of a capital market is defined as a space where agents that have different horizons of investments and savings planning and different degrees of aversion to risk co-exist. A necessary condition, but not sufficient for the capital markets to function adequately, is precisely its level of local depth. Also, the existence of long-term investors (principally institutional funds that are seeking fixed profits for long periods) help in this objective. In Mexico, in spite of the existence of an adequate level of financial engineering in the design of the credit contracts, the local, long-term financing for their concession program, initiated in 1989, was not available. In Spain, they had to have recourse to international financing, for which the State gave currency exchange insurance. In France, there was high level of state financing in the concessions under a mixed economy.

In Chile's case, there is a noticeable depth in relation to the capital market, characterized by strong internal savings, comprised principally of pension funds, insurance companies, and public and company savings. Additional measures have been taken for long-range financial viability, especially through the acquisition of instruments of fixed profits generated by the concessionaires, ensuring that the first condition is completed.[28] Since mid-1995, a series of measures have been applied that modify the laws linked to the capital market, oriented to facilitate the financing of public infrastructure investments. In general, these financial facilities for infrastructure works open the possibility of directly investing pension funds in bonds, without a background as a concessionary association, always considering that a substantial investment has a degree of classified risk. This same criteria extends to the insurance companies by allowing them to make long-range investments through the purchase of bonds or other instruments issued by the concessionary company.

The project financing comes from the described context, which as a technique of financial mounting is essentially applied to the specific necessities linked to the characteristics unique to the operation, where the investments and the periods of recuperation of capital are such that the promoters could not participate alone without incurring moderate risks.

The financing of projects is not carried out as classic financing, but rather with the guarantee of the initial association of all of the members. The BOT projects in Chile have at least four characteristics that differentiate them from traditional financing:

- The principal asset, the highway, road or passenger terminal, is not property of the firm, assuming that the State still maintains said property. Thus, the asset is not subject to guarantee.

- The projects have a set timetable and are contractually defined (generally over 20 years), therefore, any project stress must allow for its recuperation during this term.

- The projects do not have a representative history from the private sector's point of view, which means that the evaluation of the costs and the cash flow requires greater degrees of thoroughness.[29]

- There is active participation from different agents in the stages of the project: promoters, shareholders, financiers, insurers, contractors, operators, governments[30] agencies, constructors, concessionary associations, independent auditors, consultants and users

Consequently, the technical analysis and the commercial and political sensitization should allow one to conclude that future cash flows are attractive enough to assure, in the mid- and long-term, a margin of security as significant as possible, with the ability to cover the costs, the servicing of debt and a favorable profit in relation to the capital at risk during this fixed period.

Analysis of Business Risks

A concession could be seen from the perspective of finances in terms of profit/risk. In particular, the concession forms part of a portfolio of a group comprised of N assets. The

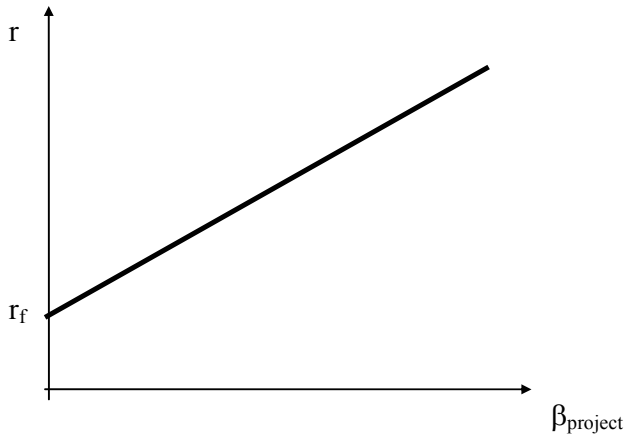
profitability associated with assets in the stage of construction is in relation to the anticipated profits of the work. The profitability associated with the stage of exploitation is in relation to the generating power for net income of tolls during the N years of the concession. In both stages, there are specific risks.

The Capital Assets Pricing Model (CAPM) shows us that in a competitive market, the ratio per anticipated risks of the asset is given as (r - rf), or the excess of anticipated profitability of the asset (r) over the free risk rate (rf) equals BETA for the ratio for anticipated risk in the market.

In general, investors prefer a high anticipated profitability and a low deviation.

Using the model of capital assets[31] and the BETA to evaluate of the concession project, it is possible to formalize this relation risk/profitability, which can be expressed in the following way:

$$r = r_f + \beta_{project} \times (r_m - r_f)$$



As the cost of β project becomes greater, the demand for profitability of the project will also increase in order to compensate for the greater, non-variable risk assumed.

For financing these types of projects, a good risk analysis becomes essential. The treatment of the risks in the concessions business in Chile is being approached under the central plan of risk distribution between the different agents that participate in the process. As stated, in a BOT concessions project at least three agents participate: the State, represented by the Ministry of Public Works and the Ministry of Finance; the concessionaire, which has its legal structure based in the private sector through the formation of an exclusively business association/corporation; and the different creditors and/or guarantors of the project.

This private/public association for the assignation of risks is based on the general principle that if the risks can be taken by the market (that is, if they have a certain degree of diversification), then the State will not participate. If the situation is the contrary, the State will assume the risk, in part or in its entirety.

In the business of road concessions, 2 main stages are identified: construction and exploitation. In both stages there are different risks, and therefore, they are approached in different ways.

In the construction stage, the two central risks are: risk of costs overrun and risk of delay of completion. In the exploitation stage, the principal risks are reduced demand or revenue.

In risks of cost overrun arise from the fact that looking back to the evaluation of the project the required investment turns out to be more than the original estimate, which immediately produces a reduction in the anticipated profitability of the project and a reassignment of the resources. In particular, the risk of cost overrun obliges the concessionaire to think about the possibility of raising more capital or of obtaining additional financing in the construction stage, once the initial financing is closed.

The risk of delay implies that - for different reasons - the work goes over the timetable initially established in the stage of project evaluation, which means that for the firm it is not possible to begin receiving revenues that allow them to cover the financial commitments in the time originally anticipated.

The risks of demand are that the level of anticipated traffic is below/less than that which was estimated. The causes of this are various and include changes in the modes of user transportation, choice of alternative routes, contraction of economic activity, changes in the disposition to pay, etc.

If the investors wish to participate in the concession as promoters of the project, assuming the non-variable risks, the price for the risk premium would be too high, obliging them to solicit an anticipated rate of return consistent with the assumed risk. The business conditions would be too demanding, requiring high social costs, even though the concession project could be accomplished and financed (i.e. excessively high tolls).

Accordingly, the State can participate in two ways, with the aim of reducing the project risk and making it more attractive:

- Subsidizing the project in order to elevate the anticipated profitability and to obtain an attractive risk/return profile.

- Taking risks by means of offering compensations, guarantees and insurance.

The following chart shows a summary of the risk analysis of the concessions in Chile.

BUSINESS RISKS	DESCRIPTION	METHOD OF USE OR ASSIGNATION
Pre-construction	Seriousness, Moral Hazard, Character of the Sponsors	• Signaling (by delivery of guarantee) of seriousness and demands on the capital of the consortium, such as a percentage of the official budget of the project. • Process of International Pre-qualification with demands, financial

		and accountable, on the companies that form the consortium. • Guarantee of seriousness of pre-qualification, applied as a percentage of the official budget of the work. • Contribution of minimum capital as a percentage of the official budget of the concessionary association, formed with exclusivity.
	Changes of Service Engineering studies contemplate changes of service according to reports provided by the same services (networks of drinkable water and sewer system, telephone, gas, energy), however, modifications don't correspond to reality. Cost overruns and delay.	• Extension of the term at the end of the concession if the work is late due to administrative problems and permits. • Special mechanism for new investments for new works. Compensation of 100% payable at the end of the concession.
	Back payments and cost overruns in the process of expropriation.	• Administrative aspects in the form of expropriations. Creation of special, professional team for the expropriation of concessioned projects. • Delivery of Fiscal Area after six months of awarding the work. Urban concessions. • Possibility that the concessionaire advances expropriations on behalf of the State - Unofficial Agent. • Delivery of plans of expropriations by MOP. • Extension of terms at the end of the concession for same period if the work is delayed • Guarantee of 100% of cost of expropriation • Additional compensation for term longer than the calculated concession in compensation for the loss of revenue. • State compensation for a maximum of 12 months of the debt's interest (Classification - Degree of Investment).
	Environment. Increased costs - delay for environmental effects.	• Conceptual designs incorporate mitigatory and compensatory measures. • Delivery of study of environmental impact to the concessionaire • Extension of the concession term if the work is late because of administrative problems and state permits. • Special mechanisms for new investments for new works.

		Compensation of 100%, payable at the end of the concession in the event of public interest modifications to the project.
Construction	Unique risks - Changes of design, readiness of materials and teams, costs of transport, changes in unitary prices and initial estimations, which cause delays and cost overruns.	• Responsibility taken away for cost overruns and delays. Spread around responsibility within the portfolio • Stand By Guarantee between Concesionary-Constructor and Banks. Performance Bond, Completion Bond. Credit Insurance for companies. • Guarantee of Construction. • Projects with a high percentage of defined engineering (over 80%), which offers bases for the analysis of pro forma operational data.
	Catastrophe, natural disasters, earthquakes, heavy rains etc.	• Special general insurance policy for this type of event. The difference between maximum expected value of the disaster and the real value is shared the concessionaire and the State. • Private insurance for revenue loss in advance, in case of natural disasters.
New Investments	New investments produce changes in the original profitability of the concession. For reasons of public interest, advise to modify the works and/or add new investments not considered in original project. Cost overrun.	• Mechanism of compensation through extensions of term, rates or subsidies. Responsibility of the State. • Investment approach as a marginal project with the provision of 100% insurance, concerning the variables of compensation. • Rate of maximum discount LIBO + 5% in order to discount flows of new investment • If new investment takes place in stage of construction, guarantee of revenue is contemplated at 50% Investment + Current Value of the Costs.
Traffic and Revenue (demand)	That the traffic or the revenues are not enough to cover debt + capital.	• The responsibility is mainly private. The market tests. Venture capital and funds spread around part of the risks (contrary covariance). • State supports: Minimum revenue guarantee that in present value is equal to 70% of the investment + the costs of operation and maintenance. • Possibility of being distributed over time, depending on how the concessionaire structures financing. • In case of delay of guarantee payment by the MOP, there is a daily interest. • Special security of concession. Similar to industrial security.

Costs of Operation	Greater operational costs in maintenance, conservation and administration	• Completely private responsibility. • Models allow prediction within certain reliability levels of expenses of maintenance and conservation subject to practicality. • Hiring of external services via outsourcing for a lump sum.
Exchange – Rate Risk	The funds of the prospective rate cannot be converted, obligating the use of foreign debt. Credits and Debits Imbalance	• Private responsibility and access to currency exchange insurance and forward contracts that the financial system provides. Incentives to increase cover by three years. • Possibility of using part of state guarantee to "buy" low risk insurance.
Interest Rate Risk	Rises in interest rates, previous to obtaining financing (altering profitability *ex post*) or obtained this already from the concessionaire's point of view. Changes in interest rate destabilizes financing-creditors point of view.	• Private responsibility - Protection is achieved with "put option" of title placement. • Financing of the project with fixed rate conditions - Share risks between concessionaire/creditors. • Financing of the project at the variable rate – LIBO (180) + Spread. Transfer risks to specialists - CAP-Ceiling fixes maximum interest rates. Swaps of rates. • Case Bonds: long-term use, convexity and immunization. Fixed rates.
Force Majeure Risk	Natural events that escape the private and public control impedes the capacity to generate resources in stage of operation.	• Responsibility–private and insurable. • Responsibility of the State for excesses. • *Idem* in case of catastrophes.
Political	Long-term projects, with average term end longer than 20 years. Actions of government affect the business. Instability of rules or attitudes contrary to the agreed contract.	• Compensatory precedents and law protection. Justice. • Statute history of foreign investment • AA Classification local currency and A (-) foreign currency. Forms of insurance for certain risks (Multilateral Agencies -World Bank -BID). • State guarantee of minimum revenue. • Models for demand incorporate several stages.
Toll Collection	technology does not work System of collection is inefficient.	• Completely private responsibility. • Technology selection by the concessionaire. • Variable or market transferable risks through subcontracts. (Companies specialized in collection, agreement with members and suppliers of

		Electronic toll collection • Non-payment – Infractions are penalized. Law of Concessions. Judicial Collection. Highest fine between 40 times the toll or $120
Taxation	Changes affect resource availability. There is no clarity on the process.	• Private responsibility with access to taxation agreements providing stability for foreign investment, DL 600 (35% v/s 42%) • Possibility of fast depreciation N/3.
Performance and Default Risk	Serious noncompliance of the concessionaire obligations.	• Conciliatory commission declares serious noncompliance. • Appointment of inspector • Rebidding in term of 180 days of the concessionary contract by the MOP. • New bases of bid will not be more stringent than the taxes to the original concessionaire
Bankruptcy	Impossibility of completing financial commitments to the creditors.	• Two possibilities according to the Summit Meeting of Creditors determination: i) Auction the Concession; ii) Provide continuity in the endeavor. Decision of the pledged creditors. • In the case of maintaining continuity, the term of the concession will be equal to that which remains. • Case auction - there are three possibilities: In the first auction minimum bids will not be less than 2/3 of the amount of the contracted debt; the second auction will not be less than ½; and the third will not have a minimum. • The credits guaranteed with a special pledge of concession will be paid with preference to any other credit with the value of the bid. • If credits are united with the approval of the creditors and these credits are eligible, they are made effective for the value of the bid with preference to the guaranteed with the special pledge of concession.
Inflation	Increases in prices of raw materials produce cost overruns.	• Tariff readjustment according to IPC every year on January 1 or every time that 15% is accumulated.

Risk Allocation [32]

a) Minimum Guaranteed Revenue

With the aim to cover different risks in the exploitation stage and to help the financing of BOT projects in the infrastructure sector, from the beginning in Chile there has been a system of guarantees to cover the problem of considerable lows in concessionary revenue. In the first concessions, a traffic guarantee was established from year to year. Afterwards, a guarantee of revenue was incorporated.

The equation used to calculate the Minimum Guaranteed Revenue (MGR) was the following:

$$IMG = \left[0{,}7\,Inv_A\right] + \sum_{i=1}^{N} \frac{\left(CO_i + CC_i\right)}{(1+rp)^i}$$

where:

MGR	:	Present value of the minimum guaranteed revenue
Inv_A	:	Investments estimated by the State, updated with a rate of discount r
CO_i	:	Operational costs of the concession in year i, estimated by the State
CC_i	:	Costs of conservation of the concession in year i, estimated by the State
rp	:	Rate of discount r

This expression indicates that MGR is estimated at 70% of the investment plus the total costs of operation and maintenance, an amount which is prorated for the expected total term of the concession, considering a rate of growth based on the anticipated rate of revenue growth. For example, if the term is 20 years, the investment is 100 and the present value of the costs of maintenance and operation during the 20 years is 150, so in 20 years the following should be prorated: 0.7*100+150 = 220. If the rate of growth of vehicles is 6%, then the calculations are:

$$\sum_{t=1}^{20} MGR(1+0{,}06)^t = 220$$

where MGR = 5.64 logically follows; then the Minimum Guaranteed Revenue in year t is given as 5,64 x 1,06 ^{t}

This mechanism has been perfected and in recent concessions an MGR has been established with a tranche fixed by the concessionaire.

The idea is to simply transfer the responsibility of choosing the desired profile of MGR to the future concessionaire, under certain conditions established by the MOP.

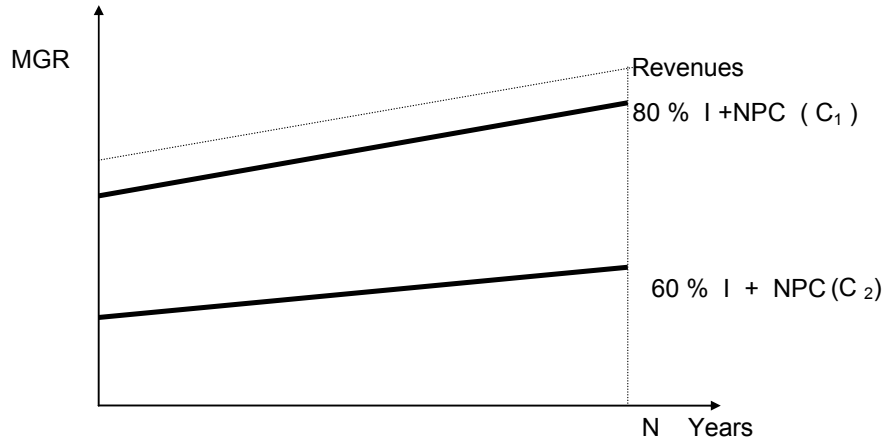
The MOP establishes the present value of MGR that it is willing to grant[33], establishing 2 limits calculated as:

C_1 (N) = 0.8 x Inv_A + NPC
C_2 (N) = 0.6 x Inv_A + NPC

Where NPC is the current value of the costs of operation and maintenance, simulated by the MOP.

The concessionaire can choose any trajectory of minimum revenue, on the condition that it is always within 2 limts (tranche) and its present value is equal to MGR = 0.7 × Inv_A + VAC.

Graphically,



The graph demonstrates that the tranches C_1 and C_2 are those for which the concessionaire can choose the path.

b) Sharing of Accumulated Over-return

As a counterpart to the minimum guaranteed revenue, a system of over-return distribution between the State and the concessionaire has been established as optional. That is, if the concessionaire chooses to take advantage of the option of state guarantee in the aforementioned form, then - from a determined date - a percentage equal to x% of the revenue should be given to the State.

The mechanism that figures the sharing of concessionary over-return is from the period where profits have already been made up to the rate previously established by the State.

The Ministry of Public Works, based on the cost estimations of the revenue of initial investment, estimates m_0 such that the project TIR is 15% over assets, that is, the NPV with these parameters is:

$$VAN_E\ (15\%, m_0) = \sum_{t=1}^{m_0} \frac{I_t}{(1+0{,}15)^t} - \sum_{t=1}^{m_0} \frac{C_t}{(1+0{,}15)^t} - I_0 = 0$$

Where $I_t = P_t\ Q_t\ (P_t)$ are the revenues from month t ; C_t are the costs of operation and maintenance in month t ; I_0 is the initial investment.

The mechanism establishes that starting from month m_0 the concessionaire must give the State, from year to year, a fraction $1 - \alpha$ of their revenue, where $1 - \alpha$ equals 50%. The moment m_0 gives the value of total accumulated revenue that represents this profitability of 15%. Naming this value as Ω in such a way that when the concessionaire's accumulated revenue reaches this value of Ω, 50% of the additional revenue, until the end of the concession, it is turned over to the State.

c) A New Method for Auctioning Highways: Least-Present-Value-of-Revenue

It is appropriate to show a new method for auctioning highways; this method has been designed to substitute minimum guarantee revenues and monopoly regulation dynamically according to the time.

This method was created in 1995 by a team at the Ministry of Public Works as an answer to two central problems faced at that time:

a) The need for the MOP to regulate the firm with a different mechanism from the Averch Johnson effect in the case of the franchise face rate of return regulation.

b) The need for the MOP to keep a flexible tariff policy, due to the fact that the Demsetz competition through tariffs will not always act efficiently, specifically in the case of public transport networks and in those cases where traffic increases are expected.

Now we will introduce the new mechanism which has been formally developed by Engel, Fischer and Galetovics[1] as part of a consultancy job for the MOP. This presentation is an abstract of a more developed exposition :

"Traditionally, highways have been viewed as public goods that must be financed and operated by the public sector. But in recent years many governments have neglected maintenance because of chronic budgetary problems, and traffic has grown well ahead of capacity. So it has become increasingly accepted that highways should be built, financed and operated by private firms and that users should pay for using them. Several advantages are claimed for privatized roads. Private firms build highways faster because they face fewer financing constraints and they are more efficient than state-owned firms. Users are more likely to accept the concept of paying for roads owned by the private sector. And franchising should prevent the building of "white elephants", since private firms do not want to lose money.

Despite these avowed advantages, the experience with highway franchising has been far from happy. Three of the four franchises that France awarded in the early 1970s went

[1] See ENGEL, E., FISCHER R., GALETIVIC A., (1997), "Privatizing Roads: A New Method for Auctioning Highways" Viewpoint The World Bank Group - Departamento de Ingeniería Industrias Universidad de Chile Avenida República 701, Santiago Chile URL:http//www.dii.uchile.cl

bankrupt after the oil shock and were taken over by the government. Several of the twelve franchises awarded by Spain before 1973 had building costs four to five times higher than expected, but traffic about a third of original projections. As a result three firms went bankrupt two firms were absorbed by stronger franchise holders and the government granted toll increases and the government granted toll increases and term extensions. In Mexico, excessively high tolls have led to empty highways and the renegotiation of the original franchise agreements. The duration of some of the toll road franchises has more than doubled and the government has had to pump in US$2 billion to save firms (and the banks that made loans to them) from bankruptcy.

Many problems that have plagued highway franchises stem from the combined effects of special features of the highway business and of the type of franchise contracts that have typically been used. First traffic forecasts are notoriously imprecise; it is difficult enough to make accurate traffic predictions for the short run and much harder for the long run. Moreover demand for a highway is largely beyond the control of the franchise holder. Second most franchises have been awarded for a fixed term (say 20 years) that is independent of demand realization. In what follows this Note describes the main shortcomings of fixed term franchises and then presents a new mechanism, the least-present-value-of-revenue (LPVR) auction, that endogenously adjusts the duration of the franchise to the realization of demand.

The main defect of fixed term mechanisms is that they create unnecessary risk for the franchise holder. Since demand is uncertain and competitive bidding dissipates *ex ante* rents, the winner of the franchise chooses a franchise term (or toll) such that it faces significant losses if traffic turns out to be considerably below expectations. This may happen even when traffic flows are sufficient to pay for the road in the long run. Faced with high risk, the franchise holder will demand a risk premium, which is paid by users (or, through government guarantees, by taxpayers).

Because of the high risk associated with highway franchises, lenders have refused to grant franchise holders loans unless governments guarantee the debt or provide generous minimum toll revenue guarantees. Guarantees reduce the incentives for lenders to screen projects and monitor their performance: one of the basic arguments for highway franchises. A second consequence of high risk is that when demand turns out to be lower than expected contracts are renegotiated and losses shifted to users or taxpayers. The expectation of renegotiation prompts firms to bid artificially low tolls (to lowball), expecting better terms after the contract has been awarded. It also implies that firms that excel at renegotiating contracts can compete with firms that are considerably more efficient at building, financing and operating highways. Thus with fixed term franchises, the advantages of privatizing roads are easily lost: taxpayers and users pay for roads that are bad investments, inefficient firms win franchises, and firms do not mind building white elephants.

Fixed term franchises have additional disadvantages. First they increase the likelihood that the franchise will be awarded to the firm with the most optimistic traffic projection (the winner's curse). Second, fixed term contracts are inflexible, which can be a serious problem if tolls turn out to be outline or congestion makes it desirable to widen the highway. The

problem arises because it is difficult to agree on the fair compensation the expected income forgone over the remainder of the franchise to be paid to the franchise holder in these cases.

LPVR FRANCHISES

The least-present-value-of-revenue mechanism corrects several short-comings of fixed term mechanisms. In this approach,

- The regulator sets a maximum toll.
- The franchise is won by the firm bidding the least present value of toll revenue
- The franchise ends when the present value of toll revenue equals the franchise holder´s bid.
- Toll revenue is discounted at a predetermined rate specified in the franchise contract. The rate should be a good estimate of the loan rate faced by franchise holders.

As an example, consider an auction with two firms. The first firm estimates cost of US$100 million and bids US$112 million while the second estimates costs of US$99 million and bids US$110 million. The second firm wins and operates the franchise until the present value of toll revenue is US$110 million.

The basic principle underlying LPVR auctions is that franchise holder should not make losses when the long-run demand for the highway is sufficient to pay all costs. Thus the term lengthens when traffic grows more slowly than expected and it shortens when traffic grows more rapidly than expected. Revenues are the same even when demand realizations are different, so the risk borne by the franchise holder is far smaller than under fixed term franchises. For this reason, the franchise holder requires a smaller risk premium, and users pay less on average. The lower risk for the franchise holder also means that the winner's curse is less likely, because bids are less dependent on demand projections.

With LPVR auctions, the franchise holder still bears the risk that the road may not be self-financing in the long run that is, that it will turn out to be a white elephant. But since white elephants are usually the result of lobbying by pressure groups, they should be easily detected by potential bidders.

A further advantage of LPVR auctions is that competition for the franchise reveals, through the winner's bid, the income required to earn a normal return. This reduces the scope for opportunism after the contract is awarded because the winning bid can be used as a bench mark. In case of government opportunism leading to a regulatory taking the franchise holder can go to court, asking for fair compensation equal to the difference between its bid and the present value of toll revenues already received.

Opportunistic renegotiations that favor the franchise holder are also less likely, for three reasons. First, because the term automatically lengthens if demand grows more slowly than expected, it is less likely that franchise holders will face financial distress and therefore demand renegotiations. Second, renegotiations in favor or the franchise holders are explicit wealth transfers: term extensions are impossible by definition, and the only effect of a toll increase is to shorten the term of the franchise. Since explicit

wealth transfers are easier for the public and the media to understand, they are less likely. Third the government can discourage lowballing by bidders by threatening to end the franchise if the franchise holder asks for a renegotiation compensating the franchise holder with whatever sum remains to be collected.

The winning bid determines the fair compensation for termination of the contract at any time as the difference between the present value of revenue earned and the original bid. This ensures flexibility in LPVR contracts. If demand exceeds expectations and requires an expansion of the highway, the franchise holder can be paid the fair compensation and the franchise reauctioned. It is also easy to adjust tolls. If tolls need to be raised because of congestion the only effect is that the franchise ends earlier. If demand for the highway is highly uncertain before it is built (as is often the case for new highways) the setting of tolls can be postponed until after construction.

The main limitation of LPVR franchises compared with fixed term contracts is that they provide fewer incentives to engage in demand enhancing activities. Any expense that increases demand shortens the franchise and so increases profits less than it would under a fixed term contract. As a result the franchise holder may underinvest in road quality or maintenance, speedy attention at toll booths, or swift cleanup of accidents. For this reason, LPVR auctions require regulatory institutions that set and enforce minimum quality standards for franchise holders. Regulation need not be complicated. For example, independent agencies could monitor waiting times at toll booths, and the waiting times could be published in newspapers to make the regulators accountable to users. (Even with fixed term franchises, it becomes necessary to monitor quality as the end of the term approaches). This defect of LPVR auctions can be mitigated by rewarding franchise holders that achieve short franchises.

LPVR auctions are a promising mechanism for privatizing nor only highways but also other infrastructure projects. They are attractive for projects requiring large investments upfront and in which demand is unresponsive to efforts by the franchise holder. They also require a low-cost capability to verify revenues, the quality of service, and the residual value of investments."

Sources of Funds

In general, for financing BOT-type concession projects, there is a structure composed of 2 financial sources: capital (equity) and debt. This separation of the structure of financing between capital and debt originates precisely from the aspects that characterize a BOT, in which it is principally determined by the size of the project and by the type of inherent risks, those which demand to be transferred or distributed accordingly among the different agents and financiers, given that the capitalist is not in a condition to take them on in their entirety. The trade off between the required mixture between direct financing via the capital of the project's promoters and the financing via debt, or leverage, can be analyzed in the context of Weighted Average Cost of Capital (WACC). Assuming that the profits offered and regulated by the State for this type of project (on average K_o), that is, projects whose pure evaluation gives an Internal Rate of Return equal to K_o, through the WACC process one can deduce that the promoters of the project would want to establish a set quantity, (taking

advantage of the leverage and recognizing a undiversified risk level) and maximize the return of capital, substituting "the cheapest" debt for this effect.

Defined as:

$K_o = K_e \times (K/I) + K_i \times (1-t) \times (D/I)$

Where:

K_o : Average pondered capital cost
K_e : Cost of capital corresponding to the sponsors
K_i : Average cost of debt
D : Debt amount in the concessionary association
K : Capital provided by the sponsors
I : Investment amount = total "value" of the concessionary company
t : Tax rate for the profits

Transforming the equation the result is:

$K_e = K_o \text{ x } I/K - K_i \text{ x } (1-t) \text{ x } (I/K)$

Setting K_o, maximizing K_e regarding K_e as equal to zero, the result is:

$K^* = F(K_o,K_i,t,I,D)$

Therefore, there is at least an optimal percentage of capital (equity) K* but this depends on the average pondered capital cost (K_o), the interest rate for the debt (K_i), the tax rate for the profits (t), the amount of assumed debt (D) and the investment amount.

In this way, what is best for the project sponsors seems to be the financing of their investment with a high percentage of debt, in comparison to the amount of capital K*, consistent with the assumed risk. The key is in the transferral (and payment) of part of the risk to the financiers, which is very difficult because from a certain level it will be entirely taken by the capitalists. The basic demand of financing BOT projects is that the project should be isolated as much as possible from the concessionary association, and offer guarantees of security to lenders in terms of the cash flows and not in relation to the payment of shareholders and promoters of the concessionary association.

Capital markets are comprised of financial services that have a wide range of intermediaries, investors, stock brokers and service companies.

The following are the principal types of financial entities:

- Banks
- Financiers
- Life Insurance Companies
- General Insurance Companies
- Leasing Companies

- Pension Fund Administrators
- Health Insurance Institutions
- Stock Markets
- Stock Brokers (Intermediaries)
- Brokerage Firms
- Risk Classifiers
- Mortgage Companies
- Investment Fund Administration
- Mutual Fund Administration

The financing of a concession program by the financial sector in Chile comes from: banks, insurance companies, pension funds, and investment funds, whose further analysis follows.

Capital Market and General Regulatory Framework

The regulations in the financial sector are designed to facilitate the placement of resources by means of free competition in the market. With the exception of certain restrictions relative to governmental instruments and confidential information, there is great freedom of administration, prices, innovation and property rights.

The vast majority of financial service companies are privately owned, and many of them are foreign. There are no barriers for entry to the market and the government has no intention to expand their activities in this sector in the future.

The regulatory bodies put emphasis on the reliability of financial information, in such a way as to attain a greater perfection of the self-regulations of market conditions. The principle elements of the financial sector are: The Central Bank of Chile, Regulatory Authority of Banks and Financial Institutions, Stocks and Bonds and Pension Funds.

In summary, the regulation of the financial sector, in the widest sense, is characterized by the following aspects:

- Property rights, mainly of a private nature
- No discrimination
- Private nature of the risk
- Reliable information
- Free entrance to the market

Commercial Banks Loans

In December 1996, there were 30 banks in the Chilean banking system with capital and reserves of more than US$5 billion.

With the exception of the Banco del Estado de Chile, all of the other institutions are private property. There are 13 domestic banks and 17 foreign banks. Traditional operations, such as private placement, have steadily grown both in amount and in sophistication. From 1987-

1995, the placements and purchases grew at an average annual rate of 22.5% and 20.8%, respectively. In 1996, both reached an average level of US$37 billion.

Bank financing is an important source within the local market and the credits - without guarantee - that the banks grant for the financing of public works can reach up to 15% of the capital paid and the reserves of the crediting institution. The loan is always granted by 2 or more financial institutions and complies with the following conditions:

- The construction companies or concessionaires of the project must be classified in Risk Category "A" or "B" by the financial institutions that grant the financing, for which they must meet the requirements demanded.
- The construction companies or concessionaires must promise to constitute, in guarantee of their obligation to a credit entity, the minimum revenue that will be generated in the exploitation phase of the infrastructure project, which is guaranteed by the State or by a private insurance institution. This guarantee's only aim is to protect the credit payment.
- The construction companies or concessionaires of the project must prove, by means of a MOP certificate or through an external audit firm registered with the Regulator of Banks and Financial Institutions, that they possess capital of not less than what is demanded of the MOP registered companies in the highest category.

The Law of Concessions states "....a special pledge of concession of public works, which shall be without displacement of the rights and goods pledged. It may be agreed upon by the concessionaire with the financiers of the work or its operation or in the emission of debt titles) or the concessionary association. It may include a) the right to concession of public works which, for the concessionaire, means the contract; b) the assets of the concessionary association; c) all payments pledged by the State to a concessionary association, with any title, in virtue of the concessionary contract; d) all revenues of the association."

Life Insurance Companies

Under Chilean law, there are two types of insurance companies, life and general, which offer different kinds of coverage. There is complete freedom for the creation of insurance companies, for both foreign and domestic companies alike. Insurance companies are one of the most important institutional investors in the Chilean capital market. Their investments in 1995 reached up to US$7 billion. Chile has 29 life insurance companies. In 1995 alone, the life insurance premiums reached US$1.26 billion, which equals 2.2% of the GDP

In the report "Balance and Business of Life Insurance Companies" it is observed that the financial investments from assets reached 98% and, from the profits, reached 79%. The profits have the following characteristics:

- Long-term obligations. On average, they will be 12 year terms.
- Indexed in UF.
- Offered in a real, fixed rate for the whole duration of the contract term.

The financial investments (98%) that the insurance companies currently have are the following: State bonds, 40.22%; mortgage documents, 18.63%; company bonds, 10.43%; stocks, 10.03%; and other instruments, 20.66%.

The insurance companies can participate in four different ways:

- As shareholders in the Concessionary Association: allow access to greater returns without significantly increasing the risks; however, there is the disadvantage that while the Concessionary Association is closed, this investment will not be eligible for supporting the technical reserves or equity risk patrimony.

- As a supporter of an Investment Fund for the Development of Companies: through the acquisition of quotas eligible for supporting technical reserves and risk patrimony. The disadvantage is that there are less returns due to the fund commissions.

- As a creditor: for the Concessionary Association to issue bonds with fixed profits (it is possible) without option of pre-payment, figured in UF and classified in category A. The classification is very demanding for the companies that participate in the construction stage. However, once the work has been finished, with the existence of an adequate juridical framework and a correct elaboration of the bidding process, the existence of due guarantees and an attractive return in comparison to other similar alternatives, the possibility of participation is great.

- Also, the insurance companies can participate in the construction stage by means of purchase/sale promises. These promises take effect if a series of previously stipulated conditions are met: basically, that the work is finished and that there is a sufficient degree of investment.

Pension Funds

The private system of pensions was created in 1981 as a replacement for the system of state social security. The latter will disappear gradually. Currently, all new workers are incorporated into one of the private pension funds, with the obligation to contribute 10% of their gross income monthly to the said fund. The individual accounts for each affiliate of the fund are managed by the administrators of pension funds (AFP), which are the most important institutional investors.

When it's time to retire, the affiliate receives the total amount of his/her pension fund. Said amount depends on the contributions of members, as well as the interest earnings and capital obtained by the fund. At the time of withdrawal of funds, the affiliate can opt for advance monthly payment - profits/life pension/annuity in some of the insurance companies - or come to an agreement with the AFP on a retirement plan schedule.

As the most important, non-bank investment institution, the pension funds represent a significant contribution to the development, stability and consolidation of the Chilean capital market, principally for the following reasons:

- Receipt of a constant and growing flow of revenue, provided by the contributions of the affiliates.

- Use of a formal secondary market for their investments.

- Generation of a permanent and sustained demand for investment tools, as a form of increasing, diversifying and making profitable the investment portfolios.

- Use of a variety of related financial services.

Without obstacles to entry, the pension system is very competitive. There are currently 14 AFPs that have more than US$27 billion in accumulated assets, having increased these assets at an annual rate of 31.1% between 1987 and 1995, and they already have more than 5.3 million contributing affiliates.

Moreover, the rapid growth of assets in the portfolio is explained by the real return rate obtained by their investment portfolio, which on average has been 11% between 1987 and 1995. Until 1995, their investment composition was limited to classified measures of fixed rates and governmental instruments. Now, the acquisition of stocks and instruments of variable profits is possible, as well as foreign investments, options, and futures.

Regarding concessions, the pension funds can also be invested in public and private company bonds/shares with less than three years of representative history. In this case, the debt titles issued by said company shall be considered project bonds without history, given that the proprietary association of the concession will be formed specifically for the said aim, which means that the pension funds must meet the particular conditions that exist for these instruments.

In spite of the fact that pension funds can also be invested in debt titles issued both during the construction and operational stages of the concession, there must be alternative mechanisms to cover the risks inherent in this stage, or rather, that they are projects that qualify as subjects for investment as established in Title XII of the Rules of the Risk Classification Commission, whose principal requirements are the following:

- Existence of a concessionary contract completion guarantee, which assures that the cost will not exceed a certain amount, and that once initiated it will not be completed after a certain, pre-established date. Complete coverage of cost overruns and delays;

- Existence of a "principal patron", who controls at least one third of the concessionary capital. This patron should have experience in the management of similar or related projects and be sufficiently solvent (with a minimum classification in category B);

- At least one of the patrons must have experience in the sector;

- The estimated amount of investment should be less than the sum of the consolidated assets of the patrons;

- The feasibility study should create an internal rate of return the same as the long term papers of the Central Bank, plus four percentage points annually. For these effects, all the payments to the State, or the subsidies are understood to be part of the project flow.

- The concessionary must turn in, under guarantee, the revenue flows of the project;

- If the bonds are issued to finance the construction of the work, the resources must be turned in to the concessionaire according to the calendar of disbursement, which should be related to the degree of advancement of the works.

Likewise, the concessionaires must commit themselves to keeping their goods insured, according to reasonable practices in the industry. The insurance plan must incorporate at least an insurance of the work that guarantees the flow of payment to the creditors.

The greatest participation of pension funds is expected in the exploitation phase by way of the acquisition of debt instruments (bonds) that the Concessionary Association issues and that are used for the re-financing of the debt, principally with banks, amassed in the construction stage.

Alternatively, the pension funds can participate indirectly by means of Investment Funds through the acquisition of capital quotas of the Concessionary Association.

Investment Funds

Investment Funds are a new, long term investment option which are subject to the fluidity brought by the transferability of the quota. The investment funds are divided into: Investment Funds of Company Development, Real Estate Investment Funds and Risk Investment Funds of Foreign Capital.

In general, the Investment Funds are administered by a society with exclusivity and subject to official revision. The financial basis is centered on the issuance of quotas that are non-redeemable in nature, which allows for the assurance of long term investments.

The concentration of investment funds is in company development projects in the infrastructure area, 70% on concessions, privatization, generation of new commercial companies with and without history; and the remaining 30% is directed towards investments in public supply bonds via stocks, fixed profit and others.

There are two types of investment funds: real estate, and stocks, bonds or shares. Currently, there are 22 investment funds, 9 of which are in the area of company development (FIDE). The total patrimony reaches US$900 million; nevertheless, the market is expected to increase when the quotas of the investment funds have certain tax breaks for individual investors and represent a profitable way for the AFPs to invest indirectly in the real estate market and in stocks with a low exchange profile. When this information was compiled in 1996, there were 6 FIDEs with investments of more than US$100 million in the country.

Currently, there are 21 funds with assets of US$1.972 billion.

Stocks and Bonds

At present, there are 324 Chilean companies registered in the Stock Market of Santiago. Since 1991, a growing number of Chilean companies have issued stocks (ADRs) and bonds in the foreign markets. The exchange value of Chilean companies reaches US$71 billion. It

is noteworthy that the value has grown more than 10 times in the last 7 years. There are basically 2 forms in which foreign investors are able to participate in the domestic stocks and bonds market. One of them is by means of a Chilean subsidy established according to the requirements by which foreign investments are regulated. The other is by means of an Investment Fund of Foreign Capital (FICE).

Stock Market

There are three stock markets in Chile where stocks are traded: gold and currency; fixed rate instruments, such as bonds, mortgage papers, bank loans and indexes denominated long-term loans from the Central Bank; and instruments of financial brokers, futures, options and quotas of investment funds.

During 1996, the volume of trade totaled approximately $13 billion dollars, principally represented by instruments of fixed profits and financial brokerage.

After going through a phase of great apprehension, fundamentally explained by the re-evaluation of the relationship of risk/compensation that was observed until 1993, the exchange market has entered a phase in which the aspects of projected company growth dominate market trading. More and more, its behavior has become more adjusted and sensitive to that which is called "selectivity," which is the current phase Chile is experiencing.

In this context, the recent behavior of some sectors reveals that currently there is a noticeable dynamism from the companies that best reflect the sustained growth and the increase in the country's per capita income. This initiates a "renovation" of opportunities, that the market seeks to capture with much interest. An illustration of these tendencies is found in the successful placement of new stocks for opening or new issuance of companies, highlighting cases from the financial, service and construction sectors.

The alternative forms of stock issuance appear as a possible and efficient resource that would permit the strengthening of company capital that is formed in our exchange market in the concessions framework.

The market interest is not only comprised of institutions that want, and need more than ever before, to diversify their investment portfolio; also, there is great interest demonstrated by individual investors, who can take advantage of significant tax benefits.

International Financing and Currency Exchange Insurance

Bank Financing: Although international banks have participated in the financing of these types of projects in different parts of the world, their role has mainly been in the short term provision of funds, for the period of construction and as a guarantor for the risks associated with this period. The principal obstacle to the active participation of international banks is related to currency insurance. It must be pointed out that the revenues for tolls of the concessionary associations are indexed in pesos, and as a result, so are the assets. Contracting passives in another denomination provokes financial imbalances that the foreign bank wants to cover by means of swaps or forwards.

Financing by Bonds: The international capital market has experience in the financing of these types of projects. There are different modes of financing, which depend on the type of market to which access is desired, those that vary from a private placement, consisting of the placement of a small group of institutional investors (normally pension funds, insurance companies and investment funds), to open placement of bonds in the markets, whether they be markets in the United States or in Europe (eurobonds). Once again, the main restriction on active participation by foreign financing via bonds is due to currency risk insurance.

Multilateral Financing Organisations: A traditional source of financing for these types of projects is made up of multilateral agencies, among which are the IFC (associated with the World Bank) and the IIC (associated with the IDB). In general, the incentives for operating with these agencies is associated with a kind of reputation before the international financial community that the project is reasonable. In particular, a mode of direct credit is established, in which the operator's selection is guided by the quality of the sponsors. Particularly, the IDB[(35)] is selecting those operations which: a) are financial, legal, technical, economical and environmentally sustainable; b) have access to management, institutional and structural capacities for the execution of the project; and c) comply with the international financial canons related to viability, guarantees and legal structure.

The World Bank is financing partial risk guarantees, which are related to the capacity for covering political and sovereign risks as well as with the completion of the government commitments in the concessionary contract. Likewise, the financing of partial risk guarantees implies a refinancing of the Concessionary Association by means of issuing of instruments. In both cases, a mode of state counter-guarantee is established.

Local banks can participate by granting credit for the construction stage of up to a maximum limit of 15% of their capital and reserves, using the D.L. 252, article 84, of the General Law of Banks. This is applied when the destination of the loan is reached, whether it be covered by pledges or special guarantees or, alternatively, by two financial societies that have made a credit agreement with the concessionaire. Taking into consideration the composition of the consortiums (of related companies), the degree of local banks risk exposure, their limit of leverage and the resources already granted that exceed US$300 million, an estimate of US$1.1 billion seems to be reasonable. The difference will have to be covered either by foreign banks or with the Concessionary Association's issuance of bonds without history, classified with degrees of investment in order to enter the investment portfolio of pension funds and life insurance companies.

Thus, local financing would be overrated, with the following effect in the bidding conditions of the concessions and the degree of participation of companies, given that two effects would be combined: a greater degree of risk exposure of local banks and the use of demanding credit conditions due to the lack of reasonably profitable alternatives for the associated consortiums.

Regarding the former, the participation of the banks and foreign funds in the financing of the Concession Program becomes important. However, the banks and foreign funds could view debt with the Chilean concessionaire firms as being risky, because the firms will be receiving their revenue from tolls indexed in UF and they would be contracting debts in

US$[36]. In other words, the balances would be unadjusted. Therefore, it is natural that foreign banks demand a currency insurance which allows them to cover devaluation of the domestic currency risks, in such a way that the Concessionary Associations can cover their financial commitments.

The question arises whether the Chilean capital market has enough development to provide currency insurance (or forward market) for the commercial banks or foreign financiers, who will in due time demand such from the Concessionary Associations to finalize the financing.

The forward market has had an explosive growth since the end of 1994. The main characteristics of this market are the following:

- The number of participants in the points market can be separated into 10 banks and three stock markets. The rest of the financial institutions perform these type of operations sporadically, without taking positions nor acting as market makers.

- The market has a volume of daily operations of between US$40 and 60 million. In terms of time, the market is hedged between 7 and 365 days, periods in which the exchange markets of points is quite developed.

- Regarding the coverage operations carried out in a year, the market is much shallower, now that only periods of between one and four years are covered.

- Development operations of coverage are possible for terms of three to four years for a level of US$500 million annually, which could be sufficient for the foreign financing estimations. The former implies that the increase in long term coverage provides the banks with potential and generates operations that create long term assets (passives) in dollars, thus enabling the structuring of these types of operations.

The cost of currency insurance for a local company is now manifested only in rates of interest associated with a forward contract. The banks do not charge any additional fee or financial intermediation.

For example, simulating a US$/UF forward that at 1 year has a cost at spot prices of US$ = UF-1.89%. The indebtedness that a foreign company can reach is US$ =7.15%[37]. The foreign financial cost in terms of UF - including currency insurance - is approximately UF+7.7%, which is very close to the local financing.

If the forward market were not developed, viable alternatives for foreign financing would be the following:

- Foreign financing by foreign banks that incorporate a premium for currency exchange risk. In this way, the exchange risk would be taken by the bank and the rate of interest would be LIBOR + spread + risk premium.

- The foreign bank generates clauses in the credit contract in US$, in such a way to obligate the concessionary firm to maintain other assets in dollars. For example, as a

part of their short-term political financing, the concessionary association must have a floor stock of negotiable stocks manifested in US$.

- Active participation of the government, for which there would be the following tools:

  - Set some sort of exchange in the basis of bidding, whereby any upward variation is indemnified according to previously determined procedures. For this mechanism, the State requires the possession of the counterpart in dollars. It must go through the Central Bank, because of the implications in altering the monetary policies, which is not currently viable.

  - Every six months or one year index a part of the tolls to the type of nominal currency observed, subject to a restriction of a percentage of the foreign financing. This implies that the concessionaire's revenues must be partly in UFs and partly in US$. This procedure was recommended by the World Bank, but has the disadvantage of passing on this cost to the users. In any case, if the highway tolls in Chile were indexed to US$, and not in accordance with the domestic inflation as they have been, these would be 15% less, figured according to the currency falls of the last three years.

  - Take advantage of the state guaranty for foreign debt and provide part of the IMGs as a currency guaranty contingent in UF, which allows for protection regarding currency variations, using the guaranty as an insurance for the foreign financiers.

  - Generate the conditions so that the AFPs (in reference to international diversification that is being assumed) acquire assets in US$, possessing passives in UFs that don't destabilize and thus can offer currency risk insurance to specific infrastructure projects in the form of direct participation.

  - Incorporate a credit risk guarantee in UFs with the intermediary banks of this type of insurance in the construction stage, in order to balance the differences in fluidity between US$ and UFs. This guarantee should be constructed to take account of different possibilities of projected devaluation.

The instrument of currency insurance should not be a concern, considering a foreign debt of up to three years with refinancing in UFs, given the financial market and current situation regarding the anticipated dollar, these factors demonstrate that the forward markets are in a developmental phase. This market can develop even more and accommodate its coverage according to the demand of the concessionaires and/or the emerging long term projects that are generated by the infrastructure sector in the country. All state participation would not affect the natural development of this market.

Notes:

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Preparation and Evaluation, CIAPEP - Catholic University of Chile and M.A. in Economics, Ilades-Georgetown University.

(2) D.F.L. MOP #164, article 11.

(3) Equivalent to 18%.

(4) Gómez Ibañez José, "General Conditions of Concession Contracts" (1993).

(5) In fact, the last report by the World Bank (1994) states that the concessionaires of private roads in Mexico negotiated tariffs for obtaining a certain profitability, guaranteed throughout the concession period. As a result, the tolls ended up being too high and the anticipated traffic didn't materialize, due to the fact the users preferred to use the state highways (with considerably lower tolls), even though the trip took twice the time.

(6) Judicial report by Attorney Monica Madariaga, solicited by MOP.

(7) The calculation were made, considering the 2 public tollbooths currently in use, figured according to the existing tolls for the weekend and weekday.

(8) The values for time used, to evaluate the time savings encountered between two points, are provided by the Central Planner (MIDEPLAN), and for passenger (lightweight) vehicles it can be up to US$/hour 10.4.

(9) For example, the social objective could be the diminishing of the accident rates or the reduction in the average cost of travel.

(10) See Harold Demsetz, "Why regulate Utilities," Journal of law and economics, 1968.

(11) See Baumol, Panzar and Willig, *Contestable markets and the theory of industry structure*, San Diego, 1982.

(12) Examples of evidence for sunken costs are found in the concessions of Pipeline. The question is: What is the alternative cost of the Pipeline once it has been built?

(13) It is difficult to measure sunken investments and in the majority of the cases, the conditions of demand and costs of technology are difficult to estimate econometrically.

(14) Electorate models have been developed where the functions of regulating agencies are maximized, subject to a series of restrictions.

(15) In Chile, historically, the size of the projects financed with public funds has barely reached 50 kms in roads, with a maximum investment of US$25 million dollars.

(16) In the case of mono-production, the scale economies exist when the median long rage costs are greater that the marginal costs.

(17) In spite of the difficulty in estimating the functions of cost, there is also empirical evidence of work, for example that of Jara and Munizaga (1993), that detected scale economies and diversity in Chile. In the work about charging for inter-urban routes, elaborated by the MOP (1995), this phenomena is detected in the case of the maintenance costs.

(18) The former, in absence of lump sum taxes or non-lineal charges.

(19) Op. cit.

(20) See point on charging.

(21) Strictly speaking, this supposes the absence of social costs in public funds. Another alternative to reach a 'first best' is to allow tariffs in 2 places, that is to say, charge a fixed tariff to enter a lane, plus another variable tariff depending on the use.

(22) See Friedmann, J.; Hinojosa, S; "Tarificación de la Red Vial Interurbana: Aspectos Téoricos y Aplicaciones" (Pricing on the Inter-urban Road Network: Theoretical Aspects and Applications) in Acts VII Chilean Congress of Transport Engineering, 1995.

(23) These aspects of equity are mentioned in Giulano, G.; "Equity and Fairness Considerations of Congestion Pricing", Special Report 24-2 National Research Council (1994).

(24) The efficiency is given as a conceptual fact of only paying for the use of the infrastructure. The equity is incorporated, assuming that if the users are paying for its use, there are no free riders.

(25) Rousseau (1993).

(26) However, it is worth noting two other difficulties. Firstly, the contracts are, by necessity, incomplete, limited in the first place by the cost of elaboration and also by the impossibility of foreseeing everything. A perfect contract, which includes all the possibilities of a transaction, doesn't exist. Secondly, a series of political difficulties. If, theoretically, the regulator's objective is that of the public good, in reality, the regulator still does not escape certain political demands, specifically re-election.

(27) A classic example of moral risk is given by fire insurance, which frequently is an insurance with partial coverage, so that the insured party has a financial interest in preventing fires.

(28) That which constitutes a noticeable difference in comparison with the paradigmatic cases of France, Spain and Mexico. In France there are 6,600 km of highways under concession, in Spain 2,300 km and in Mexico 5,400 km.

(29) Nevertheless, as has already been said, Chile has been charging tolls since 1963.

(30) The projects are long-term, and there can be interaction with more than one government. For example, construction can be done under the regimen of one government and the exploitation stage under two or more governments. Additionally, inside the government there can be different spokesmen and/or requirements for each one of the organizations involved with a project of highways or urban roads, in particular, different municipalities.

(31) Benninga Simon, "Numerical Techniques in Finance", The MIT Press (1992).

(32) A detailed analysis of this subject is found in Gonzalez, A.; Hinojosa, S.; and Muñoz, R.; "Mechanisms of Regulation in Highway Concessions", MIMEO, in publication (1996).

(33) Continuing to be 70% of the investment, plus costs of operation and maintenance.

(35) Private Sector Financing, BID, 1996.

(36) Another participation restriction for the foreign banks is the legal adjustment of the deposits, established by the Central Bank of Chile. This reaches 30% of the total debt or the substitute costs of fixed funds by the Central Bank ascendant to LIBOR + a percentage over 30%.

(37) This cost is LIBOR + spread = 7.15%.

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APPENDIX

DECREE No. 900
Ministry of Public Works

ESTABLISHES REFORMULATED, COORDINATED AND SYSTEMATIZED TEXT OF DFL MOP No. 164 OF 1991
(Published in Official Gazette on December18, 1996)

No. 900 .- Santiago, October 31, 1996

Considering the provisions in Article 32 No. 8 of the Political Constitution of the Republic of Chile and the powers vested on me by Article 5 of Law No. 19.460, of June 13, 1996.

DECREE:

1. **Revoke Decree No. 596 dated August 23, 1996**

2. **The Reformulated, Coordinated and Systematized Text of DFL MOP No. 164 of 1991, Public Works Concessions Law, shall be the following:**

CHAPTER I

General Provisions

Article 1.-

The execution, repair and maintenance of fiscal public works, pursuant to the system established in Article 87 of supreme decree No. 294, of 1984, of the Ministry of Public Works, the public bidding processes and concessions to be awarded, either for the exploitation of the works and services or as regards the use and enjoyment of national assets of public or fiscal use, assigned for the purpose of developing the service areas that are agreed on, shall be governed by the provisions stipulated in the decree law herein, the Regulations to this law (hereinafter the "Regulations"), and the terms of reference for each specific contract, which the Ministry of Public Works shall prepare to such end.

CHAPTER II

Preparatory Activities

Article 2.-

The Ministry of Public Works shall be the competent body to undertake all preparatory activities as are required, in accordance to the decree law herein and its complementary provisions.

Any natural or legal person may file a proposal with the Ministry for the execution of public works through the concession system. The qualification of these proposals shall be resolved by the Ministry of Public Works, clearly expressing the reasons for its decision, within the time limit of one year, as from the date at which they were submitted.

Only at the express request of the applicant, stated when submitting an idea for a private proposal and only for projects of great technical scope or complexity, or which involve a very high initial investment, the Ministry, may extend the said time limit, for a period of up to two years in all, so as to conduct the studies which that proposal entails, as from the date of the original submission. In these cases, the Ministry shall be expressly vested with power to establish sub-stages in order to carry out those studies, on the completion of which it may either reject the idea submitted or define new studies.

The proponent must submit the proposal in the manner that is established by the Regulations.

The bidding process for any public work which has been approved to be undertaken under the concession system shall be called within the time limit of one year following the approval of the corresponding application.

The proponent which has originated the bidding process shall be entitled to a bonus in the evaluation of the offer that it submits to the public bidding for the concession, the consideration of which will be specified in the Regulations and in the terms of reference. Additionally, the Ministry may offer the proponent, the reimbursement of all or part of the costs incurred to carry out the studies needed in order to develop the proposal. This reimbursement may be made directly by the Ministry of Public Works if there is no call for bid for the proposal submitted, if the bidding process is not perfected because the work is not awarded under concession or for any other reason in one or two calls for bids, or if the project which was the matter of the proposal is awarded through a method other than the concession system. Should it be concessioned through a bidding process, this reimbursement shall be borne by the concession grantee, in the manner and within the time limit established in the terms of reference. The Ministry shall provide the proponent with a certification, identifying the grantee and settling the amount of the reimbursement, which shall have an executive effect for all legal purposes. Should the proponent be granted the concession, the manner, form of payment and time limits under

which the reimbursement is to be effected shall be determined by the Ministry in the corresponding concession contract.

Article 3.-

The award of the contract and the granting of the corresponding concession or concessions, shall be preceded by the following actions, notwithstanding what is stipulated in Law No. 15.840

a) Approval, by the Ministry of Public Works, of the terms of reference of the bid, and

b) Selection of the concession grantee through the mechanisms established in this decree law and its complementary provisions.

CHAPTER III

ON THE BIDDING PROCESS

Granting the Concession and Executing the Contract

Article 4.-

Public bidding processes may be national or international, and either national or foreign natural or legal persons who qualify and meet the standards established in the Regulations may participate in them.

Article 5.-

In the case of a national or international open public bidding for works to be granted under the concession system and to be carried out in frontier areas that are determined by law, the President of the Republic shall, prior to the corresponding call for bid, submit all the information on the bidding process to the National Safety Council, so that this body may express its opinion regarding matters within its jurisdiction.

Article 6.-

In order to participate in the public bidding process mentioned in Article 4 of this decree law, a bid bond shall be required to ensure that the offer is maintained in the manner, to the amount and under the conditions established in either the Regulations or the administrative terms of reference.

Article 7.-

The public bidding of the work which is a matter of the concession shall be decided by evaluating all offers that are technically acceptable, in accordance to the characteristics that are specific to the works, on the basis of one or more of the following factors, following the evaluation system established by the Ministry of Public Works in the Terms of Reference:

a) tariff structure,

b) period of the concession,

c) State subsidy to the bidder,

d) payments offered by the bidder to the State, if and when the latter provides assets or rights to be used in the concession,

e) revenues guaranteed by the State,

f) degree of commitment to risk assumed by the bidder in the construction or in the exploitation of the work, such as, for instance, Acts of God or *force majeure,*

g) indexation formula for tariffs and system to review them,

h) total or partial score obtained in the technical qualification, according to what is established in the Terms of Reference,

i) offer made by the bidder regarding the reduction of tariffs to the user, or reduction of the concession period or extraordinary payments to the State when the return on equity or assets, as defined in the terms of reference of the bid or by the bidder, should exceed a maximum pre-established percentage. In any event, this offer shall only be possible in those bidding processes in which the State guarantees revenues in accordance to what is stipulated in point e) above,

j) qualification of other useful and additional services,

k) considerations of an environmental and ecological nature, as are, for instance, noises, scenic beauty in the case of the layout for a road, planting trees along the sides of public roads granted in concession, evaluated by experts and giving due consideration to their cost in relation to the total cost of the project, and

l) total revenues of the concession computed according to what is established in the Terms of Reference. This bidding factor is to be used only in an exceptional manner, the decision in this regard must be substantiated, and it may not be used in conjunction with any of the factors mentioned in points a), b) or i) above.

The definition of these factors and the manner in which they are to be applied in order to award the concession shall be established by the Ministry of Public Works in the terms of Reference. The said terms of reference may consider two or more factors specified as

a part of the economic regime of the concession. The terms of reference shall also establish whether the investment and construction is undertaken in one or several stages, during the period in which the concession contract is in force, in accordance to the attainment of the previously established levels of service. The investments and constructions which are intended as after the date of commencement of the partial or total operation of the work, may be subject to one or more time limits, or to the fulfillment of one or more conditions, either jointly or separately. The time limits and the conditions should be clearly established in the terms of reference.

In any event, if the terms of reference consider the factor mentioned in point d) of section one in this Article as a part of the economic regime of the concession, and the said factor is not a bidding factor, the payments must be equivalent to the economic value of the corresponding assets or rights. This shall be established through an expertise -previously contracted by the Ministry.

The factor mentioned in point d) of section one in this Article can only be a bidding factor in those cases in which the service provided by the work under concession is also offered in competitive conditions in the market which is deemed relevant for these purposes. The Ministry shall duly substantiate this condition in the terms of reference.

In turn, in the bids which originate from a private proposal, the factor considered in point h) of the said section can only be considered in order to make a decision regarding the offers submitted by two different bidders and which are equal from the economic standpoint.

The tariffs offered, and their corresponding indexation, shall be considered to be maximum tariffs, and therefore the concession grantee may reduce them.

The Director General of Public Works, with the approval of the Minister of Public Works, may, prior to the opening of the economic offer, require the bidders to submit clarifications, rectifications due to errors in the form or omissions, and to provide information, in order to clarify and define the correct sense and scope of the offer, thereby preventing the disqualification of one of them due to formal aspects in its technical evaluation.

Article 8.-

The award of the contract mentioned in Article 1, shall be adjudged through a supreme decree of the Ministry of Public Works, which, in addition, is to bear the signature of the Minister of Finance.

The contract shall be made effective once the supreme decree of award is published in the Official Gazette.

Article 9.-

The concession grantee is obliged to:

(a) Incorporate, within the time limit and in compliance with the requirements determined by the Regulations or the Administrative terms of reference, a joint stock company under the operation of Chilean law or an agency of a foreign corporation, with which the contract is understood to be entered and the purpose of which will be the execution, repair, maintenance and operation of fiscal public works under the system established in Article 87 of the supreme decree No. 294, of 1984, of the Ministry of Public Works.

(b) Execute in the presence of a notary public three copies of the supreme decree of award of the concession, as an indication of the acceptance by the concession company of its contents, and execute one of the copies of the supreme decree in the presence of the same notary public, within the time limit established in the Terms of Reference, as from the date of its publication in the Official Gazette. One of the copies mentioned above shall be delivered for purposes of record to the Concessions Department of the General Directorate of Public Works, and another to the Legal Department of the Ministry of Public Works. The copies executed in the manner described shall give faith to all concerned and have executive merit with no prior acknowledgment.

The said time limits shall be final and can not be lower than sixty days. The failure to perform the obligations mentioned in points a) and b) shall be declared through a supreme decree of the Public Works, in which the said award shall be left without effect. In this case, the Ministry may call for a new public bidding or, through the mechanism of a private bidding, call the other bidders who already participated in the former bidding process to improve their offers within a time limit of 15 days.

For purposes of computing the commencement of the term of the concession contract, it shall be governed by what is stipulated in Article 25 of this law.

Article 10.-

In the concession contract a record shall be made of the other benefits that are included as a retribution for the services offered, according to what is established in the terms of reference, such as concessions for tourist services, food and beverage services , advertising or others. In those cases in which, on occasion of the execution of the works, the concession grantee should reclaim fiscal riparian lands which had previously been under water, the Ministry may offer to give in payment a part of reclaimed fiscal riparian lands or other pre-existing lands, either jointly or alternatively to the other benefits established in this law.

Article 11.-

The concession grantee shall receive as the sole compensation for the services rendered, the price, tariff or subsidy agreed on and the other additional benefits expressly

stipulated. The concession grantee is not obliged to establish exemptions in favor of any user.

Article 12.-

The concession grantee must submit a performance bond for the construction stage, in the manner and to the amount established in the Terms of Reference.

Article 13.-

Prior to the commissioning of the work, either in full or a part of it, which could be exploited independently, the concession grantee is to give a guaranty bond to warrant the operation in the manner and to the amount established in the Terms of Reference.

Article 14.-

The surety bonds mentioned in this decree law are to be sufficient, and can be either real or personal. Their amount and nature shall be established in the Terms of Reference.

CHAPTER IV

Purchase, Expropriation and Limitations of Private Property

Article 15.-

The assets and rights which the concession grantee acquires at any title, and which are a part of the concession, can not be transferred separately from the concession, nor mortgaged or subjected to liens of any kind, without the authorization from the Ministry of Public Works, and shall be transferred to the fiscal domain on the termination of the concession.

In the case that it is needed to expropriate assets and rights necessary for the construction of the works and their complementary services, it shall be effected by virtue of the declaration of public utility established in Article 105 of decree No. 294, of 1984, of the Ministry of Public Works, and pursuant to the procedure established in decree law No. 2.186, of 1978.

All expenditures, disbursements or expenses which originate due to the acts or contracts mentioned in this Article shall be borne by the concession grantee. However, the State may contribute either partially or totally to the payment of the expropriations if the Terms of Reference so establish it.

Article 16.-

If in the case of the execution of the work in concession it becomes absolutely necessary to modify existing encumbrances, the concession grantee is obliged to re-establish them, at its expense, in the manner and within the time limit established by the Ministry of Public Works in the Terms of Reference.

CHAPTER V

Faculties of the Administration

Article 17.-

The commissioning of the work shall be authorized by the Ministry of Public Works after verifying its conformity to the projects and other technical specifications approved. It can be undertaken in parts, providing that each one of them is in itself a unit which can be operated independently and under the conditions to be determined in the corresponding Terms of Reference.

Article 18.-

Both during the construction stage as well as during the operation stage, the Ministry of Public Works shall be entitled to apply the penalties established in the Terms of Reference to the concession grantee who fails to perform its obligations.

Article 19.-

The Ministry of Public Works, as from the moment that the contract is signed, may modify, for reasons of public interest, the characteristics of the works and services agreed on thereto and, as a consequence, must compensate the concession grantee with the indemnifications required should there be any damage, by agreeing with the concession grantee as to the indeminifications which may be expressed during the period of the concession, in the tariffs, in the contributions or subsidies or in other factors of the economic regime of the concession agreed on, and resorting to one or several of those factors simultaneously. The conflicts which may originate between the concession grantee and the Ministry regarding the said indemnification, shall be settled pursuant to what is stipulated in Article 36.

The terms of reference shall establish the maximum amount of the investment which the concession grantee may be bound to effect pursuant to what is established in the foregoing section, as well as the maximum time limit within which the Ministry may order the modification of the works under concession. If the terms of reference make no indication in this respect, the maximum amount of these investments shall not exceed 15% of the total amount of the initial investment made by the concession grantee, according to the value defined after the final delivery of the work, and it may not be

requested either, once half of the total term of the concession has elapsed, except in those cases of an express written agreement with the concession company.

The terms of reference shall establish the manner and the time limit within which the concession grantee may apply for a review of the tariff system, of its escalation formula, or of the period of the concession, due to supervening causes and justify such an action, being entitled to do so for one or several factors simultaneously. In those cases in which the terms of reference do not consider these matters, the conflicts which may originate between the parties shall be governed by what is stipulated in Article 36 of this law.

The modifications shall be made through a supreme decree clearly stating their reason to be issued by the Ministry of Public Works, which is to bear, in addition, the signature of the Minister of Finance.

Article 20.-

If during the period when the concession is in force, the work were not to be sufficient for the provision of the service at the levels defined in the concession contract and its expansion or improvement were deemed to be convenient at the initiative of the State or at the request of the concession grantee, a complementary agreement to the said concession contract shall be entered into. This agreement shall include the special conditions which the execution of the works shall be subject to and its effects on the system of tariffs or on any other factor of the economic regime or on the concession period, and the Ministry of Public Works is vested with power to include in the said agreement, as a compensation, one or several of these factors simultaneously.

Notwithstanding the above, the terms of reference may consider other mechanisms of compensation, in terms either of the concession period or of any other of the economic factors in the standing contract, to defray the additional works not included in the contract, subject to the same conditions mentioned in the preceding section.

The approval of the corresponding complementary agreement shall require a prior report from the corresponding Directorate, through a supreme decree of the Ministry of Public Works, which is to bear, in addition, the signature of Minister of Finance.

CHAPTER VI

Rights and Obligations of the Concession Grantee

Article 21.-

The concession grantee shall perform the functions written into the concession contract in accordance to the provisions of public law, particularly in what respects its relationship with the Ministry, with the regulations regarding the construction and operation systems of the work and the collection of tariffs, their indexation system and reciprocal obligations with the State, which make up the economic regime of the

contract. Likewise, the concession grantee shall abide by the legal provisions which govern the activity granted in concession.

In turn, in what respects its economic rights and obligations with third parties, the concession company shall be governed by the provisions of private law and, in general, entitled to carry out any lawful transaction, without any need for a prior approval from the Ministry of Public Works, with the sole exception of those activities which are expressly regulated by this law and those which are stipulated in the contract. Therefore, among others, the concession grantee may pledge the contract or collateralize the cash flows or future revenues of the concession to guarantee any obligations deriving from the concession thereto, freely cede or pledge any payment offered to the government and which is stipulated in the contract, with no need for any prior approval from the Ministry of Public Works.

As from the date of the signature of the contract, the concession grantee shall be able to transfer the concession or the rights in the concession company. The Ministry of Public Works shall authorize such a transfer providing that it complies with what is stipulated in the following section. Should this not be the case, the Ministry shall deny the approval through a decision with due consideration to, and expression of the facts. If sixty days have elapsed from the date on which the approval was requested, and the Ministry has not reached any decision, it shall be understood that it gives its approval.

The voluntary or forceful transfer of the concession must be on an overall basis, including all the rights and obligations of the corresponding contract, and shall only be made to a natural or legal person, or group of them, who meets all the requirements needed to participate in a bidding process, is in no way incompetent and complies with what is stipulated in Article 9 of this law.

The Ministry shall give its authorization providing that the transfers in favor of an collateral creditor, when these are the result of a foreclosure of obligations guaranteed by the collateral guarantee which is established in Article 43 of this law, in favor of any financial institution subject to the oversight of the Superintendency of Banks and Financial Institutions, or in favor of Investments Funds regulated by Law No. 18.815, or by Pension Funds Management Companies, stipulated in accordance to the provisions of decree law No. 3500, of 1980, and, most definitely, in favor of any other natural or legal person who meets the requirements established in the terms of reference.

Article 22.-

The legal system of the concession, during the construction stage, shall be as follows:

1. The concession grantee shall enjoy all the rights and obligations of the beneficiary of the expropriation limited to what is necessary to perform the concession contract.

2. The works shall be carried out at the entire risk of the concession grantee, who is to make all disbursements such as are needed until its total completion, whether they derive from an Act of God, *force majeure*, or of any other nature. The State shall not

be responsible of the consequences derived from contracts entered into by the concession grantee with either construction companies or vendors. However, the State shall contribute to the payment of damages caused by an Act of God or a *force majeure*, if it were so established by the Terms of Reference.

3. When the delay in meeting the partial deadlines or the final deadline were imputable to the State, the concession grantee shall be entitled to an extension equal to the period of interruption or stoppage, notwithstanding the compensations which accrue.

4. Both the waters as well as the mineral deposits or materials that may be found, as an outcome of the execution of the public works, shall not be understood to be included in the concession, and their use by the concession grantee shall be governed by the corresponding legal provisions, and

5. The construction of the work may not interrupt traffic on existing roads. Should an interruption be absolutely necessary, the grantee of the concession is bound to create conditions for suitable provisional traffic.

Article 23.-

The juridical regime of the operation stage shall be as follows:

1. The concession grantee is to maintain the works, the access roads, signaling and services in normal conditions of use, and

2. The continuity of the service being rendered will bind the grantee, especially, to:

    a) Provide it in conditions of absolute normality, eliminating any causes which originate problems, discomfort, inconveniences or danger to the users of the works, except that the adoption of measures which alter the normality of the service are due to safety reasons or urgent needs for repair,
    b) Provide it without interruptions, save for exceptional situations, due to an Act of God or a *force majeure*, the effects of which shall be qualified by both parties, agreeing on the measures that are necessary to attain a more expedient and efficient resumption of the service. The value of the works shall be agreed on by both parties and, should there not exist should an agreement, the parties may resort to an expertise which shall determine, based on what is stipulated in the terms of reference, the qualification, measures or evaluation, as the case may be. The parties shall pay the price according to the conditions stated in the concession contract.

Article 24.-

The concession grantee must ensure a perfect enforcement of the provisions and regulations regarding the use and conservation of the works granted.

CHAPTER VII

Term, Suspension and Termination of the Concession

Article 25.-

The concessions mentioned in the this decree law shall have a duration which is determined by the decree of award to the grantee, and in no case shall exceed fifty years.

The term shall be computed pursuant to what is established in the terms of reference. In no event, the initial date shall be prior to the date on which the supreme decree of award is published in the Official Gazette.

Once the term of concession expires, the works shall be once again granted in concession by the Ministry of Public Works for their conservation, repair, expansion or operation, as a whole, divided, or integrated in conjunction with other works. The corresponding public bidding process shall be conducted with the necessary anticipation in order to prevent the existence of a continuity solution between both concessions.

In case that the works granted in concession have become or that for technical reasons it is contrary to law, inconvenient or harmful to the Chilean State to grant them in concession again, the President of the Republic may issue a declaration in that sense, through a decree in which due consideration to, and expression of the facts is stated, and exempt them from fulfillment of what is indicated in the above section.

Article 26.-

The concession shall be suspended temporarily:

1. In the case of external war, internal commotion, or *force majeure* which impede the provision of the service:

2. When there is a partial destruction of the works or of their elements, to the extent that their use becomes unviable over a period of time, and

3. For any reason stipulated in the terms of reference.

Article 27.-

The concession shall be terminated for the following reasons:

1. Completion of the period for which it was granted with its modifications, if this were the case;

2. Mutual agreement between the Ministry of Public Works and the concession grantee. The Ministry shall give its approval for this agreement only if the creditors who have a guarantee pledged in their favor, pursuant to what is stipulated in Article 43, should accept to lift it or were to previously accept, and in writing, the said advanced termination;

3. Serious breach of the obligations by the concession grantee; and

4. Those stipulated in the terms of reference.

Article 28.-

The declaration of a serious breach of the concession contract shall be requested, on the basis of some of the causes established in either the corresponding concession contract or in the corresponding terms of reference, by the Ministry of Public Works to the Settlement Committee provided for in Article 36 in this Law. The said committee shall make an award in its capacity as an Arbitration Committee, pursuant to what is established in the said Article.

Once the Settlement Committee has ruled a serious breach of contract, the Ministry of Public Works shall designate an intervenor, who shall be only vested with the powers necessary to enforce the due performance of the concession contract, and the provisions in Article 200, numbers 1 to 5 of Law No. 18.175 on Bankruptcies shall be applicable. This intervenor is liable for slight fault or neglect.

The Ministry must, in addition, to call a public bid for, and within a time limit of 180 days as from date on which the declaration was made, the concession contract for the remainder of the period. The Terms of Reference shall establish the requirements to be met by the new concession grantee which, in no case, should be more onerous than those imposed on the original concession grantee. When the new grantee takes over the concession, the intervenor designated by virtue of what is stipulated in the foregoing section shall cease in his functions.

In the first call for bid the minimum of the bids can not be less than two thirds of the debt incurred by the concession grantee, nor lower than half in the second call for bid. Should there be no interested parties, a third call for bid will be made with no minimum.

The declaration of a serious breach of the obligations by the grantee of the concession shall make enforceable the payment of the loans that are guaranteed by the security, pledge-collateral established in Article 43 of this law . They shall be made effective with the proceeds of the public bidding with preference over any other credit, and the remainder, if there were any, shall be the property of the original concession grantee.

In the event that during the intervention the concession company should have obtained loans with the approval of the creditors indicated in the foregoing section, and that the payment of those loans were enforceable, they shall be made effective with the proceeds of the said bidding process with preference to those guaranteed with the special guarantee of the public work concession.

CHAPTER VIII

On the inspection and oversight of the Administration

Article 29.-

The inspection and oversight of the enforcement by the concession grantee, of its obligations, during both the construction stage as well as the operation stage of the work shall be the responsibility of the corresponding Directorate of the Ministry of Public Works. In case of a breach of contract, it can apply penalties and fines as established by the Regulations and the terms of reference, providing that they are lower than 500 monthly tax units on the concession grantee. Notwithstanding the above, the concession grantee may resort to the mechanisms mentioned in Article 36 in this law.

Article 30.-

In accordance to what is established in the preceding Article, the corresponding Directorate shall, with a prior favorable pronouncement of the Settlement Committee mentioned in Article 36, be vested with the power to:

1. Impose on the concession grantee the penalties established in the administrative terms of reference, whenever they are equivalent to or higher than 500 monthly tax units;

2. Declare the temporary suspension of the concession whenever some of the reasons established in Article 26 should be in place, and

3. Request the declaration of the termination of the concession when any of the reasons established in Article 27 should be in place.

CHAPTER IX

Of the Concessions of National Assets of Public or Fiscal Use, For the Development of the Service Areas to be Agreed on.

Article 31.-

The decisions which the Minister of Public works should rule, by virtue of the powers vested on him in letter i) of Article 5, of the Supreme Decree No. 294, of 1984, of the Ministry of Public Works, shall, at least, include the following:

a) Identification of the concession grantee;

b) Identification of the asset which is the matter of the concession, specifying its surface, metes and bounds and the services which shall affect it; and

c) Period of the concession.

These resolutions shall be made at the request of the concession grantee for the operation of a public work, in one or more acts, and with respect to all or part of assets agreed on.

Article 32.-

The concessions of assets of public or fiscal use, the administration of which is entrusted to other authorities, or with respect to which the standing legal provisions calls for the intervention of other agencies, shall be granted after the corresponding authority or agency issues a report, which is to be requested and issued prior to the release of the supreme decree of award of the contract.

Article 33.-

The concessions which this Chapter refers to shall be deemed to be accessory to the operation of the corresponding work, and, consequently, they shall cease to exist by the sole operation of the law, on the expiration of latter for any reason.

Article 34.-

The resolution which awards these concessions shall entitle the concession grantee to use and enjoy the corresponding asset, and the said resolution shall suffice as the sole title to exercise its rights with respect to third parties.

The concession grantee shall be entitled to exploit the asset or assets which are a matter of the concession, on his own behalf or on behalf of third parties, though it remains as the sole party responsible with to the Ministry of Public Works.

CHAPTER X

Indemnifications

Article 35.-

The concession grantee shall be liable for the damages of any nature, which as a result of the execution of the work or the exploitation of the work should be caused to third parties, unless they are exclusively imputable to measures adopted by the Ministry of Public Works, after the contract has been awarded.

Article 36.-

The conflicts or complaints that may ensue from the interpretation or application of the concession contract or which originate from its execution, shall be taken to a Settlement Committee which shall be made by a university graduate holding a professional diploma designated by the Minister of Public Works, a university graduate holding a professional diploma designated by the concession grantee and a university graduate holding a professional diploma designated by mutual agreement of both parties, who shall preside the Committee. Should there not exist an agreement, the latter shall be designated by the President of the Court of Appeals of Santiago.

The members of the Committee must be designated at the beginning of the corresponding concession, notwithstanding the fact that they may be replaced whenever it is necessary or it is deemed convenient. The Committee is to establish its rules and procedures giving due consideration, in any event, to a hearing of both parties and the mechanisms to receive the evidence and information that they provide and is to establish, as soon as the members are designated the manner in which the requests or complaints shall be taken to them and the mechanism of notification that it shall use to advise the parties of the resolutions or decisions that it adopts.

The creditors who have set in their favor the guarantee established in Article 43 in this law, shall be admitted to the procedures which should originate from the operation of this Committee, providing that they are interested and in a capacity as independent third parties.

Once a complaint is lodged with Committee, and at the request of the plaintiff, the said Committee may rule the suspension of the effects of the resolution of the Ministry which the said complaint refers to.

Once the intervention of the Committee is sought, it will seek a settlement between the parties. Should this not take place within a time limit of 30 days, the concession grantee may ask the Committee, within a period of five days, that it should sit as an Arbitration Committee, or resort, within the same time limit, to the Court of Appeals in Santiago. In the first case, the Committee shall act in accordance to the standing procedures established for arbiters and shall have a time limit of 30 days to make an award, period during which the suspension of the effects of the resolution or decision of the Ministry shall hold. The ruling of this Committee, in this case, shall not be appealable in any manner.

In the event that the concession grantee should file a complaint with the Court of Appeals, it will be filed in accordance to the procedure established in Articles 69 to 71 of Law No. 18.840, the Constitutional Organic Law of the Banco Central de Chile (Chilean Central Bank), and to the following provisions:

1. No consignment bond shall be required.

2. The Director General of Public Works shall be notified of the appeal.

If the concession grantee should neither ask the Committee to rule as an Arbitration Committee, nor file the complaint with the Court of Appeals, the resolution or decision of the Ministry shall hold.

The provisions of this Article shall hold notwithstanding the faculties of the Judicial Power and the General Accounting Office of the Republic.

CHAPTER XI

Other Provisions

Article 37.-

Should the concession grantee abandon the work or interrupt the service without any justification, the Ministry must request the Settlement Committee to so declare it and give the authorization to take action to designate an intervenor.

The committee shall hear the matter in its capacity as an Arbitration Committee, according to the provisions of the preceding Article, and shall have a time limit of 3 working days as from the date of submission of the application to decide with sound reasons. It may extend the said time limit for an equivalent period, only on one occasion and through a decision which clearly stipulates the basis on which it was made. If the said time limit elapses and no decision is made, it shall be understood that the Ministry is authorized to proceed with the designation.

The intervenor appointed pursuant to what is stated in this Article shall only be vested with the powers of administration necessary to oversee the fulfillment of the concession contract. He shall cease in his functions as soon as the concession grantee resumes his duties, and the expression of the will of the concession grantee to do so shall suffice, formal and in writing, approved by the Settlement Committee. In any case, if after ninety days following the appointment of the intervenor, the concession grantee does not

resume his activities, it shall be understood that there exists a serious breach, and the provision stipulated in Article 28 shall be applied.

If on account of the problems which the case involves, The Committee may resort to law and order forces so as to obtain the immediate resumption of the service while the resolution regarding the intervention is pending. In this case, the charge of the corresponding toll or tariff to the users may be suspended. The Committee may leave this decision without effect at any time.

The intervenor appointed pursuant to what is stipulated in this Article shall be liable only for slight fault or neglect.

Article 38.-

In the event of bankruptcy of the concession grantee, the first ordinary meeting of creditors must decide, at the proposal of the syndicate or of two or more creditors, whether the concession shall be auctioned or shall continue to transact its ordinary business activity of the concession grantee. If there is no agreement as to one or the other of these matters, the concession is to be auctioned.

To auction the concession, the terms of reference of the said auction must abide by the terms, benefits and conditions of the original concession contract. The minimum for the bids, at the first auction, can not be lower than two thirds of the amount of the debt incurred, nor lower than half that amount in the second auction. If there are no bidders, the third auction shall be made without a minimum.

The award of the concession shall conform to what is stipulated in Article 21.

Should the meeting of creditors decide that the concession grantee shall continue to transact its ordinary business activity, it shall not be subject to any other date of expiration than that which remains of the concession. In all other aspects, it shall be governed by what is stipulated in Articles 112 and following of law No. 18.175.

In the case of bankruptcy, the Ministry is to appoint a representative who, acting in a coordinated manner with the syndicate and the meeting of creditors, shall oversee the continuance of the service or services which are a matter of the concession, notwithstanding the fact that the fiscal interest be represented by whoever it may correspond.

Article 39.-

For the purposes of this law, it shall be understood by fiscal public work any real property built, repaired or maintained in exchange for the temporal concession of its exploitation over national assets of public or fiscal assigned to develop service areas.
The Ministry of Public Works is competent to award in concession any public work, except in the cases that such works are placed under the jurisdiction of another Ministry,

public service, Municipality or public enterprise or any other agency which is a part of the administration of the State. In these cases, the said public entities may delegate through an agreement entered into with Ministry of Public Works, the award in concession of such works, governed by this law. In these cases all the juridical statute on public works concession shall be understood to be a part of the said agreement, that is, both the bidding procedure, the award and the execution, conservation, and exploitation as well as the faculties, rights and obligations which stem from the law.

The concessioned works may, in accordance to this law, include, either as a whole or separately, the concession of the use of the underground and the construction rights in the space on the national assets of fiscal or public use assigned to them. Likewise, the Ministry may grant those rights in concession or sell them establishing their physical connection and accesses with the work or works which are called for bid or which have been previously concessioned.

Article 40.-

The Ministry of Public Works shall be the sole agency entitled to regulate and establish the maximum and minimum speed limits on the roads built, repaired or maintained by the concession system pursuant to this provisions in this law and no other agency shall have jurisdiction to do so.

These limits may be higher than those established in accordance to the traffic legislation, when the standards and layout of the roads determined by the Ministry of Public Works so allow it. However, in no case, shall it be possible to establish speed limits, as regards the works granted in concession, below those considered for the same situations within the legislation.

Article 41.-

The terms of reference shall stipulate the accesses and connection works which a work granted in concession is to have, including those which permit the use of the existing accesses which have been authorized under the operation of the law.

The concession grantee, in accordance to what is stipulated in the terms of reference, or at its request, in those cases which are not considered within the said terms of reference, with the prior authorization from the Ministry of Public Works, in both cases, and which may not reject it unless there is a justified reason, shall be vested with the power to authorize new accesses and connections to the concessioned work to interested third parties, and shall be entitled to charge those parties a payment for the access, additional to the cost of the works needed in order to commission them. The amount of these payments shall be agreed on between the concession grantee and the interested party or

parties pursuant to what is established in the terms of reference or freely, in the cases not considered in them.

Article 42.-

When the user of a concessioned work defaults the payment of its tariff or toll, the concession grantee shall be entitled to file a petition with a court of competent jurisdiction to obtain payment. Pursuant to the procedure established in law No.18.287, the Court of Local Police which corresponds to the territory where the event took place, shall have jurisdiction to hear the matter and who on ruling the said payment, shall impose on the party ruled against a compensatory indemnification in favor of the concession grantee, of a value equivalent to forty times the defaulted payment, plus the indexation according to the Consumer Price Index between the date of default and that of actual payment or otherwise the value equivalent to two monthly tax units, being obliged to apply the higher value. The same ruling shall adjudge the court and personal costs, calculating them with the total indexated value of the tariff and indemnification mentioned.

In order to establish these infringements, the means of proof shall be photographs, videos, and any other technical means which the Ministry of Public Works should have authorized in order to control default of the tariff payments.

Article 43.-

A special collateral guarantee for a public work concession is established and which shall not affect the right to use and enjoy the rights and assets pledged. It shall be negotiated by the concession grantee with the financing sources of the work or its operation or through the issuance of debt certificates of the concession company. It may affect:

a) on the right to the concession of the public work originates from the contract to the grantee of contract;
b) on all payment committed by the State to the concession company at any title, in accordance to the concession contract, and
c) on the revenues of the company.

The said collateral guarantee shall be executed through a public deed and filed for purposes of record with the Registrar of Deeds of the City of Santiago and of the city in which the concession were domiciled, should it be different, in Registry of Industrial Guarantees. Additionally, a record shall be made on the inscription of the deed of the concession company in the corresponding Registry of Commerce. When this pledge affects shares of the concession company, a record shall also be made on the corresponding registries of the company.

The said collateral guarantee shall be subject to the provisions in Articles 25, section one; 30; 31; 32; 33; 36; 37; 38; 40; 42; 43; 44; 46; 48; 49 and 50 of Law No. 5.687, on Industrial Guarantees.

The Judge of the court of competent jursidiction in the capital city of the Region in which the concession company is incorporated or the Court of Appeal in which the concession grantee is domiciled, shall be competent with regards hearing any appeal or executing this special guarantee in relation to the concession of a public work, at the election of the creditor.

TRANSITORY ARTICLES

Article 1.-

The concession companies with their concession contract public work in force as at the date of publication of this law in the Official Gazette may, within the term of the next three months, opt for the application of the provisions in this law to their corresponding contracts. Those who do not file an application to this end, shall continue to be governed by the standing legal norms as at the date of the award and when the concession contract became effective.

The grantees of concessions of works awarded as at the date of publication of this law whose contracts have not become effective and those participating in calls for bids that are awarded a concession, may exercise the same right, within the next three months following the date at which the contract became effective.

When the concession companies or the grantees of concessions opt to operate under the modificatory provisions of this law in accordance to what is stipulated in the foregoing sections, the Ministry of Public Works shall issue, without any further action, a decree modifying the decree of award to the concession grantee in which it shall record the change in the legal regime of such contract.

Article 2.-

The tax-payers who, at the date in which this law comes into force, have entered into contracts for the construction, maintenance and repair of a work of public use, the price at which the concession of the corresponding work is awarded, shall continue to be subject to the tax provisions standing at the date at which such contracts were awarded. Notwithstanding the latter, those tax-payers may opt, within a term of three months following the date of publication of this law operate under the taxation regime which is established with respect to their contracts in the Income Tax Law and in decree law No. 825, of 1974. To this end, they must communicate this option to the corresponding Regional Directorate of the Internal Revenue Service. The said regime shall be applied, in what relates to the tax on sales and services, as from the month following that in which the communication is made of the revenue that the tax-payer receives as from that date, and as from January 1 of the same year in which the communication is submitted,

in what respects the taxes established in the Income Tax Law for the income which the tax-payer realizes or receives as from that date.

Article 3.-

Notwithstanding the provisions in transitory Article 1, the private individuals mentioned in sections one and two of the said Article which do not exercise the option mentioned therein, may opt in the sense that the provision of the second section of Article 41 be applied to them.

FILE FOR PURPOSES OF RECORD, DECLARE CONFORMITY TO STANDING LAWS AND PUBLISH.

EDUARDO FREI RUIZ TAGLE, PRESIDENT OF THE REPUBLIC.

RICARDO LAGOS ESCOBAR, MINISTER OF PUBLIC WORKS.

THE BOT PROJECT OF HONG KONG'S AIRPORT CORE PROGRAMME

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THE BOT PROJECT OF HONG KONG'S AIRPORT CORE PROGRAMME

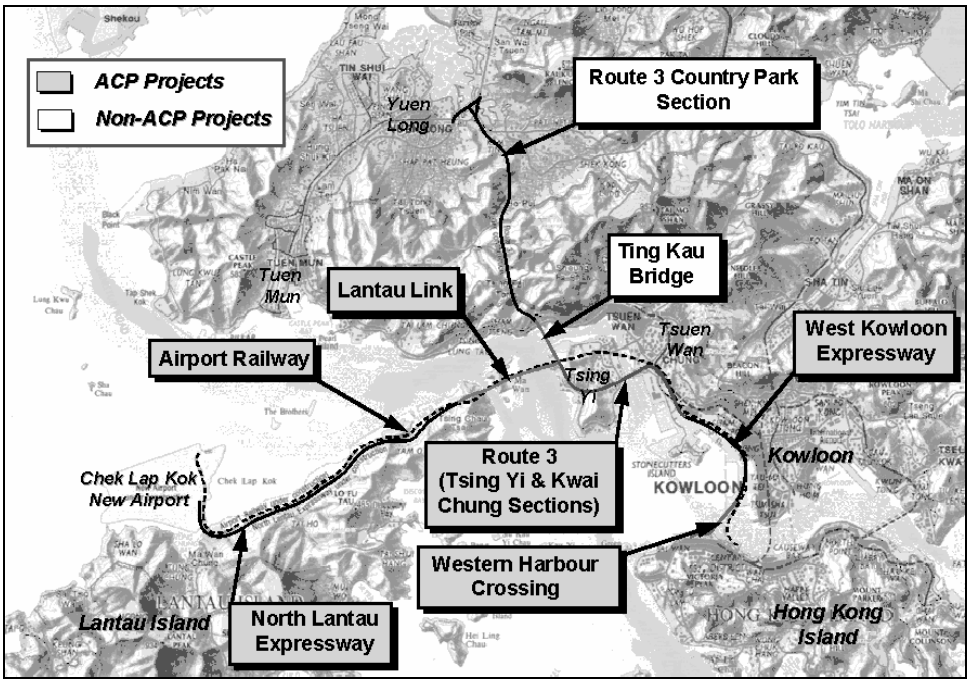
SYNOPSIS

Hong Kong's Airport Core Programme (ACP) will be completed in July with the opening of the new Hong Kong International Airport and Airport Railway. The ACP consists of 10 projects each in their own right of major significance in construction terms. The majority of these projects was funded under Hong Kong's Public Works Programme. However, one of them, the Western Harbour Crossing was funded by the private sector under BOT arrangements. The paper will briefly describe the project and the privatisation arrangements.

1. Introduction

1.1 As well as being part of Hong Kong's Airport Core Programme (ACP), the Western Harbour Crossing (WHC) is the fourth of five road projects in Hong Kong that have been privatised under Build-Operate-Transfer (BOT) arrangements. The WHC forms the southernmost section of the new strategic Route 3 highway which will link Hong Kong Island with the north west New Territories, and provide a connection to Lantau Island via the new Lantau Link and to the new Hong Kong International Airport (HKIA) at Chek Lap Kok. The location of the WHC, Route 3 and the route to the HKIA are indicated in the *Layout Plan*.

Layout Plan



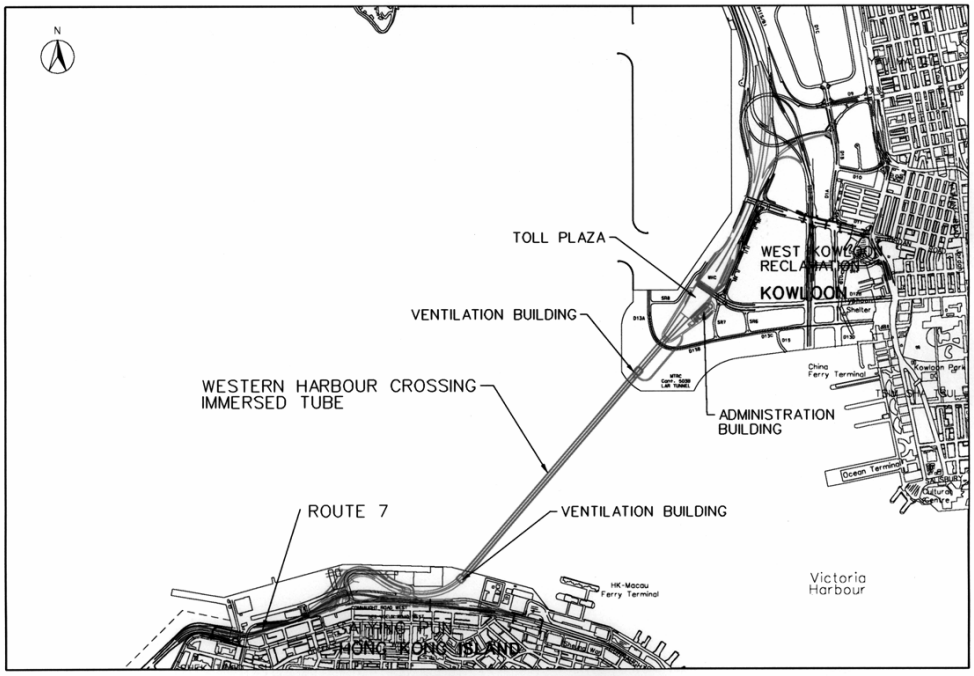
2. Project Description

2.1 The WHC is a dual 3-lane immersed-tube road tunnel across Hong Kong's harbour with landfalls on the reclamation site at Sai Ying Pun on Hong Kong Island and on the West Kowloon Reclamation, the latter being constructed as another ACP project. On Hong Kong Island the tunnel is connected to Connaught Road West and Route 7 while on the West Kowloon Reclamation the tunnel is connected to the West Kowloon Highway and other roads through the Yau Ma Tei Interchange.

2.2 The tunnel is 2 km long between portals with an immersed tube length of 1.36 km. The immersed tube consists of 12 units each 113 m long x 38 m wide and 9.5 m high. The units were cast in 3 batches of 4 units in a casting basin within a quarry on the southern shore of Hong Kong Island, towed into Hong Kong's harbour by tugs, and lowered into position one-by-one between the ventilation buildings built just inside the seawall at the 2 landfalls. The balance of the tunnel on the landfalls was built by the cut-and-cover method.

2.3 The project also included the construction of at-grade and elevated approach roads on both sides of the harbour as well as a dual 3-lane 1.7 km extension of the Rumsey Street Flyover (part of Route 7), from Central to Belcher Bay. On the West Kowloon Reclamation there is: a toll plaza, an administration building, workshops and other tunnel facilities. The administration building houses a state-of-the-art control room for monitoring all aspects of the tunnel's operational facilities.

Layout Plan of Western Harbour Crossing



3. Privatisation

3.1 A tried and trusted process for privatisation has now been developed and fine-tuned through undertaking BOT projects prior to the WHC. Significant aspects of that process include the following:

- Engineering Feasibility Study
- Financial Study
- Preparation of Project Brief
- Tender Invitation
- Tender Assessment
- Tender Negotiation and Short-listing
- Franchise Award
- Project Agreement
- Project Organisational Structure and Relationships
- Land Acquisition
- Construction Period
- Design and Checking Procedure
- Toll Increase Mechanism

4. Engineering Feasibility Study

4.1 This 12-month feasibility study was undertaken by consultants employed by the Highways Department and was completed in 1991. It provided deliverables as follows:

Engineering feasibility	described the proposed alignment and form of the crossing and assessed the transport, alignment, structural and construction issues.
Drawings	engineering drawings defining the proposed alignment and form of the crossing.
Site Investigation	records the results of the land and marine based site investigations undertaken.
Financial Analysis	reviews the financial aspects of the project with reference to its viability as a private or public sector project.
Environmental Impact	describes the probable effects on the environment and the required monitoring and mitigation measures which will have to be implemented.
Design Memorandum	for use as part of the privatisation project brief.

5. Financial Study

5.1 While the Feasibility Study included a review of the financial aspects of the project with particular reference to its viability for either public or private sector participation, the government considered financial consultants were needed to assist in reviewing and updating the conclusions of the financial analysis. The selected consultant also provided advice to the government during the periods leading up to invitation of tenders, and during tender assessment, negotiation and award of the franchise.

6. Project Brief

6.1 The Project Brief, which was drawn up with the assistance of legal consultants, was used as the basis for inviting tenders for the franchise. The purpose of the Brief was threefold:

i) to explain the government's general requirements in respect of the project and the franchise and to provide certain relevant information;

ii) to provide guidance in the preparation of tenders and explain the criteria and procedure based on which tenders will be assessed; and

iii) to set out in detail the government's design and construction requirements in respect of the project and the government's operation, maintenance and other requirements in connection with the franchise.

6.2 The Project Brief consists of a number of documents including schedules and annexes. The documents for the WHC were as follows:

Main volume with sections covering: General Conditions for Submission of Tenders, Assessment of Proposals, Financial and Related Aspects, Legal Matters, Land Matters, Transport/Planning Information, and Design and Construction Requirements.

In addition there were 18 Annexes covering a miscellany of topics such as the Design Manual, Planning Data, Project Land, Interfacing Projects, etc.

6.3 The final report from the government's Feasibility Study, with the exception of the financial analysis, was made available to tenderers as part of the Project Brief. This ensured that the consultants employed by the government to undertake the feasibility study did not hold an unfair advantage over other consultants employed by other tenderers. By this means no engineering consultant employed on the feasibility study was debarred from involvement in assisting a tenderer.

7. Tender Invitation

7.1 On completion of the Project Brief, tenders were invited by means of notices in local and international newspapers. Any organisation was free to obtain an Information Booklet for Prospective Tenderers which, while not constituting an invitation to tender nor being part of the Project Brief, provided an introduction to the project and guidance to interested parties who wished to submit proposals to build and operate the facility under a franchise arrangement.

7.2 Topics in the booklet included the following:

The Franchise, Project Scope, Programme, Project Brief, Conforming and Alternative Proposals, Tender Assessment Considerations, Tender Deposit, Tender Period and Guidance for Collection of the Project Brief.

8. Pre-tender Clarification

8.1 During the four months' of the tender period, the two tenderers sought clarification on points of the tender. Where these clarifications were not deemed confidential to the querying tenderer, clarifications were provided to both tenderers. The vast majority of requests for clarification came under this category. Where a tenderer requested a confidential response to a query and the government agreed then the clarification was sent on a confidential basis to the querying tenderer only. Examples in this category were rare and were restricted to issues related to a non-conforming or alternative proposal. Where a tenderer requested a confidential reply and the government considered that the reply should be copied to other tenderers, then the tenderer concerned was informed, prior to clarification, of the government's view regarding confidentiality and was given the option of withdrawing the request.

8.2 Two weeks prior to receipt of tenders by the government, tenderer No. 2 started to get cold feet once it had received details of the construction costs from the Joint Venture of contractors which had been asked to submit a price for designing and constructing the project. As a consequence, tenderer No. 2 made an approach to tenderer No. 1 and a deal was negotiated to join forces. In so doing, tenderer No. 2's Joint Venture contractor was dropped from the proceedings. In fact, the government only received proposals, the obligatory conforming tender plus an alternative tender, from one tenderer for the franchise.

9. Tender Assessment

9.1 Following the receipt of alternative proposals from the single tenderer, the government, led by the Transport Branch, undertook an assessment of the tenders. The assessment was undertaken by three panels, Finance and General, Land and Engineering, and Traffic and Transportation. Members of each panel came from the relevant government policy branches or departments, assisted by the legal and financial consultants where appropriate. The Independent Commission Against Corruption had a watching brief.

9.2 The proposals were assessed on the basis of criteria developed exclusively for the project prior to receipt of tenders. Use was made of the Kepner Tregoe Decision-Making Analysis which is a two-stage process using as a basis predefined "Musts" and "Wants" with a weighting given for each criterion. Final assessments from each of the three panels were then aggregated with previously agreed weightings to establish an overall assessment for the conforming and alternative proposals. An initial assessment was completed following requests by the government for clarification of the proposals by the tenderer. These assessments were updated as the negotiation process progressed and after the tenderer had submitted revised proposals to reflect modifications to the proposals arising from the negotiations.

10. Tender Negotiation and Short-listing

10.1 To a certain extent tender negotiations were constrained by the lack of competition for the franchise. The negotiations involved the government in attempting to gain the best deal from the public's point of view. This included an attempt to reduce the budgeted project costs and minimising toll levels. Limited reductions in both were achieved.

10.2 Once the final assessment had been completed, the Executive Council (ExCo) was asked to endorse the terms negotiated with the tenderer to enable further negotiations to be undertaken on the final terms and conditions to be embodied in the project agreement and draft enabling bill.

11. Franchise Award

11.1 On conclusion of the negotiations on the content of the project agreement and draft enabling bill, ExCo was asked to endorse the award of the franchise to the tenderer on the basis of the final negotiated terms and conditions. Since the WHC franchise would straddle the change of Hong Kong's sovereignty on 1 July 1997, agreement had to be obtained from the PRC through the Joint Liaison Group prior to the bill's difficult passage through the Legislative Council (LegCo).

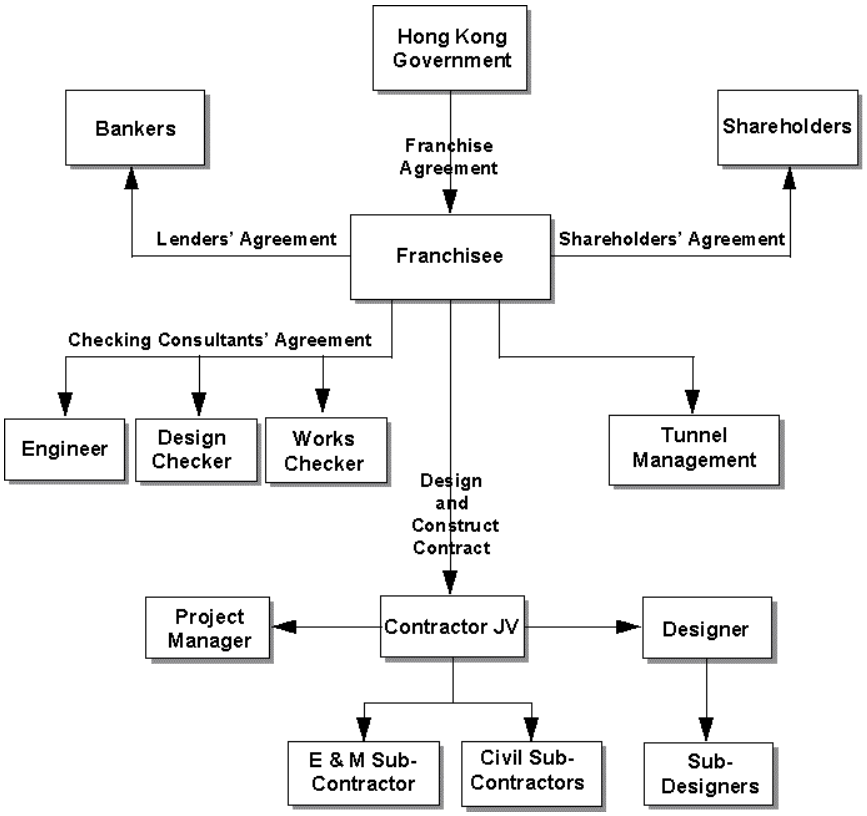
12. Project Agreement

12.1 The parties to the project agreement, which together with the enabling ordinance provides the framework for the franchise to build, operate and ultimately transfer the facility back to the government, are the Secretary for Transport, for and on behalf of the government of Hong Kong (now the Government of the Hong Kong Special Administrative Region) and the franchisee.

12.2 Its contents include sections on the Franchise, the Franchisee, Financing and Taxation, Design, Construction and Completion, Operation, Maintenance, Land, Tolls, and Termination. Appendices cover Budgeted Project Costs, Guarantee Agreements, the Underwritten Offer, Design and Checking Procedure and Change Procedure.

13. Project Organisational Structure and Relationships

13.1 The project organisational structure is as shown in the chart below



14. Land Acquisition

14.1 The tunnel area does not carry a land title. It is operated by the franchisee under a way leave granted by the enabling ordinance which requires the Commissioner for Transport to prepare and deposit in the land registry a plan defining the tunnel or toll area.

14.2 The site for the toll plaza administration building was granted by private treaty grant subject to a full market value premium which is based on the floor area of the building with exclusion of the those areas which the government had agreed may be used for operating and maintaining the tunnel facility.

14.3 The works sites and works areas were made available during the construction period to the franchisee by licence subject to a nominal periodic fee ($1 per annum, if demanded) and upon such terms and conditions as the government required. No property development associated with the franchise was permitted.

14.4 Land resumption and clearance costs were government's responsibility. However, no land resumption *per se* was required for the WHC, although a small number of short term tenancies had to be terminated this was done at no cost. A number of these tenancies were for the provision of temporary lorry parks. Despite termination of the tenancies in accordance with their lease conditions the ultimate clearance of lorries proved to be a confrontational experience with a small number of local politicians getting involved. After much huffing and puffing, clearance was eventually achieved and the franchisee's contractor was not delayed.

15. Construction Period

15.1 Following enactment of the enabling ordinance, the Director of Highways was required to gazette the date of start of construction. This was done following agreement with the franchisee. The ordinance stated the period within which the works must be completed, with the completion date being taken as the operating date.

15.2 A construction period of 48 months was stated for the WHC. The contractor completed the work three months ahead of schedule, so enabling revenue to accrue earlier than anticipated. This was achieved following an agreement on early completion bonuses between the franchisee and the contractor.

15.3 Early completion of the tunnel facility required the completion of supporting road infrastructure. Responsibility for this infrastructure fell upon the government's Public Works Programme. Early completion bonuses are difficult to justify under the government's contract procedures. To overcome this, completion dates for the government contracts were established to allow for a possible early opening of the tunnel facility and a potential overrun of the government contracts.

16. Design and Checking Procedure

16.1 The project agreement required the appointment by the franchisee of independent checking engineers in the form of a design checker and a works checker. These duties were undertaken by a consulting engineering firm who were also employed as the Engineer under the construction contract between the franchisee and the contractor.

16.2 The design checker was required to certify that the designs for temporary and permanent works throughout the project were in accordance with the stipulated criteria, codes of practice, design standards and all directives, and in keeping with sound engineering design practices.

16.3 The works checker was required to ensure that construction was carried out in accordance with the checked and certified design, in accordance with the design and checking procedure, and in accordance with construction standards, directives, specifications and instructions issued for this purpose by the government and pursuant to good construction practice.

16.4 The procedure was in three stages:

i) Design approval-in-principle;
ii) Design development and checking;
iii) Works checking.

17. Toll Increase Mechanism

17.1 The WHC was the fourth road tunnel to be privatised under BOT arrangements. The ordinances for the previous three tunnels provide for the respective franchisee to charge approved tolls. For these three tunnels, i.e., the Cross Harbour Tunnel (CHT), the Eastern Harbour Crossing (EHC) and Tate's Cairn Tunnel (TCT), any increases in tolls are subject to agreement between the Governor-in-Council and the franchisee. Failing agreement either party is at liberty to submit the question of variation of tolls to arbitration under the Arbitration Ordinance. Under their respective ordinances, arbitrators are guided by the need to ensure that the financial return to the franchisee is "reasonably but not excessively remunerative". The government is also at liberty to impose a passage tax.

17.2 Although government imposed a HK$5 passage tax on vehicles using the CHT in 1982, and thereby doubled the toll for a private car, the toll levels imposed by the three franchisees had not increased at any of the three tunnels prior to privatisation of the WHC in 1993, despite numerous applications to government.

17.3 In the writer's opinion, this uncertainty regarding toll increases affected the success of the tendering exercise for the WHC, with one tenderer eventually submitting a tender. However, the single most important change in the terms and

conditions of tunnel franchises was the introduction, during negotiations for the franchise for the WHC, of the toll adjustment mechanism.

17.4 The rationale for the toll adjustment mechanism is to maintain a low and stable toll regime while allowing a degree of certainty for the franchisee over future toll increases. The mechanism does not guarantee the franchisee a level of revenue or a level of return. It is rather a mechanism by which the franchisee has the option to implement toll increases which would, if other assumptions are met, achieve a level of return within specified parameters.

17.5 The basic principles of the mechanism are as follows:

i) Upon award of the franchise, the government and the franchisee agree upon maximum and minimum levels of Estimated Net Revenue for each year (respectively "the Maximum Estimated Net Revenue" and "the Minimum Estimated Net Revenue"), and during the Operating Period a defined number of Anticipated Toll Increases ("ATIs") which fall on a number of specified dates.

ii) Estimated Net Revenue figures are calculated as estimated revenue less estimated interest and estimated operating costs.

iii) The Estimated Net Revenue figures are calculated on the basis that a number of ATIs are required at periodic intervals during the Operating Period.

iv) The government and the franchisee also agree on the amount of each ATI on the Specified Dates in 'money of the day' terms.

17.6 At the end of each operating year, the franchisee submits to government an audited statement of its Actual Net Revenue for that year. Actual Net Revenue is defined as actual revenue less actual interest and actual operating costs.

17.7 Under the mechanism, the franchisee has the option to implement ATIs on the Specified Dates over the life of the franchise, provided that Actual Net Revenue is below the Maximum Estimated Net Revenue for the year prior to the Specified Date.

17.8 As well as ATIs on Specified Dates, the mechanism also allows the franchisee to bring forward an ATI from other years should actual Net Revenue fall below the Minimum Estimated Net Revenue. However, should Actual Net Revenue in any year be in excess of the Maximum Estimated Net Revenue, all excess revenues are paid into a Toll Stability Fund (the "Fund"). Government has the sole right to utilise the Fund to stabilise tolls, either by deferring an ATI due on a Specified Date or when Actual Net Revenue falls below the Minimum Estimated Net Revenue. The government may defer an ATI on a Specified Date by paying to the franchisee the difference between the Actual Net Revenue and the Maximum Estimated Net Revenue for the year concerned. Alternatively, the government

may defer the advancement of an ATI where Actual Net Revenue falls below the Minimum Estimated Net Revenue, by paying to the franchisee the difference between these two amounts.

17.9 It is considered that without this mechanism, government would not have received the three very competitive tenders for the fifth BOT road tunnel, the Route 3 Country Park Section, construction for which is now nearing completion

18. Operations

18.1 The WHC was opened to traffic on 30 April 1997. Since then traffic levels have been substantially less than predicted with current levels being some 30,000 vehicles per day, compared to the design capacity of the tunnel of 135,000 vehicles per day and a crush capacity of some 180,000 vehicles per day, despite the introduction of incentive schemes for motorists by WHC management. It is believed that the reason for the low traffic volumes is the toll differential between the three cross harbour tunnels. For example, current tolls for private cars and taxis are $30:$10:$15 (WHC:CHT:EHT).

18.2 It is anticipated that when the Hong Kong International Airport opens at Chek Lap Kok in July 1998 traffic volumes will increase substantially and should at least double from current levels. To what extent future traffic levels will rise will probably be dictated by the recovery in the economy following the down-turn brought about by the financial turmoil in the Asian region. However, a more significant factor will be the government's intentions with regard to the tolls to be applied at the CHT when its 30 year franchise expires on the 1st September 1999, at which time the facility passes to the government.

A CASE STUDY OF EAST CAMBRIDGE:

URBAN REGENERATION THROUGH COORDINATED PUBLIC AND PRIVATE INVESTMENT

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A CASE STUDY OF EAST CAMBRIDGE: URBAN REGENERATION THROUGH COORDINATED PUBLIC AND PRIVATE INVESTMENT

A. Summary

Case Study – A City was able to redevelop 25 hectares of urban "brown fields" by coordinating infrastructure improvements with a commitment by private developers. With a $50 million public investment, nearly $1 billion of private development has been invested to date in East Cambridge. In the twelve years since project completion, the return on investment is now 6,000 new permanent jobs for the City and an estimated $16 million per year in new local revenue. This represents one example of a creative public and private partnership in sustainable urban reinvestment and infrastructure improvements.

B. Initial Steps in the City's Planning Process

1. The City adopted a Planned Unit Development (PUD) District covering 25 hectares of urban "brown fields" in an underdeveloped area of multiple small holdings, where ownership was considered too complicated to assemble new development parcels and the "slum" appearance made the area too risky for conventional private investment.

2. The PUD objective was to make the area attractive for private investment, while also involving residents and owners of larger parcels of land in a consensus plan for area development.

3. Federal, State and Local Funding sources were identified that would eventually fund a $50 million public investment in new infrastructure.

4. A process was identified whereby private developers would commit to investing in the area as soon as the City began its public improvements program.

5. Upon commencement of public improvements, banks fulfilled loan commitments to selected developers in the area for the first time.

C. Private Developer Competition and the Tendering and Selection Procedure

1. A 'Formal Request for Proposals to Developers' was prepared, with a detailed description of the City's infrastructure commitments and developer obligations for public enhancements.

2. The preliminary (short-list) selection process was a transparent process, based on compliance with plan objectives, approach to the market and prior experience.

3. The second stage competition involved intensive design and financial analysis with selection informed by the local community and the City's urban design consultant.

4. Final selection of developer and architect teams led to a contract between the City and the investors obligating the start of development upon commencement of the City's own public infrastructure commitments.

C. Land Assembly Prior to Redevelopment

1. Land designated for Developer Competition was first acquired by the newly established State Land Bank and thereby held out of speculative development until the conclusion of the Development Competition and after developer commitments were in place.

2. At the point of commitment, developers were able to purchase the land at reasonable cost in exchange for developing it in compliance with the City's Redevelopment Plan.

3. Land retained by the large-parcel private owners was incorporated into the planning by using Planned Unit Development zoning powers to force compliance with the City's Redevelopment Plan.

4. Large-parcel private owners also made commitments with the City to carry out new development, according to the development plan, in exchange for the City's infrastructure program which would significantly increase the value of their land holdings.

E. Factors that Helped to Ensure a "Sustainable" Development

1. Good timing with the market: increasing demand for regional shopping and high density housing close to downtown Boston and the absence of other large sites for development in the area.

2. Availability of public funding sources for redevelopment of old urban areas.

3. The ability of the City to be demanding of developers by offering a valuable commodity at a time when market forces were most favorable.

4. The willingness of local developers to be innovative, building the first in-town regional mall and the first regional mall with all-underground parking and access to nearby rapid transit.

5. A transparent and focused tendering and selection process that helped to insure a successful outcome.

F. Update on the Status of this Project, 20 Years after the Redevelopment Plan was Adopted

1. Over the last 20 years, the Plan and the built project have received many awards for urban design, landscape architecture and urban planning.

2. The area has succeeded in economic terms, exceeding the projections of the 1978 Plan from a planned 300,000 square feet of retail space to the currently built 750,000 square feet.

3. Private development was planned to create 4,000 new permanent jobs for the City. Currently the project has more than 10,000 new jobs.

4. Annual direct tax revenues from this project used to be $1 million per year. Today, it is estimated that new development produces in excess of $16 million.

CAPACITY BUILDING FOR SUSTAINABLE URBAN DEVELOPMENT: CONCEPTUAL FRAMEWORK

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CAPACITY BUILDING FOR SUSTAINABLE URBAN DEVELOPMENT: CONCEPTUAL FRAMEWORK

1. Sustainable Cities in the APEC Region

In June 1997, Canada presented a paper entitled "*Towards Guidelines for Investing in Sustainable Cities in the APEC Region*" at the Asia-Pacific Economic Cooperation Environment Meeting on Sustainable Development in Toronto, Canada. The paper noted, *inter alia*:

> Facing intense pressure of current and future growth, cities and governments around the APEC region are seeking new approaches to infrastructure and building projects. They are also seeking guidelines and best practices to guide decision-makers in planning, initiating and managing such projects in the public interest.
>
> Local governments will need to play a much larger role and to develop and exercise the necessary authority and capacity to guide investment in the future. Clear regulatory frameworks will be required (..) to provide the context for efficient, equitable, functional and sustainable infrastructure development.
>
> New urban solutions require integration of all relevant disciplines, the most advanced knowledge available and immense ingenuity. In many cases, solutions will involve community-based combinations of new and existing approaches to result in affordable, practical and appropriate results.
>
> People in all Asia-Pacific economies have much to learn from each other, and no economy has yet achieved sustainable cities.

These observations form the point of departure for a proposal to build the capacity of local governments and other actors and to develop new solutions to pressing urban problems by learning from each other's experiences and practices.

2. Re-inventing Local Government for Sustainable Cities

In today's world, the management of cities and towns can no longer be the responsibility of local governments alone, but clearly requires the active involvement of all urban actors (public sector, private sector, communities, civic organisations) and the redistribution and re-alignment of roles and responsibilities between these actors. It is

also clear that many of the actors are not ready for these new roles and responsibilities and that a major capacity building effort is required.

While it is necessary to enhance the capacity of all the urban actors, capacity building of local government has the highest priority, because its role is essential to protect the public interest, the environment, and the disadvantaged in urban areas, and because it threatens to become the weakest of the actors on the urban scene. Local government faces four broad challenges:

- **New and more complex urban conditions**

  Local government has to operate under conditions which are fundamentally different from the ones of the past. There is a rapid increase of populations in cities and secondary towns in the Asia-Pacific region and soon the majority of the region's population will live in urban areas. The need for infrastructure to improve the quality of life in urban areas will be enormous, but funding for the development of that infrastructure will have to come from the global capital market. Cities and towns around the world will compete with each other for a share of international capital investments and local governments will have to collaborate intensively with the private sector and civil society to make the city or town attractive to international capital. At the same time, however, they will have to protect the urban environment, keep the city liveable for local residents and reduce urban poverty.

- **The assumption of new roles and responsibilities**

  As the nation-state sees its role diminishing under the forces of economic globalisation, a new form of "city-state" is emerging. Roles and responsibilities which in most countries traditionally have been handled by central government are now being handed over to local governments, because of the need for faster and more focused responses to local needs and demands. The devolution of authority is often a last resort for central governments faced with problems they can no longer solve, and is often not accompanied by a decentralisation of resources or a devolution of authority to raise local revenue. As market deregulation progresses, the traditional roles of the (local) government are eroded and the private sector increases its involvement in urban service delivery. Local governments have to learn to live with this situation by abandoning *rowing* (i.e., service delivery) functions and by concentrating on *steering* (i.e., policy-making) functions. Local governments need to develop alliances or new forms of partnership with the private sector and civil society to ensure that the necessary services are delivered and the public interest is protected. This requires a new attitude and culture in the public sector as well as new urban management tools and techniques.

- **The management of mega-cities**

  While most cities and towns will experience rapid population growth, the next century will see the emergence of more and more mega-cities each with a population exceeding 8 million (equivalent to the population of many small countries). A majority of these mega-cities will be located in the Asia-Pacific region. For local

governments, the management of mega-cities will be a completely uncharted territory, in particular since the environment of mega-cities will be extremely vulnerable due to high population and industrial densities and the poverty of large portions of the population. The need to provide water to such enormous populations and industrial concentrations will increase the competition for this resource between the mega-cities and their rural hinterland. The need to move large numbers of people between home and work will require efficient public and private transport systems which are attractive to the middle-class, affordable to the poor and safe for the environment.

- **A more effective and efficient performance**

  Over the past years, local government has lost much of its credibility in the eyes of the general public as the manager of urban development. As a result, the population is increasingly turning towards the private sector for services, and voting against or avoiding the payment of taxes. The consequent reduction in resources for urban management comes at a time when the extent of urban poverty and environmental degradation is increasing. The inability of local urban government to address these problems further erodes the credibility of local government. At the same time, the population will become increasingly vocal and increase pressure on local government to make sure that the necessary basic services are provided. Investors will also closely examine the condition and efficiency of urban systems, both for service delivery and governance, while making decisions on location of facilities. In order to regain its credibility as the elected representative of the people and the protector of the public interest, local government has to become more effective and efficient in its activities, more transparent in its decision-making and more accountable for its actions.

Given these challenges, a new form of government is clearly necessary. However, most local governments lack the ability to adjust themselves to the new circumstances and to assume new roles and responsibilities. Most local governments do not have the opportunity to reflect on ways to perform more effectively and efficiently, since they are overburdened by day-to-day tasks. Moreover, the rapid development of globalisation and privatisation is placing local government in a totally new position, for which there are no easy answers and few successful experiences to show local governments how to handle this situation. Due to a lack of guiding principles, some local governments have simply started to experiment with new approaches and new technologies in the hope of discovering effective solutions; some have been successful.

However, thousands of other local governments are given new roles and responsibilities for which they do not have:

- The human resources with the necessary knowledge, skills and attitudes
- The required organisational set-up and culture which provides flexibility and rewards innovation, and
- The institutional arrangements which facilitate collaboration and division of labour with other public and private institutions.

The situation, therefore, poses an enormous challenge not only to local governments themselves but also to capacity building institutions such as education, training and research institutions, and advisory and consultancy organisations. The challenge is particularly daunting because of the magnitude of the task. Devolution of authority from the central to the local level is a process occurring all over the world, affecting the local governments of mega-cities as well as thousands of other cities and towns in the Asia-Pacific region.

3. Capacity Building for a Re-invented Local Government

The Second United Nations Conference on Human Settlements (Habitat II) in Istanbul in June 1996 recognised the enormous challenge faced by local governments around the world, and the Habitat Agenda adopted at the conference stresses the urgent need for capacity building of local governments to develop sustainable cities. Many programmes launched during the preparations for the Istanbul Conference, or highlighted at the Conference, focused on the improvement of the quality of life in urban areas. Among them two programmes, executed by the United Nations Centre for Human Settlements (Habitat) in Nairobi, could serve as examples of a capacity building approach: the Urban Management Programme and the Best Practices Initiative. Both are implemented in the Asia-Pacific region in close collaboration with the Urban Management Centre of the Asian Institute of Technology (AIT).

The Urban Management Programme (UMP) is a long-term global technical cooperation programme designed to strengthen the contribution that cities and towns in developing countries make toward economic growth, social development, the reduction of poverty and the improvement of environmental quality. The UMP promotes coherent urban policies, strengthens urban management and enhances the provision of municipal services by harnessing the skills and strategies of regional networks of experts, government personnel, communities and organisations in the private sector. It relies on two mutually supportive processes to facilitate capacity building: city consultations and regional networks of experts. At the 1996 Istanbul conference, the Urban Management Programme entered its third phase, which emphasises capacity building in urban environmental management, urban poverty alleviation and participatory urban governance.

The Best Practices Initiative is a capacity building and networking programme, which encourages cities and communities to identify and submit good practices in improving the living environment through an award-winning process. Submissions, which meet the criteria of a Best Practice, are considered for an award and for inclusion in the Best Practices database. This database enables users to identify successful practices and to access the key contact persons and institutions directly involved in their implementation. The Best Practices Initiative is a networking tool for the exchange of knowledge at the local, national and international level and for the application of expertise and experience to training, leadership in development and capacity building. For the Istanbul conference, governments, non-governmental organisations and private persons submitted more than 600 practices of which 12 received an international award. Many of these practices have been made available on CD-ROM as well as on the Internet. A new round of submissions was launched in October 1997 and the "best" Best Practices will be announced in October 1998.

Both the Urban Management Programme and the Best Practices Initiative aim at capacity building for urban management. The Urban Management Programme does so primarily by advising and assisting selected local governments in the improvement of their performance by providing strategic technical expertise and by assisting local governments to mobilise funding for larger projects. The Best Practices Initiative identifies, documents and disseminates good experiences by partnerships of urban actors in the improvement of the living environment. While these programmes contribute to urban capacity building, they focus on some components of capacity building only: capacity building requires a far more comprehensive approach.

Most educators and trainers are aware that capacity building is more than education and training. They recognise that when the young professionals they have educated and trained join or return to a local government to work, they face many problems applying the knowledge and skills they have learned. The agency or department where they work is often not geared towards their new knowledge, new skills and new attitudes; it lacks the new equipment and does not allow the new recruits to introduce new methods and techniques. Similarly, consultants and international experts hired to advise and assist in organisational and institutional development recognise that they rarely have the time (and the skills) to adequately train the local staff, or to ensure that staff is trained elsewhere and subsequently integrated into the organisation.

Capacity building requires the integration of training and education with organisational and institutional development, and collaboration between training and education institutions and technical cooperation programmes and consultancy companies. Understanding of the need for such a comprehensive approach is growing among international aid agencies, which are no longer interested in supporting training and education in isolation, but want to make sure that the education and training is in support of their organisational and institutional development projects and programmes. Education and training institutions will need to become more flexible, able to adjust their curricula to the ever changing needs of their clients. Similarly, aid agencies include education and, in particular, short-term training, in their organisational and institutional development programmes to ensure that the staff of local governments (and other organisations) acquire the necessary knowledge, skills and attitudes to support and sustain the impacts of the aid programme.

In brief, capacity building includes organisational development, institutional development, and the development of a new organisational culture, as well as human resource development which addresses the individual person, imparts knowledge and skills, and transfers new attitudes. Capacity building is a comprehensive approach, which addresses both the person and the organisation. To be effective, capacity building requires that the education and training institutes target the entire staff of an organisation. In order to make the education and training of middle-level professional staff meaningful and effective, it will be necessary to involve the management and decision-makers of the organisation and create an understanding of the new approaches in which their middle-level staff are "trained". This could be done through high-level policy seminars where managers and policy-makers can review and discuss the latest approaches and technologies.

Since the situation in which local governments will be operating is completely new, there are no ready-made theories of knowledge. It will be necessary for education, training and research institutes to expand their research into the new areas of urban management and re-invented government. In order to make an impact, it is necessary to build the capacity of all types of capacity building institutions, including teaching staff, curricula, teaching material and teaching tools. It will be necessary to collect, analyse, document and exchange the experiences of local governments with new practices, whether they were successful or not. It will be necessary to join the knowledge and experience of educators and practitioners and to join the knowledge and experience of the public and private sectors. And it will be necessary to make full use of new communication and information technologies.

4. Building the Capacity of Capacity Building Institutions

The proposed capacity building programme is positioned "downstream" from programmes such as the Urban Management Programme and the Best Practices Initiative. While both these United Nations programmes contribute to capacity building of local governments (and other organisations), their link with education and training institutes is weak. The programmes identify and test innovative approaches in urban management, but they do not feed the lessons learned from "Best Practices" and "City Consultations" into the curriculum of capacity building institutions to ensure that the organisational and institutional development of local governments is supported by newly trained professionals with the appropriate knowledge, skills and attitudes.

5. A Collaborative Programme

In order to promote sustainable cities in the new global situation, it is necessary to be constantly "on the look out" for innovation in urban planning and management. These innovative approaches or experiences then need to be developed in the form of comprehensive capacity building modules, which requires expertise in the substance of the module as well as in the formatting and packaging.

a. Developing a Toolkit of Urban Management Instruments (UMI*)*

In many cities and towns of APEC member economies, governments (as well as non-governmental organisations and private companies) are experimenting with new approaches and applying new methods and techniques to solve urban problems. Some experiments are successful, others do not fully meet the original expectations or fail completely. The initiating organisation draws lessons from its experience and improves and adjusts its approach next time around. However, few of these experiences are properly documented, many that are documented are not widely disseminated, and some of those that are disseminated have not been adequately analysed and described to allow others to draw concrete lessons from them.

In the proposed capacity building initiative, education, training and research institutes identify good and bad approaches, alone or in collaboration with local

governments, non-governmental organisations, or the private sector in their city or economy. The institutions study, analyse and document the practices to draw lessons from them. Similar practices might exist in different economies. It is essential that experiences of similar practices in different economies be compared, consolidated and documented according to an agreed-upon format.

b. Assessing the UMI Toolkit

The APEC economies are at different stages of development and have different systems of urban government. While the concerns or problems faced in shaping cities to be sustainable are similar, the application of solutions or good practices of urban management is not a straightforward matter. Relevance, supporting environment, and adaptability issues of a good practice need to be discussed and assessed before its adoption. The urban management instruments identified in the toolkit are made available for intensive discussion using the Internet. The discussion is in a structured format allowing for methodology discussion, questions, and recommendations. The participants of this virtual conference include the institutions submitting the practice and other participating institutions. The discussion is moderated to the extent that the moderator keeps it on track, helps summarise issues, and keeps records. There is no subject matter moderation.

c. Capacity Building Module

Once the Urban Management Instruments have been subjected to discussion and analysis on the Internet by all participating institutions a capacity building module is developed. This is done in conjunction with the submitting institutions and includes the outputs of the Internet discussion.

The capacity building module includes material in a hard copy format and on CD-ROM. It might consist of a general description of the approach, background material, and possible field exercises. The general description of the approach should include the problem addressed, the key principles of the approach, the strengths and weaknesses of the approach, the necessary inputs, the steps to be taken to implement the approach, the conditions (including information) required, possible problems encountered during implementation and the expected outcome.

The background material could include case studies of the application of the approach, diagrams, maps, a glossary, references to literature, addresses of organisations which have applied the approach and experts knowledgeable of the approach, and audio-visual material. Field exercises should include a stakeholder analysis for the approach, and an analysis of information required and available for these urban management instruments. Delivery of the capacity building material should also contain handouts and overhead transparencies, maps, photographs and, if possible, video.

The capacity building module should be made available to all participating institutions.

d. Capacity Building at the National and Local Level

The participating institution can use the capacity building module in its academic and training programmes to train their own staff and students as well as local government staff, and non-governmental organisation and private sector personnel.

A major problem of any prepared training and educational material has been that the trainer/facilitator is expected to use the material exactly as the developer of the material had envisaged. However, each trainer or facilitator has his/her own way of using the material and consequently a good understanding of the material and discussion on different approaches to use in its delivery is necessary. The tool kit of urban management instruments provides the methods and techniques, but the understanding and the attitudinal change which is essential to the success of these instruments needs to be done at face-to-face events. Therefore, before the practices are disseminated to the participating institutions for use in training and education a face-to-face event should be organised for the participating institutions so that they can understand and discuss the attitudinal transfers that need to accompany these urban management instruments.

The participating institutions can disseminate the urban management instruments packaged as the capacity building module at the national level. It may be necessary for the participating institutions develop a national level network both for this purpose and also to ascertain the need for translation of the module into local languages for wider dissemination at the local level.

e. Virtual Policy Studios

This proposal also takes the dissemination process a step further by introducing a second phase of Internet-based structure workshops, Virtual Policy Studios (VPS). These are distinct from the first phase in that they focus not on *module development* but on *implementation and local adaptation* of the urban management instrument. Very often skills and techniques learnt by local government officials at training programmes cannot be translated into actions because of existing institutional arrangements or attitudes. Also the best of training packages at times do not provide answers to practical issues arising in a real situation. To maximise the chance of successful innovations adoption, local staff need a platform where they can share their experiences or seek advice and feedback on organisational, institutional and personnel consequences of implementing a practice

The Virtual Policy Studio (VPS) is therefore an Internet-based workshop on the capacity building module. The VPS brings together local government staff and officials from different levels in organisations, international experts and participating institutions with a moderator. The VPS supports the skill transfer objectives of the capacity building module, but is principally focussed on assessing and providing inputs into the implementation and the required

environment for those skills to be translated as effective action towards sustainable cities. The objectives of the VPS are:

- To foster deeper understanding of the module material
- To reflect on and discuss with others matters of local implementation, constraints and opportunities
- To engage in collaborative problem solving (within and between agencies) on implementation issues
- To provide an on-line record of experiences that is guaranteed to keep the module material current and relevant.

A typical VPS comprises of:

- Participants drawn from active urban management roles in selected cities by participating institutions;
- Participating institutions;
- A workshop facilitator;
- International experts;
- A virtual studio divided into three *rooms* with interactive graphic representations of each of the above.

An important strength of the VPS device is that it creates an active and structured innovating network of urban managers within and between agencies. Changing an institutional/professional culture requires a critical mass of innovators within the institution. To this end, a VPS will enrol groups of key personnel from the same agency. To achieve the benefits of inter-agency networking, a VPS will comprise several such groups drawn from selected agencies/cities.

A VPS might run for two or more weeks, drawing together participants from the above group. Participants might be expected to gain authorisation from their agencies to commit a proportion of their time to the workshop for the two weeks and to organise personal access to a multi-media WWW terminal. The VPS might be divided into three (virtual) *rooms*:

- Learning resources room
- Problem-solving room
- Networking room

Participants might spend the first week in the learning resources room, and move to the problem-solving and the networking rooms in the second week.

The *learning resources room* presents key elements of the capacity building module, related analytical ideas, and builds up a knowledge base of the implementation experience of the urban management instrument introduced in the capacity building module. This sets a common language of discourse. The aim of time spent here is a broadening of participants' views of the practice as put forward in the capacity building module; a reflection on the implementation experiences of others; and a consideration of constraints and opportunities in

their local context. After completing this part of the VPS participants will be asked to prepare a statement of the key advancements they feel they have made in their understanding of the VPS topic. They will be given permanent access to the learning resources room, which they will be encouraged to use and adapt as their own personal continuing professional development resource.

The *problem-solving room* is designed to help participants tackle real-world problems implementation. Each participant will have submitted their experience or anticipated problems in using or implementing the instrument in the capacity building module in the form of a statement to the facilitator prior to the VPS. From these a set of structured discussions will be organised aimed at problem analysis and policy-formulation. The facilitator will manage the discussions and invite the views of experts, from remote sites where appropriate, who appear as invited visitors to the room. Participants will be encouraged to draw on principles, perspectives and practices emerging from the learning resources room. The overall aim is to create a virtual space that encourages at the implementation stage, brainstorming, lateral thinking and frank and creative reflection on the capacity building instrument and on related management issues.

The *networking room* is designed to encourage ongoing discussion between participants. It will 'host' a newsgroup relating to the topic of the VPS and will contain links to related Internet resources. One of the participating institutions will be asked to manage the room and its development beyond the VPS.

Participants will be asked to evaluate the benefits of the exercise at the end of the formal VPS.

6. Framework of the Collaborative Programme

The identification of suitable urban management instruments/interventions for capacity building modules, the identification of good (and bad) applications of these instruments, the development of the capacity building modules, and the testing of the modules requires a network of capacity building institutions. It seems that the loose organisational form of APEC and the existing relations between institutions in APEC member economies is a suitable and efficient arrangement for the development of capacity building modules. Also the SDTIN network and the APEC study centres consortium have some experience in capacity building which should be incorporated.

Once a generic format has been developed, institutions in each APEC member economy can start identifying urban management instruments in development planning and management, and study, analyse, and document such instruments to feed into developing capacity building modules. The network of institutions needs to operate at a regional level but at the same time participating institutions also need to develop national networks to take the capacity building initiative to the local level.

It will be necessary to monitor the application of the capacity building modules, to review their usability, and to adjust the contents or the format or both to new insights gained either during their use or as a result of new insight from 'the field'.

APPENDIX A: AREAS FOR CAPACITY BUILDING

Local governments face numerous problems in the planning and management of their cities. Many of these problems are similar for cities and towns all over the world. Many local governments are experimenting with new approaches whose lessons are worth studying and disseminating. Possible topics for capacity building with relevance for many local governments are described below.

Urban planning and management

Multi-sectoral investment planning

Urban planning often has produced plans that are too ambitious or too prescriptive, or that fail to take into account users' willingness to pay for public facilities. As a result, there is a history of unrealised plans–not just project designs that are never built, but basic frameworks that are never taken seriously by real-life investors, whether in the public or private sector.

Multi-sectoral investment planning (MSIP) is a process for setting investment priorities. It has its roots in the physical planning traditions of master plans and in the budgeting tradition of the annual operating and capital budgets. Its product is a multi-year capital plan, showing what investments will take place across sectors, how this investment will be financed, and the repercussions of investments on the operating and maintenance budgets of local public agencies. When the multi-sectoral investment planning process is taken seriously, and the resource constraints are acknowledged realistically, the resulting plan provides a framework both for public sector decisions and for private sector investment.

Public finance

One of the major problems faced by local governments is the lack of financial resources to undertake the immense urban management tasks. The traditional method of funding local government activities, the transfer of funds from the central to the local government, is not only inadequate in view of the enormous needs of the city and the urban population, it is also diminishing in importance due to the shortage of funds at central government level.

One of the more innovative forms of revenue generation by local government is the issuing of municipal bonds. The experience of Ahmedabad, India, with municipal bonds is being closely followed by other municipalities, which are eager to know whether this method would also suit their needs. However, municipal bonds place new responsibilities on a

municipality: a credit rating for the municipality is necessary and this means that a municipality has to perform in a way which satisfies the credit-rating agency and builds confidence with investors.

Sustainable infrastructure

Over the next decades, the Asia-Pacific region will experience disproportionate growth in population and industrial and economic activity, with associated environmental effects, both local and global. Governments in the Asia-Pacific region will invest billion of US dollars in urban infrastructure developments to improve the quality of life in the cities, to make cities attractive for foreign investors and to protect the urban environment. Therefore, the region should be a focus for applying sustainable solutions so that development benefits can occur without disastrous consequences for urban dwellers, global eco-systems or natural resources.

The introduction of sustainable or "green" infrastructure is therefore of utmost importance. Green infrastructure and buildings are those which fit best with natural eco-systems through pro-active design, site selection and life-cycle management. They conserve energy and materials, and limit waste during construction and renovation. They prevent pollution and save energy, water and materials in on-going operations. They use environmentally responsible products and services, and reduce future risks to health, the environment and social equity.

Privatisation

Privatisation can be defined as a non-government role in the production or provision of services. In practice, privatisation represents a continuum from purely private production through a range of forms of public/private co-operation. At its broadest extreme, privatisation is direct private sector production and delivery of services with little if any public involvement. At the other extreme is private production of a small intermediate step in the delivery of a larger service.

While more and more governments are privatising activities which were traditionally seen as the responsibility of the government, many local governments do not have adequate insights into the different forms of privatisation and the advantages and disadvantages of the each of these forms. Privatised services require two types of regulations: regulations to ensure the quality of privately produced services in terms of reliability and output, and regulations to emulate competition if a private firm is granted a monopoly franchise. However, regulations should be restricted to the minimum necessary to provide for safe use of services by consumers and must be carefully evaluated to eliminate those that inhibit competition or bias service delivery towards the public sector

Entrepreneurial government

In order to make government, including local government, operate more effectively and efficiently, the *Re-invention of Government* approach recommends separating the four functions of government: policy-making, regulation, compliance, and service-delivery. Governments should concentrate on the steering function (i.e., policy-making) and

ensure equal treatment of citizens (regulation and compliance), but make the private sector responsible for service delivery. Through bidding and performance contracts, the government can make private companies provide services effectively and efficiently.

However, even within government, the operation of departments can be made more effective and efficient. The authors of *Banishing Bureaucracy* recommend five C-strategies: the Core strategy (focus on the core activities), the Consequence strategy (organisations and employees should face the consequences of their actions), the Customer strategy (let the ultimate customer of the activity judge the quality of the action), the Control strategy (decentralise decision-making to the lowest level), and the Culture strategy (change the attitudes of the government staff involved).

Community management

Community Action Planning

Improvement of the physical and socio-economic conditions in urban low-income settlements is one of the important components of urban poverty alleviation. Experience over many years has shown that such improvements require the close involvement of the population concerned, in particular in planning and decision-making; in fact, the community should plan and manage the improvements with external agencies, whether government or non-governmental organisations acting as facilitators and enablers. While community participation and community management are now generally accepted concepts, community management and participation in planning and decision-making is often more token than real.

The Urban Housing Division of the National Housing Development Authority (NHDA) of Sri Lanka developed an action planning methodology to make low-income urban communities responsible for the planning and implementation of physical and socio-economic improvement projects, with the NHDA as the facilitating agency. Community action planning is based on the action planning approach and is centred around one or more workshops in which planners from the government agency and representatives of the community follow a procedure which involves: the identification of problems within the community; analysis of the causes of those problems; remedial actions taken so far and their impact; possible solutions for the problem, selection of actions to solve the problem, resources required to implement the selected solution; contribution of resources by different stakeholders; formulation of a detailed action plan; information dissemination to all concerned and affected; implementation of the plan by the community, the government agency and other stakeholders; and finally, evaluation of the results.

Savings and credit schemes

One of the principal problems faced by low-income households and small-scale enterprises is their lack of working capital and their inability to obtain credit from formal financial institutions. The lack of access to formal capital not only prevents the household or small-scale enterprise from improving its conditions, but it may even

increase its poverty, as it may become dependent on money-lenders who charge exorbitant interest rates.

The increased emphasis on private-sector initiatives has also led to a reassessment of savings and credit schemes, and micro-credit programmes. The Best Practices Initiative of the United Nations Centre for Human Settlements in Istanbul awarded the SEWA Bank and drew attention to other similar initiatives. Savings and credit schemes in low-income communities have their roots in traditional credit operations in urban and rural areas. They start with a small number of participants, often women, who know and trust each other well, and they save small amounts of money on a regular basis. One or more participants at a time benefit from a loan drawn from the pool of money.

The savings and credit schemes does not only provide low-income earners with the necessary credit to improve their living conditions, invest in their small-scale enterprise, or pay for emergency expenditure. It also teaches the participants the importance of disciplined savings, it creates solidarity among the members, and it prepares the group for participation in the larger economy.

TRAINING PROGRAM DESIGN: INFRASTRUCTURE MANAGEMENT AND URBAN REGENERATION

Prepared by

Alven Lam
Lincoln Institute of Land Policy
Cambridge, Massachusetts
United States of America

TRAINING PROGRAM DESIGN: INFRASTRUCTURE MANAGEMENT AND URBAN REGENERATION

1. The Need for Training

The World Bank estimates that Asia will need a $2 trillion investment in infrastructure between 1995 and 2004. This investment represents enormous use of scarce resources and has a significant impact of the form and quality of urban life.

2. Curriculum Development

- Economics of infrastructure investment
- Impact of investment on urban environments
- Alternative mechanisms for financing the investments
- Project evaluation and risk analysis
- Management of projects on time and within budget
- Negotiation techniques for public and private partnership

3. Student Recruitment

- Senior policy makers
- Senior management officials
- Mid-level management
- Private corporations

4. Faculty Structure

- Economics, local government finance
- Project management, infrastructure engineering
- Urban planning, negotiation
- Environment

5. Training Facilitators

- APEC Multilateral Training Centers–similar to OECD Tax Centers
- Economy Training Programs–each economy sets strategies
- Mobile workshops–travel in different regions

6. Training Strategies

- Initiating APEC training policies and strategies
- Allocating resources
- Funding curriculum development
- Building up faculty data bank
- Recruiting trainees
- Conducting pilot training programs
- Establishing regular training programs
- Reviewing program performance

7. Recommendations

- Forming an APEC Training Center
- Working with experienced training facilities in the region
- Conducting pilot training programs
- Developing long term regular programs
- Research on teaching materials and case studies

INFRASTRUCTURE PLANNING AND URBAN DEVELOPMENT

A TRAINING PROGRAM PROPOSAL

Course Objectives

Over $200 billion are spent each year for new infrastructure in developing countries. The World Bank estimates that Asia will need $2 trillion investment in infrastructure between 1995 and 2004. This investment represents enormous use of scarce resources and has a big impact of the form and quality of urban life. It is the purpose of this course to prepare students with the basic tools to analyze the economics of infrastructure investment, to understand the impact of investment on urban environments, to develop alternative mechanisms for financing the investments, and to manage the process that is necessary to get the projects done on time and within budget.

Possible Course Dates: TBA

Course Length: 5-6 weeks; or 1-2 weeks for each module

There are 60 sessions listed in the course outline below. With case studies and local faculty guest lectures, we may need another 10-20 sessions. A total of 80 sessions will take 20 days, or five weeks to complete. With a one week field trip, the total course length could be six weeks.

Faculty: Lincoln Institute of Land Policy
Harvard Kennedy School of Government
Harvard Institute of International Development

Students: Mid-level government officials who develop programs, evaluate projects, analyze policies, and implement projects. Senior officials and policy makers should be encouraged to attend. Maximum capacity is 35.

COURSE OUTLINE

Module I The Urbanization Process (10 sessions)

A. Land Market and Spatial Economics
B. Infrastructure Investment and Urbanization and Competitiveness
C. Regulation of Development
D. Cases: Land Market; Economic Impacts; Regulatory Framework

In this part of the course we can focus on basic urbanization and land management issues through land market lectures and cases. Infrastructure economics will be brought in after the land issue discussions.

Students will learn:

- Trends in and patterns of urbanization: How will spatial structure change in the future?
- Economics of land use: How is value affected by regulations and infrastructure?
- Market fundamentals: Property rights, formal and informal markets
- Infrastructure economics in the urbanization process and new demand
- Macroeconomics, productivity (Aschauer and Munnell materials)
- 'Crowding-out' or supplementary effects between public and private funds
- Regional development and infrastructure
- Policy tools to regulate land development and spatial plan
- Also discussion on the conflicts between regulatory tools and revenue tools

Module II Analyzing Infrastructure Investments (20 sessions)

A. Estimating and Organizing Infrastructure Expenses and Revenues
B. Assessing Risk.
C. Estimating Benefits and Costs
D. Cases: Risk and Cost/Benefit Analysis, Risk Assessment

This part will focus on the analyses of project cost structures and revenue predictions. Risk factors will be an essential part for final assessment of the investment.

Both B (Risk Analysis) and C (Cost/Benefit Analysis) involve very tool-oriented teaching. Methodological discussions, cases, and class discussions will be extremely helpful for students. Besides teaching the "how-to" on the technical analyses, we should also teach students how to review consultant reports on Risk Analysis and Cost/Benefit Analysis.

Module III Pricing and Financing Investment (20 sessions)

A. Value Capture
B. Pricing Alternatives
C. Financing Mechanisms
D. Privatization
E. Cases: Revenue Tools, Other Tools (Fees, Charges, Negotiations, and BOT examples)

There is plenty of material for this part of the course. What is most discussed now in Asia is the concept of Build-Operate-and-Transfer (BOT). As part of a privatization program, BOT requires tremendous efforts to bring in private capital (stocks, bonds, and other liquid securities) for long term investment. Consequently, the financial agreement (between the government and private investors) and government bureaucracy (taxation, foreign exchange, and other conditions) will play an important role in the process.

Alternative financing tools such as impact fees, development charges, exactions, and other similar techniques will be discussed in detail. Impact fees, for example, may merit a whole session to cover the legal context, mathematical formulas, and administrative challenges, etc. Other financial mechanisms such as municipal bonds, revolving funds, etc., should also be introduced.

Module IV Managing Infrastructure Projects (10 sessions)

A. Project Planning
B. Pert Chart
C. Project Appraisal
D. Cases: Successful cases in prosperous areas and poor neighborhoods

In this part of the course, as well as earlier we will have computers set up to run class exercises. Two students can share a computer. Based on a recent survey, 1/3 of the participants will have never worked on computers before and there will be 1/3 who are quite comfortable with computers. Teaching assistance will be needed for the exercises.

INFRASTRUCTURE PARTNERSHIP FOR DEVELOPING SUSTAINABLE CITIES AND THE RURAL ECONOMY

SUSTAINABLE INFRASTRUCTURE DEVELOPMENT: THE ROLE OF ENVIRONMENTAL MANAGEMENT SYSTEMS AND GREENING INITIATIVES WITHIN THE PUBLIC SECTOR

Prepared by

Jean Bilodeau
Director General, Environment Canada
Canada

SUSTAINABLE INFRASTRUCTURE DEVLELOPMENT: THE ROLE OF ENVIRONMENTAL MANAGEMENT SYSTEMS AND GREENING INITIATIVES WITHIN THE PUBLIC SECTOR

The focus of this presentation will be to describe two specific initiatives undertaken by the Government of Canada to improve the environmental performance of its buildings and infrastructure. The presentation also outlines how Environmental Management Systems (EMS) can be used by both the public and private sector as an effective decision – making tool to contribute to the goal of sustainable cities.

During the decades to come, APEC member economies will continue to face important challenges stemming from factors such as budgetary restrictions, accelerated population growth, globalization, technological innovation and economic and political restructuring. In this context, it will be increasingly important to incorporate environmental and sustainable development considerations into the decision-making process to transform these challenges into opportunities. Public-private sector partnerships will be key in advancing the vision of sustainable infrastructure and in improving the overall economic, environmental and social health of Asia-Pacific communities.

Canada is committed to the vision of sustainable development. As one part of this broad vision, Canadian departments are undertaking many initiatives to improve the environmental management of Federal buildings, infrastructure and lands. The Federal Buildings Initiative (FBI) is one program which has served to advance the goal of sustainable infrastructure and also responds to the global issue of climate change. The FBI involves an innovative partnership between the public and private sector to improve the environmental efficiency in federally-owned facilities through energy, water and air system retrofits. To date, the FBI has been very successful: more than 4,000 Federal buildings have undergone system retrofits resulting in annual savings of approximately CDN$20 million and a reduction in greenhouse gas emissions in the order of 20% below 1990 reference levels in retrofitted facilities.

Another Canadian Federal initiative to reduce the environmental impacts of Federal buildings is the Green Office Project. Environment Canada is working in partnership with other Federal departments and industry leaders to incorporate environmental considerations into all facets of an Environment Canada office, ranging from floor design and product selection to construction and demolition waste diversion plans. As a result, this Environment Canada office floor was the first of its kind in Canada to be certified by the Environmental Choice Program, a Canadian eco-labeling organization. By incorporating environmental considerations into the management of Federal buildings and infrastructure, the Government of Canada has succeeded in saving money, reducing its environmental impact, and improving morale among government employees.

These specific Federal initiatives are being carried out under the umbrella of environmental management systems (EMS). An EMS provides Federal departments with a systematic approach to prioritize, plan, implement and review their environmental actions. To guide departments in this work, the Federal Cabinet in 1995 agreed to adopt a consistent approach to EMS across the Federal government, and established a set of

"best practices" for different aspects of Federal operations. These EMS efforts, in turn, fit within the Government of Canada's sustainable development framework which requires Canadian Federal departments to develop sustainable development strategies for their policies, programs and operations.

While many positive steps have been taken, more work is required both within Canada and internationally. The infrastructure of APEC economies represents huge stakes and opportunities: the health and safety of billions of urban residents, the productivity of our economies, and the quality of life of future generations. Public and private sectors from APEC economies should continue working cooperatively and learning from each other about techniques such as EMS and FBI to improve the quality of decisions that will gradually lead toward more sustainable infrastructure.

CHALLENGES IN ACHIEVING SUSTAINABLE DEVELOPMENT IN HONG KONG

Prepared by

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Hong Kong, China

CHALLENGES IN ACHIEVING SUSTAINABLE DEVELOPMENT IN HONG KONG

Summary

Hong Kong is a small place which is facing tremendous development pressures. Although Hong Kong is deficient in natural resources, its people have a very strong desire for economic and social development to secure rising standards of living, both for themselves and for their children. They also have strong aspirations for a good environment.

The need to integrate economic, social and environmental objectives has long been recognized. It has, indeed, been very much a part of our planning process. For example, the land use-transport-environmental planning framework recommended by the latest review of the Territorial Development Strategy has provided not only for meeting our development needs, but also for protecting and enhancing our environment. It also recognizes that the challenges of future development will require the mobilization and deployment of the resources of both the public and private sectors.

Whilst sustainability considerations are already a part of our planning process, it has become apparent that due to our physical size and resource constraints, it will be difficult to satisfy all development needs without causing adverse environmental impacts in the long-term.

To cope with the ever increasing development pressures arising from economic growth and population increase, as well as growing aspirations for a higher standard of living, we need an improved system of decision-making within the government to ensure that all policy and programme areas are consistent with the objectives of sustainable development. It is also necessary to raise public awareness of the importance of sustainable development.

To address the above issues, we have launched a consultancy study *on Sustainable Development for the 21st Century*. The primary objective of the study is to develop a framework to enable us to make better corporate decisions to achieve sustainable development in Hong Kong. Wide public participation will be undertaken throughout the study process.

Introduction

1. Hong Kong is a very small place by the standard of most world cities. Yet it faces tremendous development pressures which are generated not only from its own growing population but also from the rapid economic development in the adjoining Pearl River Delta region. Although Hong Kong is deficient in natural resources, its people have a very strong desire for economic and social development to secure rising standards of living, both for themselves and for their children. They also have

strong aspirations for a good environment. Satisfying these desires and aspirations is at the heart of pursuing sustainable development for Hong Kong.

Planning for a Sustainable Hong Kong

2. The need to integrate economic, social and environmental objectives in the physical development of Hong Kong has long been recognized. For example, the latest review of the Territorial Development Strategy (TDS) has established a land use-transport-environmental planning framework to guide the physical development of Hong Kong to the year 2011 and beyond, taking account of all these objectives. The planning framework has set out all the land and infrastructure requirements for meeting our development needs. It has also built in the objective of protecting and enhancing our environmental quality through such means as encouraging high-density, compact urban development rather than low-density urban sprawl; promoting a rail-based transport system to reduce air and noise pollution; designating more areas for country parks; and protecting environmentally sensitive areas.

3. The TDS review also recognizes, as a point of principle, that the growing challenges of the future will require the mobilization and deployment of the resources of both the public and private sectors. The public sector will need to focus on the formulation of policies, plans and programmes that should not only satisfy economic, social and environmental objectives, but also facilitate investment by the private sector in a wide range of activities, including major land development and related infrastructure projects.

4. In the provision of new transport infrastructure, for example, the TDS review points to the need to provide a high-capacity and environmentally-friendly rail system to enable the efficient movement of people between the major residential and employment areas. Since large up-front investment will be required, viable means of funding the railway projects will have to be explored. One possible way would be to link property development with the provision of railway stations and depots as this could contribute to both financial and operational viability. Through partnering public and private investments in the provision of land and infrastructure projects, sustainable new urban areas can be created.

Main Sustainability Issues

Demand Management

5. Whilst sustainability considerations have been a part of our planning process, it has become apparent that due to our physical size and resource constraints, it will be difficult, if not impossible, to satisfy all our development needs without causing adverse environmental impacts in the long-term. There is a need to think more vigorously about which aspects of, and how, the ever-growing demands for land and infrastructure could be managed.

Trans-boundary Issues

6. With the tremendous increase in socio-economic interaction between Hong Kong and the mainland of China in recent decades, we are now very much an integral part of South China in development and environment terms. As environmental pollution recognizes no administrative boundaries, it is important to examine more closely the emerging development patterns and trends in the region and understand their implications for our ability to achieve sustainable development.

Need for Strengthened Institutional Support

7. We also need to move towards an improved system of decision-making within the government to provide a more integrated way of setting and measuring community-based goals, and for deploying resources and introducing timely administrative measures to achieve such goals. Such a decision-making system should ensure that all policy and programme areas are consistent with the objectives of sustainable development, and that major decisions taken in one policy sector will be balanced against the impacts on other sectors. Existing channels for liaison on cross-boundary matters and issues may also need to be strengthened.

Public Awareness and Support

8. Above all, we need to raise public awareness of the importance of sustainable development. It is important for the community to understand that economic growth and improved quality of life can go hand in hand and that today's decisions may have significant implications on tomorrow's quality of life. For sustainable development to be successfully achieved, public understanding and support is fundamental.

Study on Sustainable Development for the 21st Century

9. To address the above issues, we have launched a consultancy study on *Sustainable Development for the 21st Century* (SUSDEV21). The study commenced in September 1997, and is targeted for completion before the end of 1999. The primary objective of the study is to develop a framework to help us make better corporate decisions to achieve sustainable development in Hong Kong. The study will:

- Define what the term 'sustainability' should mean for Hong Kong.

- Develop guiding values, sustainability indicators and criteria covering the economic, social and environmental aspects of development to provide a basis for measuring our performance on sustainability;

- Conduct baseline economic, social and environmental studies to establish the extent to which the baseline conditions satisfy the developed guiding values and sustainability indicators;

- Establish a 'sustainable development system' to provide a framework for corporate decision-making on relevant government policies, plans, programmes and resource allocation to achieve sustainable development;

- Identify policy and/or institutional areas that may need to be improved so as to facilitate the taking of decisions relating to sustainable development in a more informed, balanced and integrated way; and

- Get the widest possible public participation throughout the study process and bring to the attention of the community the importance of sustainable development.

Conclusion

10. To date, background studies have been completed documenting the international experience on sustainable development, regional development trends and the key findings of completed and on-going studies in Hong Kong, China, which have implications for sustainable development.

11. A major public awareness and consultation programme was launched in April 1998 to promote greater community understanding of sustainable development and to solicit the public's views on guiding values and sustainability indicators.

12. SUSDEV21 is a challenging study and is very much part of the UN, and APEC, efforts in promoting sustainable development. We would be pleased to receive any views on this important subject from, and share our experiences with, the distinguished audience here today.

SINGAPORE'S EXPERIENCE IN SUSTAINABLE DEVELOPMENT

Prepared by

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SINGAPORE'S EXPERIENCE IN SUSTAINABLE DEVELOPMENT

Introduction

Singapore is a small island state with a land area of about 650 sq km and a resident population of slightly more than 3 million. Being tropical, it is hot and humid and is not naturally a comfortable place in which to live and work.

Lacking natural resources, it has however grown by leaps and bounds over the last 30 years in almost all fields including economic, social, and environmental. This 'sustainable development' achievement is against all the odds. The aim of sustainable development is to make Singapore a 'delightful' place to live and work in, not just for the present generation but for many more to come.

So how has Singapore achieved its level of sustainable development? Some of the ways are described below.

Optimised Use of Resources

Singapore has had to optimise the use of its limited resources to sustain its development. Many schemes are based on this approach. I shall use ERP and DGP to illustrate:

ERP stands for Electronic Road Pricing. There is competing demand for space for roads and other development. Due to Singapore's limited land area, it is not possible to keep building roads to meet increased vehicle use due to increased economic activity. So, use of road space must be optimised to attain its maximum benefit. Roads are usually congested during peak hours and less well used at other times. Congestion pricing attempts to overcome this problem by charging more for the use of road space during peak hours and less (or nothing at all) at other times. Using this principle, Singapore implemented ERP on 1 April 1998 along certain roads. Vehicles travelling during peak hours and contributing to the congestion are charged a fee electronically for increasing the level of congestion. At other times, usage will either be at a much reduced fee or free. The result is that those who need not travel during peak hours will choose to travel earlier or later.

As a result, the traffic is spread out more evenly during the day. In fact, it has been found that traffic volume was reduced and traffic flow improved after the implementation of ERP. As the road space has been more optimally used, and the benefits have been proven, ERP will be extended to more areas in September 1998 and will later be extended even more widely.

Similarly the Development Guide Plans (DGP), a tool to plan development based on integrated transportation and land use has been extensively and systematically employed. Large tracts of land and new towns have been identified for this purpose. The use of this tool has led to efficient use of land with transportation, residential, educational, recreational, arts, and other facilities being laid out carefully, comprehensively,

compactly, and clearly well before the orderly and planned development or re-development of an area takes place. So far, almost all the 55 DGPs identified, including some new towns for the 21st century, have been completed,

Conservation Measures

Conservation is another strategy that has governed Singapore's development from early days. A statutory board (a semi-government body), the Urban Redevelopment Authority (URA), was formed in the 70s to look at how the old, about-to-become-dilapidated city area could be revitalised and rejuvenated. Instead of tearing down everything and rebuilding to current designs and standards, the URA decided to conserve these buildings. They set guidelines, conserving the important aesthetic components such as facades while allowing interior areas to be redeveloped to meet modern needs. Sanitary facilities were upgraded and street furniture was enhanced at the same time. This process has brought life back to otherwise deserted and run-down areas, turning them into new bustling centres of activity. The restoration continues in many older areas such as along the Singapore River, an area which was the birthplace of Singapore's economy but which was almost abandoned in the 70s. Conservation will give it a new lease of life.

Nature conservation has not been neglected during Singapore's strong economic growth and rapid urbanisation. Despite our urbanisation and limited land stock, large tracts of land continue to be committed to conservation of the natural environment. At present, some 2,000 ha of land have been set aside for nature reserves. This is almost 3% of our land area but we aim to increase this even more, to 5%!

Connected Globally

Singapore cannot expect to survive on its own. It was connected to the world by trading and other commercial activities in the past and will remain so in the future. But this economic connection is not sufficient. It is also connected to the world environmentally. Singapore was an active member in the international environmental community even before the recent Southeast Asian haze problem developed. It proposed a Singapore Green Plan in 1992. It has rigorously implemented the measures contained in the plan, which placed great emphasis on a global environmental strategy, based on a spirit of partnership and co-operation, to tackle greenhouse effects and ozone depletion. Singapore has continued to ensure levels of carbon dioxide emissions at below OECD averages despite rapid industrialisation and aims to phase out controlled CFCs and halons by year 2000, well ahead of the schedule set by the Montreal Protocol.

Being connected to the world provides a source of inspiration and learning for us as we watch with admiration, and take part in, bilateral and multi-lateral collaborative efforts to make the world a better place environmentally for mankind. Without this connection, we might not be as conscious as we would like to be of global environmental issues and shared responsibility. Collaboration has not only tremendously benefited the environment within our small country but has also helped us to contribute to the global environment.

Upgrading of Estates

This is local issue and a relatively new experience for us in Singapore which I would like to share with you. Eighty six percent of Singaporeans live in public housing built by the Housing Development Board (HDB), another statutory board. The houses built by the HDB are largely high-density highrises in more than 25 new towns.

Some of these 'new towns' built in the early 70s or earlier are now 'old'. The buildings were built at a time when Singapore's economy was just beginning to grow, and are by today's standard rudimentary and devoid of facilities. As the younger generation are better educated and earn higher wages, their expectations and demand for better housing and facilities also rises. They start to move out of their old homes and start their families in modern new towns which are equipped with bigger and better quality apartments and facilities. This trend, if left to continue, will surely bring about desertion and deterioration of older 'new towns', leaving them with only older, lower income people who cannot afford to move out. This will then turn them into urban slums with all the attendant problems like crime, vandalism etc. To check this trend and to bring new life into these older precincts, the Singapore Government conceptualised an Upgrading Programme under the Estate Renewal Strategy.

Under this programme, residents vote to decide whether they want their apartments to be upgraded *en bloc*. Individual residents will bear a small part of the upgrading cost thanks to a government subsidy. Loans are available in cases of hardship. If the majority approves the upgrading, new areas or facilities will be added to their apartments as well as additional common facilities like landscaped gardens. This scheme has met with great success since its launch and has transformed many precincts into pretty, lively areas, leading to increased resale value of the apartments.

Reduce, Reuse, Recycle

The Singapore Green Plan, among other things, aims to create a less wasteful society, one which will reduce, reuse and recycle wastes. Education programmes are actively pursued as the main thrust to achieve this aim. Programmes and financial incentives have also been used to promote greater recycling to conserve resources.

The momentum of the "self-sufficiency" approach in our building design is increasing rapidly as we recognise more and more our responsibility for proper and fair consumption of natural non-recoverable sources of energy. Two governing yardsticks are considered as critical in adopting this approach: occupant satisfaction and sustainability. The first yardstick takes into account physiological comfort in terms of things like indoor air temperatures and preference for things like windows and lights. The second yardstick takes into account the consumption of energy. By finding innovative solutions, we will cut down energy consumption by collecting more rainwater, and making more use of daylight and natural ventilation in our buildings. We should not consume more than we are entitled to.

Conclusion

Some of Singapore's success with sustainable development comes from close and careful co-ordination among ministries responsible not only for economic matters but also urban development, housing, public works and the environment. This close collaboration when extended across economic boundaries will, I am certain, bring about greater success in global sustainable development.

CASE STUDY FOR INFRASTRUCTURE PARTNERSHIP ON REDEVELOPMENT OF THE GUJARAT STATE TEXTILE CORPORATION (G.S.T.C.) SITES IN AHMEDABAD

Prepared by

Tadashi Nagai, Principal Planner
Nikken Sekkei Ltd
Japan

CASE STUDY FOR INFRASTRUCTURE PARTNERSHIP ON REDEVELOPMENT OF THE GUJARAT STATE TEXTILE CORPORATION (G.S.T.C.) SITES IN AHMEDABAD

I. Background and Objectives

1) The Governments of India (GOI) and of Gujarat (GOG) have implemented employment generation activities financed with National Renewal Funds (NRF) to alleviate the impact of industrial restructuring on retrenched workers. The activities include counseling, financing and redevelopment assistance financed by grants from Japan and Switzerland to help the GOI and GOG implement these activities.

2) The GOI, GOG, and the International Development Agency (IDA) agreed that the impact of the employment generation activities using NRF would be limited unless the regional economies were revitalized by an area generation scheme, particularly in an area like Ahmedabad where its major industry (textiles) has been severely affected. Accordingly, the GOG has developed an area regeneration scheme called the 'Ahmedabad Proposal' and submitted it to the Empowered Committee of the NRF for its financial support. The Ahmedabad proposal aims to redevelop the sites of 16 closed textile mills, owned by private companies, into new commercial and industrial centers. The IDA reviewed the Ahmedabad proposal and found significant potential for redevelopment of the idle sites. Redevelopment of the closed textile mills would contribute not only to the revitalization of the economy, but also to the urban redevelopment of Ahmedabad in terms of traffic improvement and environment control. A large part of the project costs could be financed by the private sector if the scheme is of an appropriate design and suitable financial arrangements are made. A part of the redeveloped land could be used for small, non-polluting commercial and industrial complexes combined with vocational training centers for the retrenched workers. However the GOI has not yet decided to extend support to the Ahmedabad proposal due to several legal and technical problems, although the Empowered Committee of NRF has already approved the proposal.

3) The IDA recommended that the GOI and GOG immediately start to implement a similar but smaller proposal from the Gujarat State Textile Corporation (GSTC), while making efforts to overcome the problems of the Ahmedabad proposal. The GSTC's proposal does not involve major legal or technical problems, as the unused lands are fully owned by the GSTC. A successful implementation of the GSTC's proposal would have a good demonstration effect on the promotion of the Ahmedabad proposal. The GOI and GOG asked the IDA to assist them in preparing a preliminary feasibility study of the GSTC's proposal. The GOI, GOG and IDA have agreed that a preliminary feasibility study should be conducted jointly by expatriate and local experts, under the combined Japanese Consultant Fund and the Swiss Grant.

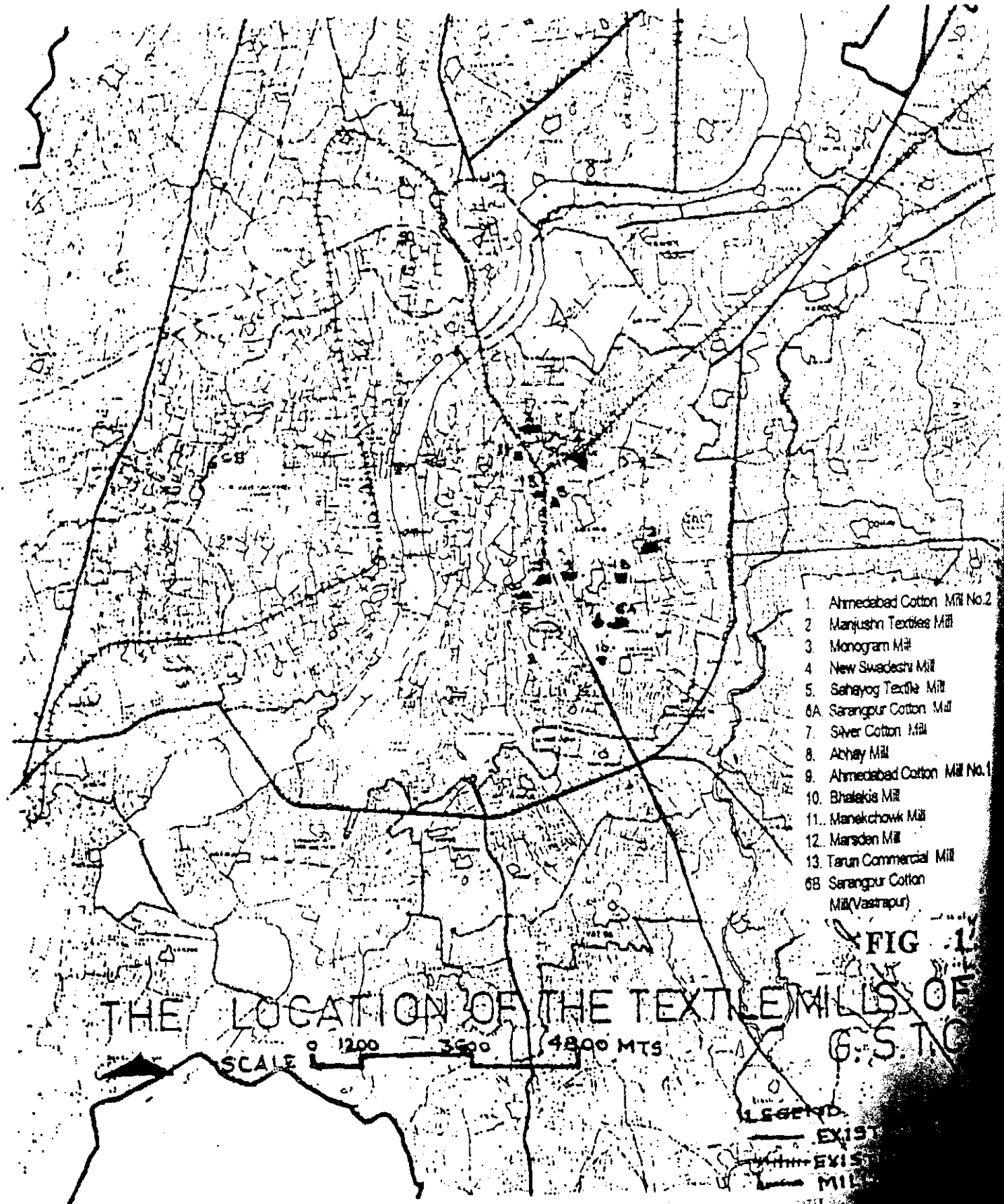

FIG 1

THE LOCATION OF THE TEXTILE MILLS OF G.S.T.C

4) The consultant team started a preliminary feasibility study in November 1995. However the GSTC was shut down in June 1996, half-way through the study, when the GOG had already paid 95% of compensation due to about 14,000 displaced workers. All the GSTC's mill sites are now under the control of the Gujarat High Court. Therefore, the first objective of our study for reviewing GSTC's restructuring plan has changed into the study of a scenario for the redevelopment of the GSTC mill sites in the context of the overall prospects and potential for the Area Regeneration Scheme. Based on the above objectives, the consultant team made the following studies:

- Strategic scenario for the Area Generation Scheme and identification of high priority sites for urban redevelopment
- Overall design for high priority sites
- Identification of the industries to be brought into the redeveloped sites
- Estimation of the land market price and the cost of the GSTC's redevelopment plan
- Financial analysis of the GSTC's redevelopment plan
- Assessment of institutional capabilities and recommendation for an institutional framework for implementation of the redevelopment at the GSTC's sites

II. Summary of the Preliminary Feasibility Study

Strategic Scenario and Overall Design for High Priority Sites

1) Eastern Ahmedabad, where most of the GSTC mill sites are located and where there are many idle private mills, is a heavily congested area. It requires a study of land use and traffic planning (prior to a comprehensive urban masterplan) to be conducted in parallel with our study. That study is out of our scope of work, but it is vitally important to show the future vision of Ahmedabad and the strategic scenario for the "Area Generation Scheme". In this context it is necessary to make a redevelopment plan at the GSTC mill sites.

Table 1 shows the "Future Vision and Theme Of 'New Ahmedabad 21' and Urban Functions to be Introduced to Sub-cores". We have categorized the idle mill sites and vacant lands in Ahmedabad into 6 sub-cores based on this future vision and theme: New City Center, East Community Park, East Amenity Park, West Community Park, Urban Industrial Park, and Distribution Park. The redevelopment theme of each GSTC mill site will be studied in this category although some of them may require a mid- to long-term timeframe for realization. *Table 2* shows the "Strategic Scenario for Area Generation Scheme in Ahmedabad". Here, we arranged the inter-relationship of "Theme for Area Regeneration Scheme", "Redevelopment of GSTC Mill Sites", "Infrastructure Required to be Provided", and "Other Redevelopment Required" from Phase 1 to Phase 3.

TABLE 1 FUTURE VISION & THEME OF "NEW AHMEDABAD 21", AND URBAN FUNCTIONS TO BE INTRODUCED TO SUB-CORES

Mega-Trend of 21 Century

- Age of Asia Pacific economic & cultural sphere of influence
- Age of multimedia communi-cation network
- Technical innovation
- Service economization
- Age of consumption culture
- Demand for leisure

Regional Position of Ahmedabad

- Unified economic and cultural sphere of influence with Bombay
- Strengthening network linkage with domestic major cities and surrounding historical towns
- Strengthening network linkage With Asia- Pacific

Future Vision and Urban Redevelopment Theme

1. **City in Emerging Megalopolis**
   - Sharing in a portion of Bombay's urban functions and activating the econmic activities
2. **New Industrial City**
   - Creating "New Manchester of India" introducing new types of industry
3. **"Communication Exchange" City**
   - Aiming at the "Telecommunication Exchange" City by providing a new facility for telecommunication exchange to support new industries, and by strengthening the network linkage between major domestic and overseas cities through renewal of airport functions.
4. **High Amenity City**
   - Making a high amenity environment through implementation of new housing policies. Promoting new Ahmedabad as a new sightseeing base by way of preserving and enhancing the environment in the walled city and eastern Ahmedabad as well as the surrounding historical towns of Udaipur and Jaipur.

Urban Functions to be Introduced to Sub-Cores

1. **New City Center**
   - Commercial complex including shopping center, market plaza, offices, business hotel, warehouses, etc.
2. **East Community Park**
   - East community complex comprised of vocational training center, middle and low income class housing, neighborhood shopping center, and community & cultural center, small industries, etc
3. **East Amenity Park**
   - Amenity complex comprised of amusement & sports park, middle and low class housing, and shops, small industries etc.
4. **West Community Park**
   - West community complex comprised of new type of commercial complex, high and middle income housing, community & cultural center
5. **Urban Industrial Park**
   - Urban industrial park comprised of new industries, godown, power generation plant, low income housing, small shops and offices etc.
6. **Distribution Park**
   - Distribution center and green park for the low income class residents in the surrounding area.

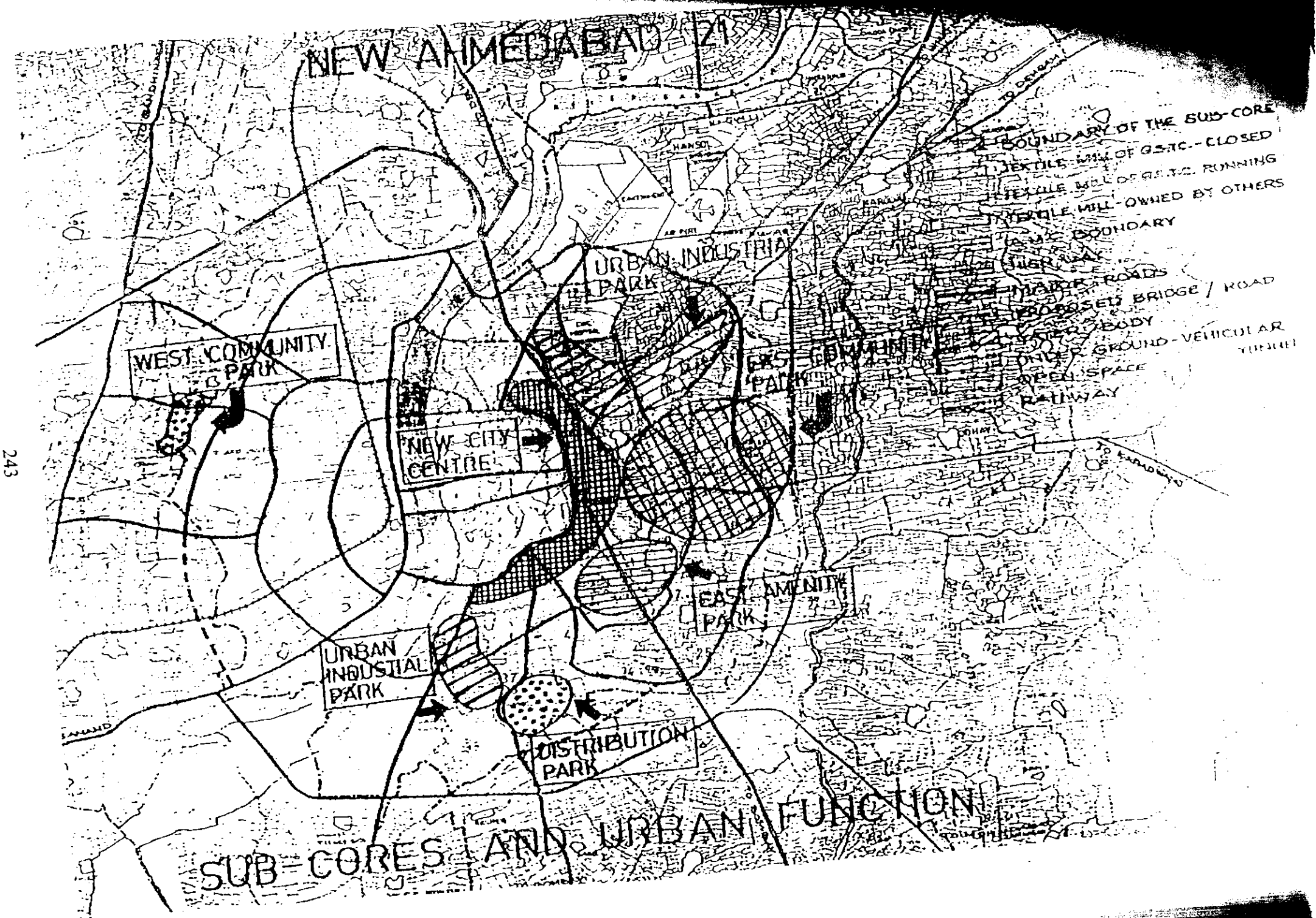
NEW AHMEDABAD 21
BOUNDARY OF THE SUB-CORE
TEXTILE MILL OF G.S.T.C. - CLOSED
TEXTILE MILL OF G.S.T.C. RUNNING
TEXTILE MILL - OWNED BY OTHERS
BOUNDARY
MAJOR ROADS
PROPOSED BRIDGE / ROAD
WATER BODY
OVER GROUND - VEHICULAR TUNNEL
OPEN SPACE
RAILWAY
URBAN INDUSTRIAL PARK
WEST COMMUNITY PARK
NEW CITY CENTRE
EAST COMMUNITY PARK
EAST AMENITY PARK
URBAN INDUSTIAL PARK
DISTRIBUTION PARK
SUB-CORES AND URBAN FUNCTION

Table 2 STRATEGIC SCENARIO FOR AREA REGENERATION SCHEME IN AHMEDABAD – 1

PHASE	THEME FOR AREA REGENERATION SCHEME	REDEVELOPMENT OF GSTC MILL SITES	INFRASTRUCTURE REQUIRED TO BE PROVIDED	OTHER REDEVELOPMENT REQUIRED
PHASE 1	1) Provide a master plan of Walled city, sub-cores and the surrounding area, and also a master plan of urban transport for strengthening the link between eastern and western districts of Ahmedabad, and attracting the demand of the west to the east. 2) Create employment opportunities in construction work by the redevelopment of GSTC mill sites, other industries, etc. 3) Promote vocation training centers for adult workers. Seek assistance from international cooperation agencies.	1) Organize and promote the redevelopment of GSTC mills. 2) Implement infrastructure development of GSTC mill sites as much as possible toward enhancing the urban redevelopment potential of eastern district of Ahmedabad. 3) Find foreign or domestic investors with much know-how and experience to promote the disposal of GSTC's sites by sale. 4) Make a project strategy for strengthening the production of power generation.	1) Aim at the completion of the existing inner and outer ring roads, and the highway connection to Bombay. Promote the middle and long term plan to provide new bridges across the river, flyover bridges across the railway, etc. These strengthen the traffic network and activate the overall urban activities. 2) Launch a land adjustment scheme around Ahmedabad station as a new face for the redevelopment of the eastern sites. 3) Provide new railway stations adjacent to the sub-cores at the Urban Industrial Park and East Amenity Park.	1) Make an airport renewal scheme to strengthen air linkage between major domestic and international cities.

STRATEGIC SCENARIO FOR AREA REGENERATION SCHEME IN AHMEDABAD – 2

PHASE	THEME FOR AREA REGENERATION SCHEME	REDEVELOPMENT OF GSTC MILL SITES	INFRASTRUCTURE REQUIRED TO BE PROVIDED	OTHER REDEVELOPMENT REQUIRED
PHASE 2	1) Sell the idle mill sites to private developers after the infrastructure development, and reimbursement of creditors' liabilities. 2) Put the unbalanced budget of GOG utilized for the operation of GSTC's mills to good use by providing infrastructure. 3) Change the image of the eastern district of Ahmedabad by redeveloping a new city center first, and attracting the surrounding redevelopment one after another. 4) Relocate the urban functions of the Wall City as commercial, distributive and institutional to the sub-cores on the outskirts of Wall City and disperse the urban traffic.	1) Sell GSTC's sites to the redevelopment implementing body after infrastructure development, and compensate the debt for creditors. 2) Promote and launch redevelopment as GSTC mill sites by developers, after the infrastructure development. 3) Launch the construction of the vocational training center for adult workers. 4) Launch the construction of the power generation plant for promoting the redevelopment at GSTC mill site.	1) Launch the construction of a new ring road between the existing inner and outer ring roads. Build new bridges, together with the existing inner and outer ring roads, and also a highway from Bombay. 2) Launch the construction of new public transport such as guide-way bus system etc. 3) Strengthen support for promoting Internet and information technology infrastructure.	1) Adopt slum clearance policies and provide low income class housing in the eastern district of Ahmedabad.

STRATEGIC SCENARIO FOR AREA REGENERATION SCHEME IN AHMEDABAD – 3

PHASE	THEME FOR AREA REGENERATION SCHEME	REDEVELOPMENT OF GSTC MILL SITES	INFRASTRUCTURE REQUIRED TO BE PROVIDED	OTHER REDEVELOPMENT REQUIRED
PHASE 3	1) Involve private mills in a series of redevelopment projects applying the know-how of GSTC mills, and move toward finalizing the Area Regeneration Scheme of Ahmedabad.	1) Finalize reimbursement of GSTC's liabilities. 2) Terminate all building redevelopment at GSTC's sites after land adjustment, and realize the theme of "New Ahmedabad 21".	1) Complete construction of new arterial road. 2) Complete construction of new public transport. 3) Complete development of Internet and other information technology infrastructure.	1) Complete renewal of airport function facilities. 2) Continuously implement slum clearance projects, and construct low income workers' housing.

2) The Gandhi Labour Institute (GLI) is identified as a nodal agency by the Government of India to implement retraining and redevelopment activities for displaced textile mill workers in Ahmedabad (and more widely in Gujarat) under the NRF. It has retrained nearly 5,000 displaced workers in eighteen months using several training institutions and trade schools in the city. Yet, there are several gaps.

   The majority of displaced workers are middle-aged or older while the GLI is at present using training centers which are meant for young people. Short-term training modules will have to be specially designed with more emphasis on practical aspects and this will require more equipment and machinery. The training center should also incorporate the related functions of counseling and redeployment after training. These pre- and post-training activities have to be an integral part of any proposed training center. The City of Ahmedabad in particular, and the State of Gujarat in general, are heavily affected in terms of labor displacement. There are about 40,000 adult displaced workers below 45 years of agein the state, 30,000 of whom are in Ahmedabad. A specialized training center would symbolize society's concern to set up appropriate institutions to help workers to fight unemployment and to prevent unemployment in the future. Such a training center for adult displaced workers could be located on one of the idle GSTC sites.

3) Ahmedabad Cotton Mill No.1 is located next to Ahmedabad Railway Station. It faces the ring road running around the walled city and is adjacent to the New Cloth Market which is a hub for textile traders. New Swadeshi Mill is located near the railway yard, facing a prime main road which leads to Naroda and a 120-feet-wide road on the east. The surrounding areas are predominantly industrial. Manjushri Textile Mill is located at the junction of two 80-feet-wide main roads, and the surrounding areas are predominantly residential consisting of lower and lower-middle income housing units along with a few small industrial units. The site of Ahmedabad Cotton Mill No.1 was sold to a private developer during our study, but the other three mills were selected as high priority sites for further study due to their good traffic accessibility and the characteristics of the surrounding areas. In the first stage of redevelopment, these high priority sites are to be redeveloped in a pilot scheme. If the results are acceptable, then the implementing body will proceed in the second stage to redevelop other sites, step by step, based on the experience and knowledge acquired through the pilot scheme.

4) The overall designs for the above three high priority sites were drawn up based on a marketing study for each site. The following functions were included in the redevelopment sites:

   (a) Ahmedabad Cotton Mill No.1

   - A large-sized budget hotel targeted at small and medium business clientele
   - Commercial complex for medium-sized shops and offices
   - A medium-sized warehousing facility to cater to the needs of adjacent

business

(b) *New Swadeshi Mill Site*
- A small or medium-sized local power generation unit
- A commercial complex with shops on the ground floor and offices on the upper floors occupying the frontage of the site
- Medium-sized industrial estate for non-polluting industries

(c) *Manjushri Textile Mill*
- A small industrial estate
- A wholesale market plaza or 'godowns' for items related to transportation
- A residential complex for lower-middle income groups

Identification of Industries to be included in Redeveloped Sites and Policy Intervention required at the Local & State Levels providing Incentives for the Private Units

5) After analysis of major investment projects under implementation in Ahmedabad, the adjoining districts of Vadodara, Kheda and Gandhinagar, and in the Greater Bombay and Thane Regions, the following industries were identified to be introduced to the redeveloped sites:

(a) *Infrastructure Sector*
- Small/Medium-sized Power Generation Units etc.

(b) *Manufacturing Sector*
- Ready-made Garments
- Pharmaceuticals, Drugs and Medicine (non-polluting)
- Rubber and Plastic Products/Packaging
- Gems and Jewelry
- Food Processing Industries (non-polluting)
- Fabrication Units and Engineering Ancillaries etc.

(c) *Service Sector*
- Commercial Complexes
- Budget Hotels
- Warehouses and Godowns
- Middle Income Housing
- Medical Health Facilities (middle income)
- Telecommunications
- Banks etc.

6) Listed below are state and local government policy approaches that should encourage implementation of large scale urban regeneration programmes and provide appropriate incentives to encourage private sector investment.

(a) Assure provision of dependable infrastructure facilities including: power supply, water supply, drainage system, effluent treatment facility,

telecommunication, and an arterial road to connect eastern Ahmedabad with western Ahmedabad

(b) Exempt from taxation (such as payment of the local Octroi duty)

(c) Give positive benefits, such as cheap land prices, to this project rather than similar investments/projects in the rural areas of Ahmedabad

(d) Provide a pre-determined subsidy for redevelopment projects which include construction of housing for lower and lower-middle income groups

Financial Analysis of GSTC's Redevelopment Plan

7) The GSTC land is the most valuable asset available for liquidation. We tried to estimate the realizable fair market price for all GSTC mill sites in Ahmedabad. Reference was made to basic information on registered land transactions, the GIDC's land auction in 1996, estimates prepared by GITCO, and information from different land development and real estate firms operating in Ahmedabad. The total value for all GSTC mill sites was estimated at Rs. 262 crores as of June 1996 by assessing the potential of these sites (GSTC mill sites in Ahmedabad: Rs. 187 crores, and GSTC mill sites outside Ahmedabad: Rs. 75 crores).

8) The site infrastructure development cost for all Ahmedabad GSTC mill sites was estimated at 1,554 lakhs. The average cost for infrastructure development of the GSTC mill sites could be regarded as a nominal incremental cost amounting to only around 8% of the average land price, even less in most cases. This estimate will be reviewed in the next stage of a precise feasibility study. The main tasks involved in infrastructure development are as follows:

- Survey, leveling and contours
- Drainage lines
- Pipe lines for water supply
- Roads and pavement
- Street lighting

9) The GSTC's assets and liabilities, including the displaced workers' compensation already paid under an attractive Voluntary Retirement Scheme (VRS), were analyzed. *Table 3* shows GSTC's balance sheet as of December 1996. The deficit will remain even after realizing the full market value of GSTC's disposable assets. The deficit could amount to Rs. 805 crores if we consider the accrued interest on unsecured loans up to 31 March 1996. However, if we exclude the accrued interest on unsecured loans from GOG, the gap turns out to be Rs. 639 crores. More than 99% of the GSTC's liabilities (excluding the displaced worker's compensation) consist of unsecured loans from the GOG. The above deficit must be recovered by the GOG. The quick approval and implementation of the proposed redevelopment plan would enable the GOG to recover at least part of the principal amount of its unsecured loans to the GSTC. Viewed from this perspective, the proposed Redevelopment Plan for the GSTC mill sites could essentially be regarded as an optimal strategy geared to minimizing losses.

Table 3: Gap between GSTC's Liabilities and Assets as of December 1996

GSTC's Liabilities	**GSTC 's Assets**
Secured Loans Rs. 1.18 crores	Realizable Value of Fixed Assets Rs. 308.66 crores
Unsecured Loans (Including accrued interest up to 31 March 1996) Rs. 887.24 crores Workers Compensation under VRS Rs. 225.00 crores	(Plant, Machinery, Vehicles, Furniture & Fixtures: Rs. 47.05 crores/ Land: Rs. 261.61 crores)
Total Liabilities of GSTC Rs. 1,113.42 crores	Realizable Value of GSTC's Assets Rs. 308.66 crores
The Excess of Liabilities over Assets Rs. 804.76 crores	
The Excess of Liabilities over Assets Excluding Accrued Interest On Unsecured Loans from the GOG Rs. 638.68 crores	

Implementation Methodology and Institutional Framework for Implementing Redevelopment Projects at GSTC Mill Sites

10) Since the GOG has no knowledge or experience in the area of land development it may find it difficult to create, market, and finance the redevelopment projects. They should therefore invite credible private partners with knowledge and experience in land development to implement the project. A good public/private partnership has to be explored for smoothly promoting redevelopment projects at the GSTC mill sites. The GOG's role is to fulfill prerequisite conditions for the implementation of land redevelopment schemes, and to promote and manage the projects. Tasks include:

- Get the GSTC mill lands released from the official liquidator of the High Court.
- Provide input for project promotion from the viewpoints of overall urban planning in terms of zoning, urban design guidelines, traffic, infrastructure etc., with related agencies such as AUDA, AMC, etc.
- Grant, in a timely manner, the required licenses and approvals for land redevelopment to the implementing bodies and related agencies such as AUDA, AMC, etc.

11) It is important to establish a public/private partnership to promote redevelopment projects with project management and control functions such as the Area Restructuring Agency (ARA). It should be comprised of government officials from the GOG and related agencies along with experts in the field of urban planning and design, civil engineering, marketing and financing. The roles of this ARA shall be to:

- Find private investors and promote the redevelopment projects
- Manage and control the redevelopment projects, coordinating with the related agencies for the promotion of the redevelopment projects
- Sell the land after infrastructure development and liquidate the GSTC's liabilities.

12) Fixed assets such as machinery shall be sold by the liquidator, but land shall be sold only after enhancing the market value of the GSTC mill sites to a level of realizable value which includes the site infrastructure development and the legal alteration of the city planning regulations. This is important for promoting a good urban environment. In this regard, we want to recommend two alternatives for the implementing body. One is to establish an Area Restructuring Agency (ARA) as the implementing body (public/private partnership) for site infrastructure development. In this case, the GOG holds shares corresponding to the value of the GSTC's site, and sells them to the private investor at the enhanced land price after the site infrastructure development. The ARA can easily get financing for the redevelopment cost with equity rather than debt. Another is to implement the site infrastructure development through public sector agencies such as AUDA, AMC, and GIDC on behalf of the GOG, after finding the private investor. The GOG sells the land to the investor at an enhanced cost after the site infrastructure has been developed. In this case, a conditional contract with the investor may need to be financed by the banking system. To encourage investment and profitability the buildings should be constructed and managed by the private investors themselves and public intervention should be prohibited.

13) On the other hand, to realize the aforementioned vocational training center for adults, its basic concept should be authorized by the GOG and GOI as soon as possible. The procedure for application to the appropriate overseas agency for getting the financial and operational aid should be started through GOI .

III. Next Step

The GOG will proceed to the next stage of the feasibility study promoting the redevelopment project of the GSTC mill sites by getting technical assistance from the IDA. The major objectives of the feasibility study shall be summarized as follows. An overall urban masterplan for Ahmedabad will also be required to be written by the appropriate agency in parallel with the feasibility study.

- Make redevelopment master plans for all GSTC mill sites in and outside Ahmedabad, and get the legal interpretation and approval of related agencies on the redevelopment plans
- Execute a practical marketing survey for finding private investors and reflecting the requirements of the private investors in the implementation programme
- Make a financial scheme based on the above study
- Specify an implementation programme

BUILDING AN APEC FOOD SYSTEM AND REDUCING RURAL POVERTY

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BUILDING AN APEC FOOD SYSTEM AND REDUCING RURAL POVERTY

Summary

The Pacific Economic Cooperation Council (PECC) Food and Agriculture Forum Hong Kong Communique (October 1996) to APEC built on the Beijing Communique (September 1995) in stating that:

Development of the food and agriculture system in APEC member economies is critical to the continued balanced growth in the region. A modern, efficient food production and delivery system is a necessary component in achieving both macro-economic and social objectives. The challenge for Pacific Rim governments is meeting rapidly growing consumer requirements for a diverse variety of quality food products through domestic production, investment and trade.

It is primarily infrastructure and policy, not buying power, that limits the movement of desired food products to the consumer market.

Asia's economy and population is, at present, approximately 75% rural in the developing economies. Over the next twenty years it is estimated that more than 1.5 billion people will move from rural areas to Asia's cities. A tremendous public and private investment in basic infrastructure will be needed not only to move and accommodate those people in population hubs, but also to meet improved food system requirements and employment demands throughout the countryside.

In less than 20 years there will be 27 cities with populations over 10 million. Fifteen of these "super markets" will be in Asia. Of these, Asia will have 8 "hyper markets" with populations over 20 million–including Tokyo, Shanghai, Jakarta and Beijing.

It is already acknowledged that urban infrastructure will be critical to accommodate these vast movements of people to population hubs in order to mitigate potentially devastating human and environmental effects. An adequate food supply and efficient distribution system will be necessary as part of the basic urban infrastructure.

However, equally important is the public and private sector investment in infrastructure development necessary to link rural and urban economies in order to give agricultural producers cost-effective access to urban consumer markets, and enables agricultural producers to utilize world-standard technologies in the production and processing of foods that meet safety and quality requirements. Rural residents would also benefit from improved nutrition in their diets and safer food products.

APEC must give prime attention to infrastructure that creates the linkages of rural to urban markets and permits diversified wealth creation opportunities for rural residents. If national economies can be structured to enable non-urban residents equality of economic opportunity, the effect will stem the tide of rural people rushing to urban centers for jobs and income.

APEC took a major step forward in the Ninth APEC Ministerial Joint Statement (Vancouver, November 21-22, 1997) by calling for the following priority in Economic and Technical Cooperation:

Infrastructure for rural diversification and integration:

"Ministers noted that improving infrastructure in rural communities, including roads, telecommunications, power generation, and capacity building, is critical to the region's development and cannot be overlooked. Ministers directed APEC fora to work with the private sector and include in their efforts infrastructure initiatives for promoting integration and diversification of rural economies."

The following paper was presented for consideration at the Symposium on "The Impact of Expanding Population and Economic Growth on Food, Energy and the Environment" in Saskatoon, Canada (2-4 September 1997) as the basis for encouraging the above ministerial initiative.

It is critically important to utilize the current Asian economic/financial crisis as an opportunity to re-focus attention on building rural viability.

- The World Bank and Asian Development Bank should broaden their support to rural areas from production agriculture, health and environment to the linkages required for national and global viability of rural regions.

- The cross-sectoral issues need to be examined through private/government teams and work programs that include not only traditional agricultural and development specialists, but also the business sectors that are needed to build rural linkages. This includes power generation, transportation, telecommunication and finance.

- The appropriate policies need to be developed and determined by APEC member economies in order to create private sector incentives for investing in rural areas and in rural projects. These could include tax concessions either for specific projects or in specific areas or zones.

- The developed APEC member economies that have had experience building successful national infrastructure need to provide special assistance to developing economy governments.

In summary, APEC has a critical role to play in providing the impetus to bring rural and agricultural residents into the mainstream of economic life through infrastructure development. Integrating rural regions into an APEC food system and into the Pacific/global economy is critically important not only for the well-being of all peoples living in APEC economies, but also for the empowering of all peoples to participate in the benefits of the stated APEC goals of free trade by 2010/2020.

Introduction

Globalization and global interdependence are the themes most dominant in our economic system as we approach the 21st century. Agriculture is the most critical component of economic life. As such, the sustainable development of a modern, viable global food system presents the most important challenge to improving life for all people on the earth.

Traditional policy has tended to utilize agricultural production and price support mechanisms as the primary means of improving living standards in rural regions around the world. The terms "rural" and "agriculture" are often used interchangeably when referring to economic benefits for the non-urban population.

Moreover, the traditional policy framework typically isolates the consideration of "agriculture" in the domestic and global economy, despite the fact that it is one of the most highly integrated and inter-dependent economic sectors when considered in the full context of the food system. The food system includes the factors of agricultural production which generate food supplies, the industries which provide farm inputs, food processing, and the wholesale and retail food distribution chain. But the food system also includes the social and economic factors that impact "food producers" and their families in rural areas.

The modern information age's technological revolution is changing the content of the entire global food system - from biotechnology in production, global sourcing of inputs and marketing of consumer food products, to expanding the potential for diversified employment and investment creation in rural regions around the world.

The goal of APEC should be to bring the health and food security benefits of the modern global food system to every man, woman and child living in the 18 member economies, and from there to the entire world. This goal obviously has many policy dimensions, and the development of a integrated food system requires a cross-disciplinary and integrated set of responses.

As the 21st century draws near, we must ask questions today that are relevant to achieving our goal. We must challenge longstanding theories that have been at the basis of policy development, but have not brought the desired effects to our rural residents. One of those "false" beliefs is that per unit price supports and high walls of agricultural trade protectionism at borders would enrich rural residents.

This legacy of 20th century agricultural trade policies was grounded in misguided market economics that will not achieve our goal of feeding more than 6 billion people at the birth of the millennium and 10 billion by 2050; nor will it reduce the poverty and inequality characteristic of rural areas.

- Rural populations–both on and off farms - will receive the benefits from globalized markets only if they are able to participate competitively in those markets.

- Infrastructure - not agricultural price policy - is the most critical priority to giving rural residents a stake in the global economy and giving farm producers a position in the global food system.

- Rural infrastructure should not be viewed in isolation. Modern technology provides the innovations that can more equitably create seamless links of rural areas to domestic and global markets.

- Public and private investment and public policy need to work hand in hand to support the infrastructure development that builds the human and physical capital required to allow the simultaneous flow of market benefits to and from rural to global.

The World Bank recently published a study focusing on the development of East Asia. *Everyone's Miracle?: Revisiting Poverty and Inequality in East Asia* highlights specifically the growing inequality in poverty reduction between rural and urban populations. The authors' findings included the following:

"East Asian poverty remains principally a rural phenomenon, and it continues to affect farmers and the uneducated disproportionately."

"That disparity in the spatial distribution of economic prosperity, which can be measured across regions or between urban and rural areas in many economies, is rising."

"Growth in rural non-farm employment opportunities has been a major feature of rural income growth, helping to absorb workers from lower-productivity farming."

"Rural infrastructure both provides employment...and reduces the cost of rural commerce."

The purpose of the following discussion paper, therefore, is to build a conceptual framework for linking domestic food system infrastructure development in APEC to the APEC 2010/2020 commitment of creating an APEC food market, or an APEC of "Food without Borders".

Food Without Borders

APEC occupies the dominant position in the world, regardless of what measurement is adopted–population, purchasing power, share of total GDP, trade flows.

However, the food sector is still relatively closed in many cases and the benefits of an open and integrated APEC food system are yet to be realized. Without an open APEC food system, both the regional and global economies performance will be restrained and distorted.

What would it take to unleash the full benefit to mankind of a totally open and integrated global food system?

Just as there is the valuable French medical aid unit called "Medicins sans Frontieres" (doctors without borders), APEC should set a goal of "Food without Borders".

Moving into the 21st century, every agricultural producer would like to capture a competitive position in the global food system. Growth in consumption of farm/food products will be rising with populations and incomes.

However, decisions we make today in trade policy will determine:

- Whether agricultural trade will account for a larger share of total food consumption;
- Whether agricultural resources will be used more or less efficiently; and, as a result,
- Whether agriculture will contribute to the positive growth of global GNP.

In order to achieve "Food without Borders" no trade policy is more important than the commitment to food security on a non-discriminatory basis by the world's agricultural exporting countries. APEC's agricultural exporters should take a lead even before the WTO resumes agricultural negotiations in 1999 by committing to give importing economies equal access to supply, and by pledging non-discrimination in their treatment of foreign and domestic buyers in times of short supply.

The Uruguay Round Agricultural Agreement's Article 12 which covers trade restrictions and prohibitions does not go far enough to provide importers with confidence in their access to necessary products. The world needs to know that all exporters will be "reliable suppliers" and APEC should put this commitment as a priority for an "early harvest" achievement.

Ending Agricultural Apartheid

In achieving the goal of a global food system, we face strong opposition from those who profess to be staunch supporters of agricultural producers. These defenders against trade argue that agricultural markets can't be opened without hurting farmers. Agriculture, they say, is too difficult and too sensitive politically. They argue that farming isn't like the rest of the economy and that only by maintaining high internal commodity prices through high border protection can they support the social structure of rural areas.

The history of the past 50 years tells a very different story. We have, in fact, imposed a great burden and great cost on the rural citizens of our economies by maintaining agricultural policies to support the price per unit of commodity production. We have applied rules to agriculture that were totally contrary to market fundamentals.

We took these actions for the alleged purpose of bringing prosperity to rural and farm populations. The result has, in many cases, been just the contrary.

The world has, in fact, practiced what could be termed "agricultural apartheid"- enforcing policies that have attempted to keep the agricultural sector separate and outside the dynamic market economy's opportunities and full benefits.

While not deliberately malevolent, the effects have been to harm rather than improve the lives of rural residents. Rather than enriching rural residents, we have created in many countries a permanent under-class. Industrial economies have enacted policies to support prices of commodities with strict government controls that have restricted flexibility in production and markets; developing countries have often sought to maintain low food prices with policies which have had an equally devastating effect.

By supporting prices, rather than supporting infrastructure development, we have not allowed rural residents to competitively participate in domestic and global markets. The result has been a negative impact on the environment and social instability through forced urbanization.

By denying a basic modern infrastructure to rural societies, we have driven young people to cities in record numbers. That migration is growing geometrically as people all through the developing world seek to participate in the wealth creation brought about by the globalization of the industrial economy and made possible by the technological revolution - particularly information technologies.

Why are they fleeing their families and communities? Because they cannot better themselves by staying at home.

The 20th century myth is that trade liberalization is the biggest threat to farmers' incomes. In fact, many farm producers today are unable to compete effectively and receive a reasonable price for their output in their own domestic markets, because they have no efficient means to transport their production to market, or to retain product quality. In many cases, they don't even know what price their goods will bring.

The truth is that without modern infrastructure development building bridges between rural and urban areas rural residents have been prevented from participating fully in their domestic economy and the global economy. This has led to a widening poverty gap that is the real threat to agricultural producers and their families and communities as we approach the 21st century.

Food System Infrastructure's Economic Benefits

The traditional approach to agricultural infrastructure has been focused primarily on farm production inputs, irrigation and rural roads.

A modern food system infrastructure, in contrast, gives agricultural producers the ability to competitively market their products in domestic and global markets, and gives distributors of processed foods the ability to sell their products throughout the domestic market. A modern technological infrastructure is critical to farm producers and

consumers, by allowing the processing and delivery of the same safe, quality, diversified food products to consumers in both urban and rural areas.

Moreover, the benefits of building infrastructure linkages that bind rural/agricultural societies to the mainstream economy extend beyond marketing opportunities for the food industry sector.

A modern food system infrastructure permits expanded job creation in rural communities, by providing the technological "backbone" - capacities that permit businesses to operate outside of major urban centers. This gives members of farming families the opportunity to earn wages from off-farm employment in a diversified industrial and service sector expansion which benefits the rural region, and reduces its income dependence on basic agricultural commodity prices and productions.

Trade agreements are only one variable in market building. Infrastructure expansion is an even more critical force that must be addressed.

What is that infrastructure? Viable modern roads and transportation modalities, telecommunications, power generation, sanitation of water and sewage treatment, education, health care and access to finance - all are critical to expanding the benefits of the modern food system to every citizen on this planet - and to bringing the benefits of competing in the global economy to every farm producer.

FEEEP'S Role in the APEC Food System Infrastructure

APEC's study of “The Impact of Expanding Population and Economic Growth on Food, Energy and the Environment” (FEEEP) has a critical role to play in providing the impetus to bring rural and agricultural residents into the mainstream of economic life through infrastructure development. Integrating rural regions into an APEC food system would:

- Improve production efficiencies and resource utilization to improve the level of sustainable farm and food production;
- Improve per capita economic growth rates through diversified business activity;
- Expand the creation of competitive investment in business outside of urban mega-cities;
- Reduce the growing living standards gap between rural and urban populations; and
- Reduce the environmental and social crises straining the infrastructures of over-populated urban "mega-cities"

U.S. Trade Ambassador Charlene Barshefsky recently quoted a study which estimated that consumers around the world would save $1 trillion by the year 2010 from lower trade barriers under the Telecommunications Agreement. In the OECD alone, due to

agricultural protection, consumers are paying an estimated $190 billion more annually for food than they otherwise would be.

If we were to totally open food markets, we would save $1 trillion over 5 years in developed economies alone. And when you consider the cost of agricultural protection throughout the world, the numbers dwarf the telecommunications savings.

Trade negotiators are focused on opening markets at borders. But, simultaneously, we need to open markets to rural residents through developing the food system infrastructure within economies.

We could be building a bigger and wealthier food system if we were to direct a percentage of the money we save from reduced protection to building the infrastructure bridges that connect rural economies to domestic and global markets.

We should be enabling rural and farming families to diversify their sources of income, by introducing policies and development assistance that expand investments in agricultural processing and food production, in non-agricultural industrial and service businesses, and in education and training.

APEC's study on FEEEP should consider directing resources to examining the factors, costs and benefits of more fully integrating agricultural producers and rural residents into the global economic mainstream. This analysis should engage not only agricultural and rural policy officials, but should be a cross-disciplinary exercise engaging both private and public sector officials involved in areas of economic activity that comprise the necessary macro-infrastructure base.

Concluding Summary

In conclusion, without adequate modern infrastructure linking rural areas to urban and global markets, we will slow down demand growth, income growth, and support for trade liberalization.

We have the opportunity to enter the 21st century with a commitment to build a global food system. The greatest threat we face is that we will not learn from our past experience.

If we want a world of ‘Food without Borders’, we must end agricultural apartheid and bring the benefit of globalized markets to all the people who produce the food that sustains human life on this planet.

NETWORKS TO FACILITATE INFRASTRUCTURE

NETWORKS TO FACILITATE INFRASTRUCTURE

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NETWORKS TO FACILITATE INFRASTRUCTURE

I. Introduction and Background

Over the recent decades, the Asia-Pacific region has experienced the most striking economic growth in the world and created many outstanding developmental achievements. The region, currently constituting almost half of the world's population, represents approximately 55% of total world income and 46% of global trade. Without doubt it has been a major contributor to global prosperity and stability.

This dynamic region has seen rapid annual growth averaging 2.3% over the past 10 years, with the developing economies in East Asia growing at an annual rate of 8.6% over the same period. Based on current trends, the world's top 15 economies in the year 2020 will include several Asian economies. Already, half of the world's top 20 trade economies are from the Asia-Pacific region. These economies include the United States; Canada; China; Japan; Singapore; Hong Kong, China; Australia; South Korea; Mexico; Malaysia; and Chinese Taipei.

Despite the strong record of economic success in the region, questions have arisen concerning the region's long-term growth prospects and the ability of individual economies to realize their long-term potential. In particular, questions have been raised as to whether Asia-Pacific economies are able to meet the challenges they are facing and remove bottlenecks to further development. Inadequate infrastructure is certainly one of the major challenges that must be addressed.

Rapid economic expansion and urbanization have outstripped the capacity of existing infrastructure, presenting the region with a serious impediment to further investment and growth. According to the World Bank's 1997 Annual Report on East Asia and the Pacific, the region's infrastructure needs are estimated at US$1.3 trillion to US$1.5 trillion during the next 10 years. These needs far exceed the financial and managerial capacity of the public sector and can only be efficiently met if the private sector's role is enhanced significantly and infrastructure provision is commercialized.

Currently, private sector investment accounts for, at most, 10% of today's infrastructure investment in East Asia, a percentage which is considered well below the potential. The World Bank has put forward the view that it is conceivable to increase the share of privately sponsored and financed projects from the current low level to over 30% over the medium-term. Such assessments are indicative of the great potential to increase investment in infrastructure toward the desired level whilst mitigating the need for directing scarce public sector financial and managerial resources away from other priority social and environmental needs.

II. The Importance of an Infrastructure Information Network/Database

Many economies in the Asia-Pacific region have responded to the huge demand for infrastructure by recently establishing "Encouragement of Private Participation in Infrastructure" as one of their main policies. A critical success factor in attracting private investment in infrastructure is that the political and economic leadership of each economy continues to clearly articulate the national objectives and priorities for infrastructure and for inviting private participation. Ways should be sought to build dialogue, understanding and cooperation in broader circles, for both the private sector and the public sector, for the domestic as well as the foreign. The market survey conducted by the International Development Center of Japan in 1997 also reported that the shortage of information on the investment environment in the region discouraged private entities from participating in private infrastructure projects. Unless the situation has been greatly improved, private infrastructure investment might attract only a limited number of experienced entities. Accordingly, there is considerable scope to establish facilitation networks to provide the best possible information on infrastructure investment and to facilitate regional cooperation to meet the immense infrastructure requirements of the Asia-Pacific region.

Several member economies are engaged in the setting up of infrastructure-related networks/databases in the region. Japan has developed Infra-Net (Infrastructure Development Information Network) in the past year. Canada is conducting the feasibility study of the APEC Network of Infrastructure Facilitation Centres and will present an in-depth proposal, and market-testing and market-development during 1998. Chinese Taipei has established the ID**2 (Infrastructure Demand Information Database) system to demonstrate the outcome from the Survey on APEC Infrastructure Demand conducted in 1997 and is now working on the updating of Survey Data.

All of these three major networks/databases have made great contributions in the provision of better information to facilitate private sector involvement in infrastructure. However, they each focus on somewhat different areas.

The Infra-Net is designed to play the role of a "Yellow Pages" of private infrastructure projects with the full utilization of existing databases. In other words, it is a website where any organizations or individuals can find how and where they can get necessary and detailed infrastructure-related information.

The ID**2 is a database which includes 716 infrastructure projects from 11 member economies with the aggregate value of US$335.2 billion, including US$105.4 billion of private sector investment. Each of these reported projects has a value of more than US$40 million and either was completed or is to be commenced for construction during the period 1994 to 2002. The information reported in the ID**2 has fully demonstrated the massive infrastructure demand in the region, which is sure to have an appeal to the private sector considering infrastructure investment.

As to Canada's APEC Network of Infrastructure Facilitation Centres, it is designed to serve as a clearing house for the information on infrastructure investment requirements and opportunities being assembled through a number of projects in the APEC infrastructure work program such as Infra-Net and ID**2. It also intends to act as a center of excellence on trans-border infrastructure issues by, for example, providing expert assistance in mediation of public/private disputes in the region.

III. The Rationale and Functions of Facilitation Networks

The rational and functions of such facilitation networks have been thoroughly discussed among member economies at APEC Infrastructure Workshops for the past two years, and it is well recognized that a complete network should be developed in the following three directions:

Firstly, the network should serve as a focal point for various other networks and organizations involved in infrastructure in the region, such as those in the international banking and finance sectors, the engineering, construction and management sectors, legal services, public development entities, and academic and research institutions.

Secondly, the network should provide information regarding infrastructure investment environment in each of member economies, including relevant regulations and policies, current status of and future plans for infrastructure development, relevant authorities, and so on.

Finally, the network should play an active role in enhancing and promoting the openness and transparency of information regarding infrastructure investment opportunities in the region so that all interested parties will have the chance to participate in infrastructure projects.

IV. Further Development of Facilitation Networks

To make the best use of resources available now, and avoid overlapping works in the future, existing networks/databases should be integrated and employed as a foundation for the further development of facilitation networks, such as the establishment of regional centers to facilitate infrastructure. Such integration efforts will respond to private sector demands for more inclusive networking and accordingly enable the private sector to make long-term investment commitments to infrastructure.

In addition, it has been fully recognized that the maintenance and updating of networks/databases are the two key factors to the success of networks to facilitate infrastructure. For the sustainable operating of networks/databases, the responsible agency in each member economy should be clearly designated and then closely work with the leading economies. Without member economies' participation and support by providing the latest information regarding the macro- and micro-

economic environment for infrastructure investment regularly, the facilitation networks may become a "one-time-shot".

A complete network for infrastructure investment must have the following characteristics.

- Facilitation – users can easily access all information provided.
- Comprehensiveness – the network should try to include all information the private sector needs when considering infrastructure investment in the region.
- Multiple-function – the network provides both static information sharing and dynamic interaction, such as consulting, technical cooperation, and so on.
- Time-effectiveness – the network should be able to regularly update data.
- Technology-oriented – the network should employ new computer technology.

V. Conclusion

The recent Asian financial crisis has been a setback to the region's economic growth. It has also had an adverse impact on infrastructure development, especially in those economies hit strongly by the crisis such as Thailand, South Korea, Indonesia, and Malaysia. Many big infrastructure projects in these member economies have been reported to be suspended or cancelled. To reconstruct its economic health, the Asia-Pacific region has an urgent need for investment from outside funding, particularly the private sector. This reinforces the necessity to establish complete networks to facilitate infrastructure investment as part of the economic development of the Asia-Pacific region.

Since all member economies can benefit from the facilitation networks, the three networks/databases mentioned above, existing already or still in the planning stage, ought to be incorporated and undertaken by the collective efforts of member economies. With collaborating efforts and participation from Canada, Japan, Chinese Taipei and other member economies, a facilitation network covering the wide range of information and best practice areas relevant to the full cycle of infrastructure planning and investment will be possible in the near future.

ASSESSING EXISTING DATABASES ON THE APEC REGION CORE PROGRAMME

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NETWORKS TO FACILITATE INFRASTRUCTURE ASSESSING EXISTING DATABASES ON THE APEC REGION

Foreword

Despite the impact of the Asian economic crisis, a broad consensus exists that the infrastructure requirements of the Asia-Pacific region will be some $1.3 trillion over the next decade. These immense needs far exceed the financial capacity of the public sector and therefore encouraging participation from the private sector in the various infrastructure projects becomes inevitable to ensure successful infrastructure development in the region. Facing the trend towards privatization in infrastructure development, infrastructure-related information should be collected and disseminated to enable potential and interested members of the private sector to be better informed and to manage their investment risks more effectively.

Existing Databases on APEC region

To date many databases have been developed to serve as sources for various aspects of infrastructure-related information on the APEC region. We will review and examine some of existing databases, including ID**2, Infra-Net, BOT Center, etc., and then further explore the future development.

- **Infrastructure Demand Information Database (ID**2)**

  ID**2 is a database set up by Chinese Taipei to compile and present results from the Survey on APEC Infrastructure Demand, which is a Joint Activity undertaken by the Economic Committee of APEC. As ID**2 is aimed at infrastructure demand in relation to medium- and long-term business opportunities in the Asia-Pacific region, only infrastructure projects between 1995 and 2003 worth more than US$40 million are included in the ID**2, with 716 projects reported by 11 APEC member economies in 1997. The aggregate value of all projects reported has reached US$335.2 billion. Today, ID**2 has been updated according to a questionnaire in which member economies reported their responses to the impact of the Asian financial crisis.

- **Infra-Net**

  Parallel to Chinese Taipei's ID**2, there is an Infra-Net program initiated by Japan. The Infra-Net is designed to fully utilize various existing databases and to strengthen the links among them, and aims to provide information on member economies' experience, know-how, policies and concrete projects. Infra-Net is available on the Internet and currently provides links to ID**2, Asian Development Bank, BOT Center, World Bank, and others.

- **Build, Operate, Transfer (BOT) Center**

  The BOT program, also known as the Philippine Infrastructure Privatization Program (PIPP), is conducted by Office of the President in the Republic of the Philippines. The BOT Center principally provides information on Philippine BOT-related infrastructure investment projects and regulations, Philippine Government medium-term priority, directions for infrastructure development, and so on. In addition, the BOT center offers technical assistance to facilitate private investment in infrastructure projects in the Philippines.

- **Other Related Databases or Websites**

  Other infrastructure-related databases are accessible on the Internet, such as Commerce Business Daily (contents mainly include U.S. government procurement invitations, contract awards, and foreign business opportunities), Federal Register (U.S. Federal regulations and laws, proposed rules), Business Week (business information and affairs), World Bank (country and regional information), Asian Development Bank (proposed projects, procurement notices, contact awards), APEC Government Procurement Information (general information on government procurement for individual member economies), APEC Contact Database (trade information, export assistance, trade statistics).

The above review provides a broad picture of the characteristics of some existing databases and provides an indication of some differences among them. For example, the ID**2 provides potential or interested investors not only with medium- and long-term infrastructure investment opportunity but also with a basis for forecasting future infrastructure development trends in the APEC region. The Infra-Net mainly plays the "Yellow Pages" role of providing the means to get the necessary infrastructure-related information. The BOT Center, Commercial Business Daily, and the Federal Register emphasize individual member's infrastructure-related information. Others, such as Business Week, the APEC Contact Database, and the World Bank act as a mechanism for disseminating general information on trade and business.

Suggestions for Future Development

As we might predict, more Infrastructure-related databases on the Asia-Pacific region will be developed in the future. Thus how to combine and integrate these existing and developing databases becomes an important issue. Some suggestions are listed below.

- The development of existing databases should play a more active and aggressive role in disseminating infrastructure-related information to facilitate potential investment. For example, Chinese Taipei initially plans to extend the static content of ID**2 and offer more dynamic service, such as issuing manuals and an annual report, holding an infrastructure conference, developing ID**2 to be a service center, etc.

- Existing databases should be more effectively integrated or hyperlinked. The advantage of integration of existing databases could not only provide complementary

information, but also save time for users when searching for information. For example, users could access the ID**2 through the Infra-Net, and ID**2 could act as an infrastructure-related information resource for Infra-Net. Therefore, the integration of ID**2 and Infra-Net would offer a more convenient interface for users to access information they need.

- The BOT Center, Commerce Business Daily, Federal Register, and other related databases or websites have been developed for providing individual member's necessary infrastructure-related information. We should think about how to further integrate them to serve potential private investors better.

- The initial design plan for an APEC Network of Infrastructure Facilitation Centres proposed by Canada will be reviewed and discussed at this meeting. The establishment of a Network of Infrastructure Facilitation Centres will provide a wide range of services, including the dissemination of infrastructure policies and regulations in APEC member economies, development of training modules and organization of training programs, dispute resolution, etc. This plan also offers an alternative concept to the further development of the existing databases.

Conclusion

ID**2 has been updated according to questionnaires returned in 1998 by member economies, enabling us to offer timely and accurate information to users on the impact of the Asian financial crisis on infrastructure projects in the region. Many thanks for the full support from member economies in setting up ID**2. Chinese Taipei will continue to strengthen its cooperation in the provision of infrastructure information and technology with APEC members and will play an active role in contributing to the development of networks to facilitate infrastructure in the region.

POSSIBLE APPROACHES TO DEVELOPING AN APEC INFRASTRUCTURE FACILITATION NETWORK

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POSSIBLE APPROACHES TO DEVELOPING AN APEC INFRASTRUCTURE FACILITATION NETWORK

Introduction

The APEC Infrastructure Facilitation Network concept attracted considerable interest within APEC during the development of the set of infrastructure initiatives that were put to Ministers and Leaders at their meeting in Vancouver, November 1997. The APEC Economic Committee, through its Infrastructure Workshop, was asked to explore further whether such a Network would indeed be practical and add value to the region.

There is a general consensus on the need for the services that such a Network would provide, or to which it would facilitate access: integrated planning, risk management, financial engineering, environmental design, dispute avoidance/management and information sharing and provision. This message has come clearly from the various Public-Private Sector Infrastructure Dialogues that have been held over the past several years. There is also a clear sense that APEC can play a useful facilitative role. The question is how best to approach this task.

Over the years, APEC has been cautious in avoiding institutional development, reflecting in part its evolution during the emerging age of "virtual" links and interaction. In this particular instance, the difficulties of providing infrastructure facilitation through any particular institution in any city in the region also loom large. Accordingly, preference has been expressed for a network approach, rather than an institutional approach.

In fact, bearing in mind the desire to develop an APEC-wide pooling of information on best practices, infrastructure supply capacities and infrastructure investment opportunities along with the need for explicit linkage back into domestic economies for practical action, a "network of networks" approach suggests itself.

A Network of Networks

Under this approach, a network would be developed at the APEC level, bringing together internationally recognized centers of excellence in various aspects of infrastructure planning, design, development and management (which could include non-government private institutions, university-based think tanks and/or APEC Study Centres).

In turn, networks of similar institutions would be formed at the national level in participating APEC member economies (recognizing the differing requirements for such facilitation across the region, not every APEC member economy would need its own internal network). The individual economy networks, through their links to the APEC-wide network, would have access to the pooled information drawn from around the region; through their knowledge of the particular circumstances of their own economy, they could in turn "interpret" and apply this information most usefully and appropriately.

Self-organization

A number of considerations lead to the conclusion that, to be feasible, the Network will have to self organize.

In the first instance, detailed instructions for such a facilitation network do not exist. Moreover, reflecting the cross-disciplinary nature of the purposes of the network, it is quite likely that such detailed instructions could probably not even be developed, since the necessary information and expertise does not exist in any one place. Rather, the network will have to evolve, much in the same manner that markets evolve, with participants organizing their mutual relationships on the basis of comparative advantage, capacity and interest, and learning by doing.

APEC's role would be to serve as a catalyst, building enthusiasm and "buy-in" for the concept, and to find a core group of volunteers within the region to take the necessary first steps. One way to kick-start the process, would be invite interested centers of excellence to submit proposals setting out how various areas of infrastructure facilitation might be approached. Their interest in participating would have to reflect a perceived self interest in being part of a horizontal network with a “look in” to the Asia Pacific region and into APEC specifically.

This initial group of centers would then be invited to establish horizontal links to establish the core of the APEC Infrastructure Facilitation Network and to consult within their group as to how they might cooperate amongst themselves and with the APEC process. For example, in terms of:

- How to structure their participation in implementation of the Vancouver Framework (e.g., Possibly by putting forward specific implementation proposals for application of APEC central funds to support joint activity in areas such as developing templates of best practices and/or capacity building by training trainers and so forth);
- What the supporting requirements might be (e.g., Internet websites and managed "chat" sites);
- Whether it makes sense to undertake joint initiatives or not;
- Whether to broaden the network by engaging like minded institutes in other economies; and
- Whether to organize a sidesession at one of the regular APEC Economic Committee Infrastructure Roundtables.

The key advantage of a self-organizing virtual network is that there are quite literally almost no fixed costs or sunk start up costs. It is expected that centers of excellence will have the experience in such horizontal links to guide them in developing an effective, low-cost approach.

Conclusion

The general conclusions drawn from the above considerations are:

- Horizontal, multi-disciplinary linkages are required to meet the challenges of infrastructure development in the region.

- APEC-wide networks are required to draw out the state of the art practices.

- Economy-specific networks are also required to interpret and implement these state of the art practices in the context of individual economies.

- Cooperation in this area will by necessity be evolutionary, based on the principles of voluntarism and self-organization, and guided by the experience attained at each stage of the exercise.

REVIEWING PRELIMINARY PROPOSALS FOR FACILITATION NETWORKS

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REVIEWING PRELIMINARY PROPOSALS FOR FACILITATION NETWORKS

As a contribution to the discussion of Networks to Facilitate Infrastructure in the APEC region, I would like to describe a Canadian attempt to increase the supply of environmentally-sound urban infrastructure – through putting the right information into the right people's hands. This effort has led us to develop networks, an experience that might be useful for other economies and for APEC in its own work on infrastructure facilitation.

The "Urban Tsunami" and its implications

Before I get into the description of Canada's initiative, let me reveal a major prejudice of mine: I like cities. A lot of people who are interested in sustainable cities really wish that there were no cities at all. That is not my vision!

Let me list several other "prejudices", which I would then like to address in turn:

- Economies and economics exist within the natural world.
- Cities help economies to achieve sustainable development.
- Urban buildings and infrastructure are perhaps the major tool that economies have to help them achieve sustainable development goals.
- Good infrastructure in a city gives it and the whole economy a competitive advantage.
- Public policy is about addressing the needs of the public; it is about defining where we want to go.

Economies and economics exist within the natural world

We do not really know how "big" our economies are relative to the natural world - that is, to the "carrying capacity" of to the biosphere - but we *do* expect population will nearly double before it stabilizes; and we *do* expect that by 2025, the population will have increased to about 8.5 billion from today's 5.8 billion. So whatever the size of our economies is now compared to carrying capacity of the natural world, it will almost certainly be a lot bigger by then.

Secondly, we know as a matter of common sense that we cannot indefinitely "draw down" capital, natural or otherwise. It is pretty hard to avoid the conclusion that we probably are already drawing down our natural capital.

In Canada, the most obvious example is what has happened to the fisheries - the richest fishing ground in the world, the Grand Banks of Newfoundland, has collapsed to the

point that communities that have been engaged in the fisheries for over 500 years are now prohibited from fishing at all - there are no fish left.

But if I am wrong in asserting that we are already living off our natural capital, we will surely reach that point sometime soon.

Third, just as with capital and labour, we want to maximize the productivity of our "natural capital", which is also a "scarce good", to waste less of it, and to degrade less of it. We cannot continue to treat it as if it were "free".

Cities help economies achieve sustainable development

While environmental problems in cities – especially in megacities – are acute, the characteristics of cities present environmental management opportunities not available to rural communities, including the following:

- Higher residential densities allow economies of scale in provision of infrastructure;
- Relative proximity of services often means that individuals do not need to travel so far to get them;
- Higher average incomes increase the willingness to pay for environmental improvements; and
- Environmental education and public awareness campaigns can be more effective because of higher literacy and better communications.

On this last point, one of the most striking examples is the success of the "reduce, reuse, recycle" campaign. Ordinary citizens have absorbed the lessons, and have incorporated these environmental practices into their everyday lives.

Experts suggest that, of the next 2.7 billion people expected to be added to the world's population in the next 25 years, as much as 90 percent will end up in cities. This is an "urban tsunami" that is coming our way and we can choose to "surf" it or be inundated. In other words, cities are increasingly becoming the crucial agents of sustainable development:

- It is actions taken in cities that will determine whether we meet the climate change goals agreed to in Kyoto; and
- Given that cities currently are responsible for approximately 70 percent of the pollution that goes into our oceans, it is action taken in cities that will determine success in the efforts to clean up the oceans.

Thus, to a considerable degree, our ability to achieve sustainable development depends on our ability to "get cities right".

Urban buildings and infrastructure are perhaps the major tool that economies have to help them achieve sustainable development goals.

Infrastructure can, in addition to so much else, reduce the per capita "through-put" of the natural world for a given productive output. That is good. That is what should be aimed for. Infrastructure that suits human needs and wise aspirations.

Decisions made today about infrastructure will endure for up to 30 years - for better, or, for worse. These decisions will affect the amount of traffic; the amount of energy consumed; the quantity of carbon dioxide released; and so forth.

Not only can decisions be bad - economically and environmentally - but the huge costs of infrastructure facilities means that governments will not want to replace them, and, indeed, are likely to base later infrastructure decisions on earlier infrastructure decisions. Bad infrastructure choices perpetuate themselves.

If we can get urban infrastructure right the first time, we have gone a very long way to leaving a positive legacy for our children.

Good infrastructure in a city gives it and the economy a competitive advantage

First, the economic impacts of pollution, in terms of loss of productivity and health costs in urban areas, are huge. The World Bank looked at this issue and estimated that the costs directly attributable to pollution range between 1 percent and 5 percent of cities' or regions' GDP. That is a huge amount, and it does not take into account non-quantifiable impacts of pollution, such as ill health, loss of amenities ("amenities" being "economist-speak" for concepts such as beauty!!), and so forth.

Good environmental infrastructure helps the bottom line by decreasing this productivity loss caused by pollution. So, when calculating the cost of urban environmental infrastructure - of good city planning - we all would do well to think about the costs of business as usual. As I said, perhaps 5 percent of a city's GDP!

Second, as a result of the impact of external influences (globalization, information technologies; market-based decision-making), *cities are now competing with each other*, and some will do better than others. If they are well managed and clean, cities can be productive and provide a high quality of life for their residents. If not, quality of life and productivity will be adversely affected, and businesses and entrepreneurs of all sorts may choose to set up elsewhere - in a city in economy "X" instead of economy "Y". Good environmental infrastructure is good for business.

Public policy is about addressing the needs of the public; it is about defining where we want to go

You will excuse a former politician for believing that politics matters and that it is more than just business facilitation that counts! I think that we have to go beyond talking about efficiency and market forces - these are crucial, but neither tells us *where* to go; they tell us *how to get there.* This point was made last year at the APEC Public-Private Sector Dialogue on Infrastructure in Los Cabos, Mexico, where it was said: "It is very important that infrastructure projects in and of themselves not be regarded as *representing* development, but as *supporting* broader economic development."

Infrastructure is a tool. We must fashion infrastructure plans in a context of long-term integrated planning of social and economic development. The first challenge is to make sure that we know about, and are asking for, the tools that will take us to where we want to be. The second challenge is to actually get that infrastructure: who can provide it? Can we get it on reasonable financial terms? And so forth.

The network that I will now describe is how we in Canada are trying to link these two elements of the infrastructure puzzle: who in Canada is working on the "what" that is needed?

Sustainable cities network

I would like to discuss the work that we are doing in Canada on sustainable cities network:

- First, by going over the "why?" - we have found that our urban experts and our business people have been like islands, existing in splendid isolation from one;
- Second, by going over the "how?":
  - Yellow pages (who are the "suppliers");
  - Classified ads (where are the opportunities);
  - Maps (where globally are canadians active in cities); and
- Next steps (criteria, priorities and money)

The "Why?": our urban experts and our business people have been like islands, existing in splendid isolation from one another

Some of you may be aware of Team Canada missions: our Prime Minister, together with Ministers, Provincial leaders and a host of business people, travel to a particular region. The politicians open the doors to decision makers, and the business people close the deals. In fact, I was perhaps the first person to argue that we needed to put these Team Canada missions together back in December of 1993.

However, the Team Canada missions are the exception in Canada: there really is no "Canada Inc."

In terms of sustainable cities, we have enormous reservoirs of talent - in not-for-profit institutions, in municipal organizations, in our universities and our institutes - people who have been working for years "in the field" and who know a lot about what the needs and priorities of cities around the world are. And we have a lot of business expertise in Canada: people with excellent "niche" products, and also companies that rank with the largest in the world - the Bombardier's, the SNC Lavalin's, the AGRA's and others.

However, we have lacked the bridges between these islands of talent, a way for all the groups working on municipal governance and institutional strengthening, on creating master plans, on community environmental projects, to know what their counterparts were doing, and where. We also have lacked bridges between these groups' experiences and the business community. We felt that without these bridges, it was less likely that

business solutions to urban problems would be as tailored as they might be to the specific cities' special needs and priorities.

That is the "why". We wanted Canadians to play a meaningful role in putting in place first rate environmental infrastructure, tailored to the educated demand of cities around the world.

In order for us to put infrastructure in a *sustainable* city context, we had to find a connecting mechanism between our urban and our business experts.

The "how": yellow pages, classified ads; and maps

Last year at Los Cabos, people talked about the kinds of information needed in terms of the type of information to be found in "yellow pages" versus in "classified ads" Information of the "yellow pages" variety is information on infrastructure suppliers and related services. Information of the "classified ads" variety is information on infrastructure opportunities.

This is a good description of what we at the National Round Table on the Environment and the Economy in Canada have tried to do with our project, though our project is both a little bit more and a little bit less than what was discussed at Los Cabos.

It is a little bit "more" because we did not limit our sustainable cities yellow pages to just infrastructure suppliers and related services; we made a point to include all the people with expertise in municipal policy-making; in urban environmental issues. This is because of our strong belief in the need for integrated solutions, our strong belief that sound infrastructure choices need to be grounded in sound public policy, and our belief that bridges need to be built.

It is a little bit "less" because we did not go as far as what is suggested by the classified ads analogy. That seemed like a logical thing to do because information on infrastructure opportunities is often competitively sensitive and there are whole groups within a number of government departments, and in the boardrooms of our companies, that are looking to find it

Our version of the classified ads is really something more along the lines of a map, where we are trying to show less where the infrastructure opportunities are and more where are there opportunities for cooperation between the "public policy" side and the "business" side of the equation: In what cities are both of these groups present and active? Can they benefit from each others' respective skills? Can they be providers of what we call "sustainable cities solutions" that make everybody better off?

Next steps:

Criteria

Because we are really focussing on infrastructure for sustainable cities, we had to come up with sensible criteria for what is to be included in our "yellow pages". Knowing what

is "in" and what is "out" is sometimes very easy (at least on the surface), but in other cases, inherently difficult. In approaching this task, we had to balance two basic truths:

- The perfect is the enemy of the good - we should not strive for perfect criteria, or else we will never get anywhere;
- The rotten apple spoils the barrel - our credibility is on the line and we must be able to deliver on what we say we can deliver.

Priorities

Hard as it is for me to say it, we had to acknowledge to ourselves that we, in Canada, could not do everything well, and that we could not be everywhere at the same time. Accordingly, we had to identify geographic and sectoral focus. This is an aspect of the "classified ads" side of our project.

We are going to take the information that we already have about where Canadian not-for-profit institutions, municipal organizations, and businesses already are, and correlate that with information about cities' environmental priorities. Which are the cities that have a commitment to environmental progress? Which are the cities whose environmental needs correspond with Canadian expertise? And so forth.

Money

We know that one of the major constraints on cities putting in place sound urban environmental infrastructure is financing. The Asian Development Bank has estimated that the urban infrastructure needs of the developing economies in East Asia will be in the neighbourhood of about US$150-$300 billion a year for 10 years. That kind of money is not going to come from public purses!! And, as we all know, funds from the International Financial Institutions (IFIs) are expected to diminish markedly relative to private funds.

Consider the following figures:

- Total long-term capital flows to developing economies ballooned from US$100 billion in 1990 to almost US$850 billion in 1996;
- In 1990, official development finance (grants, loans from export credit agencies and ifis combined) represented 56 percent of total flow; by 1996, this share dropped to only 14 percent of total flow, a trend that is expected to continue.

Accordingly, we are trying to answer the following questions: What financing avenues are there for the provision of integrated urban infrastructure? How can we make best use of the public funds that are available? Can we see if there are impediments to increased Canadian private sector finance? This enquiry will take place over the next 4-6 months.

Conclusion

Let me review the conclusions that flow from this discussion.

Cities are the key to addressing the sustainable development challenge of the next 25 years

If we get cities right, we will have gone a very long way to meeting our sustainable development goals.

The assets that cities have - concentrated population, the expertise that resides there, the level of education and concern - all of these make “sustainable cities” a realistic goal.

Urban infrastructure and buildings is the best place to start - but to put sustainable urban infrastructure in place will involve close collaboration and exchange of experiences between the public and private sectors.

Creating a network that links the public and private sectors, and the identification of priority cities and sectors is, in the view of Canada’s National Round Table on the Environment and the Economy, a critical first step.

OTHER PAPERS

PRIVATE INFRASTRUCTURE INVESTMENT IN EAST ASIA: THE IMPACT OF RECENT DEVELOPMENTS

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PRIVATE INFRASTRUCTURE INVESTMENT IN EAST ASIA: THE IMPACT OF RECENT DEVELOPMENTS

Introduction

Infrastructure investments involve long-term commitment and perspective. Demand for infrastructure as well returns on it are determined by the long-term economic needs and trends. Therefore, to assess the impact of the financial turmoil on East Asia's overall investment needs for infrastructure requirements as well as on the likely sources of financing, an analysis of the economic fundamentals and the long-term economic prospects is needed.

While financial turmoil is leading to economic slowdown in many countries and to a more careful assessment of mega projects, as well as short-term cut backs in some countries, overall demand is projected to remain high during the next decade. At the same time, recent events have vividly highlighted the need for investors to carefully assess the economic soundness of projects and their associated risks, as well as to differentiate more between economies by evaluating their overall economic policies and prospects. The recent events may also yield new opportunities for long-term private investors as: governments will have even fewer resources to invest in infrastructure; many governments are likely to be more willing to undertake the reforms needed to create a more conducive environment for private business and to help generate many more bankable projects; long-term investors are less likely to encounter cut-throat competition; and the current financial squeeze is likely to create opportunities to invest in existing or partially completed quality assets.

Economic Record and Prospects of the Region

In looking to the future, it is useful to keep in view past economic history. For the past twenty-five years, East Asia has been the fastest growing region in the world. Its *per capita* income grew 5.3% per annum, more than twice the world average and almost three times the growth rate achieved by Latin America, South Asia or the Middle East. Private capital flows boomed and in 1996 East Asia attracted over half of all private investment flows to the developing countries. The region tripled its share of world trade from 2.8% in 1970 to 8.4% in 1994, as its exports increased eight fold. Poverty has been reduced dramatically in much of the region and key social indicators have shown significant improvement.

The past strong economic performance of East Asia has stemmed from sound fundamentals, and is not the result of a miracle! Among these sound fundamentals, the following are cited in economic studies by the World Bank, the Asian Development Bank, the Harvard Institute for International Development and other researchers:

- Effective and prudent macro-economic policies, including fiscal, monetary, exchange rate, and interest rate policies that yielded good macro balances and low inflation

- Highest domestic savings rates in the world, with a regional average savings rate of about 35% and investment rate of about 37% in the mid 1990s
- Export orientation and rapid integration into the global economy; East Asia has some of the most open economies amongst the developing countries
- Entrepreneurial societies with a friendly attitude towards the private sector, both domestic and international
- Skilled, hardworking and low-cost labor

Notwithstanding this past impressive and real success, and in some ways because of it, the recent financial turmoil has revealed some serious problems in the Asian economies: over-investment, particularly by the private sector based on short-term foreign borrowings often with implicit government support; under-developed and under-regulated financial systems; over-extended corporate sectors; poor social safety nets; and, more generally, an inability to respond rapidly enough to changing market conditions in a more globalized economy driven by private capital flows. These problems must be taken seriously and tackled head-on.

Clearly, the problems in Indonesia, Korea and Thailand are the most serious and will require painful adjustment over a number of years. Elsewhere too, the financial crisis in the regional financial markets has brought to the surface, in a very dramatic manner, the underlying stresses and strains that had been building up over time as a result of both the furious growth these economies have enjoyed over the past twenty five years and their recent success in attracting large capital flows.

Indeed, the financial crisis could even be seen as a useful "wake up" call–one that has reminded everyone that: the Asian economies were not on auto-pilot, their high growth and economic success were not preordained to continue forever; that increasing globalization and reliance on international financial markets, while highly beneficial, also makes it more critical to maintain sound economic policies on a continuous basis; and that skillful policy management is absolutely essential to economic success.

The silver lining of the recent events is that it may help eliminate the over-confidence that had developed in the region, which led both governments and the private sector to ignore the emerging problems, to over-invest, and to underplay the risks. They are already spurring a new series of reforms, a return to prudent policies, and to the cancellation of uneconomic or premature investments.

At the same time, markets must not over-react to the current events. The fact is that many of the sound economic fundamentals that fueled the East Asian success in the last 25 years are essentially still in place in most economies and provide a good base for future prospects: the world's highest savings rates; generally sound macro-economic policies (including low fiscal deficits, prudent monetary policies, flexible exchange rates and real interest rates); continued (even accelerating) opening to the world markets and strong export performance; a large private sector; a good skills base and a disciplined labor force; relatively small governments; and, perhaps most of all, a very hardworking and entrepreneurial people.

As a result, and barring unexpected further problems in the world economy, it should be possible for most South East Asian countries to regain the confidence of the markets in the coming years by taking the necessary tough action in problem areas quickly and in a decisive manner. Indeed, the Philippines has already demonstrated that by being proactive economies can indeed avoid market over-reactions of the kind faced by Korea, Indonesia and Thailand. As governments take the needed actions, strong economic fundamentals should reassert themselves and market confidence return. There are some signs that as a result of decisive actions by the new governments the situation is starting to turn around in Korea and Thailand faster than could have been predicted just a few months ago. At the same time, the mounting crisis in Indonesia illustrates the dire consequences of losing market confidence due to a lack of credibility. Today, the biggest challenge facing the international community is how to help restore the Indonesian economy while making sure that problems there do not lead to another round of financial contagion in Asia or elsewhere.

On the positive side, throughout the current crisis, the largest developing economy in the region–China–has been affected only modestly. China has announced bold steps to address some of the structural problems that have needed attention for some time. Most economic analysts expect China to escape the current crisis and continue to show solid growth in the coming years. The Philippines has also so far escaped major set-backs due to the contagion by proactively announcing important reforms.

As mentioned, a new wave of fundamental reforms is being spurred by the recent events in the region. This in turn is expected to restore economic growth rates in most countries, after a period of consolidation during the next two to three years (Indonesia remains the most uncertain and worrying at this time). When combined with the 6-8% growth expected in China, the overall growth rates now expected for the Asia region, while lower than those experienced in the past two decades, are still likely to be in the range of 4-6%, which is quite respectable by world standards. They are also likely to be more sustainable over the longer term.

I. Infrastructure Investment Requirements

Infrastructure development remains of critical importance for the economies to: regain and sustain high economic growth, improve the social/living standards of their people, and remove the bottlenecks to international commerce and investment. Political leaders and economic policy makers throughout the region recognize that the lack of adequate infrastructure has become a major political, social and economic issue that must be tackled quickly. The current financial crisis and the resultant economic slowdown provides useful breathing room to eliminate the current major bottlenecks but it will not last for long. As economic growth resumes additional demand for infrastructure capacity will become urgent again, even in economies like Korea, Thailand and Indonesia.

The World Bank estimates in late 1995 indicated that the infrastructure investment needs of developing East Asia could range between US$1.2–1.5 trillion over the next decade. The upper end of the estimates assumed an average economic growth rate of 7-8% for the region as a whole, while the lower estimates were based on a 5-6% growth rate

assumption. As indicated above, the current expectation is that, after a temporary drop in economic growth for a few years (including perhaps negative growth this year in Thailand, Indonesia and Korea), the region should achieve an average economic growth of 4 to 6%. This in turn means that infrastructure investment requirements are likely to be closer to US$1.0–1.2 trillion during the next decade. While significantly lower than the earlier expectations, they still remain very high relative to the resources available to the region.

These overall reductions in investment requirements will have a different impact on individual economies depending on their economic growth prospects and financial situation. Overall demand in China is largely unaffected. Actually, the actual economic growth in China in the last three years has been somewhat higher than was assumed in the World Bank estimates in 1996. In the last few weeks, China has announced its desire to substantially increase infrastructure investments to spur domestic demand. While it is not clear how this increase can be funded, these announcements suggest that demand in China is unlikely to be much lower than our previous estimates. On the down side, infrastructure investments in Korea, Indonesia, Thailand and Malaysia during the next two or three years are likely to be sharply lower than earlier estimates; this will lead to a downward revision of overall investment requirements there for the next decade as a whole.

The recent developments will also have a differential impact by sectors. Because of the slower economic growth expected in economies like Thailand, Korea and Indonesia for the next few years, there will be delays in a significant number of large power generation projects, as demand for power is highly sensitive to future economic growth. Throughout the region, because of pressures to reduce fiscal expenditures, there will be cutbacks in publicly sponsored projects overall, and in the mega-projects specifically, in the next few years. On the other hand, economically-sound projects related to urban services (e.g. urban transport, water supply, and sanitation) and those telecommunications and transport projects (airports, ports) needed to support international trade and investment are likely to be less affected. Their timing will be determined primarily by supply-side factors, primarily availability of financing.

Timing of most private sector funded projects (other than the mega-projects whose economic justification was weak or has weakened due to the economic slowdown) will be dependent mainly on their ability to raise funds from the market and not on demand constraints. Clearly, in the immediate aftermath of the crisis last year, the financial closing of many projects has been delayed because of the market's nervousness about the economic prospects and creditworthiness of economies most affected by the contagion. Even where funds may be available, the costs have risen leading the sponsors to wait until calm has returned. However, for economically sound projects these delays are likely to be temporary though even some of these projects may need scaling back to reduce risk.

Overall, the need to increase the private sector share of infrastructure investments is likely to become both greater and more urgent. Particularly in the next few years, governments throughout the region will have even fewer resources to invest in infrastructure as they put their fiscal houses in order and concentrate on cooling off their

overheated economies, while simultaneously tackling the problems of their financial sectors. As a result, economies will have to rely even more on the private sector to finance urgent investments in infrastructure. This should encourage a greater willingness within economies to undertake the reforms needed to facilitate private investment by reducing the risks and increasing financial profitability thus creating many more bankable projects that can be financed by the markets.

A major difference from the recent past will be that lenders will much more carefully review both the basic economic justification for, and the risks of, projects; better balance currency obligations with revenue streams; and avoid over-design or premature timing. Mega-projects or large capacity expansion whose justification is highly sensitive to even modest changes in the longer term economic growth rate projections will require special scrutiny, as should projects which are highly leveraged or involve a significant amount of foreign debt without access to matching revenues in foreign currency.

II. Areas for Priority Actions by the APEC Economies

To meet the above challenges, economic leaders in the emerging APEC economies may wish to consider actions in four priority areas in order to meet the urgent infrastructure needs of their people and business community:

- Reassess the demand and supply balance for major infrastructure services for the next ten years in the light of recent developments, in order to provide the necessary information to both policy makers and investors,
- Make the urgent policy, regulatory, legal, and institutional reforms needed to increase the bankability of projects and increase private sector share,
- Accelerate the development of domestic capital markets; and
- Identify transitional measures needed to restore private sector confidence at the earliest possible date to counteract the setbacks of the past year.

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