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CONSTRUCTION AND ENGINEERING SERVICES

Note by the Secretariat

I. Introduction

1. International activities in the construction services sector comprise the sale and supply, on site or from abroad, of both professional services (drawings, blueprints, project supervision) as well as finished goods and services, including construction implementation services (i.e., construction per se), materials and equipment. Technological know-how, financial resources as well as skilled personnel, semi-skilled and unskilled labour are important inputs into construction services. Trade may be defined as either covering or excluding construction per se, depending on the characteristics of a project and on who is supplying on site construction.

2. While construction services contribute significantly to the GDP of many countries, exports do not normally represent the bulk of total construction activity. This derives from the fact that the greater part of construction projects are small-scale (e.g. private residential building) and are awarded to domestic companies either because local competence is generally available and/or because of existing practices (e.g. government procurement) governing business in the sector. International construction services typically relate to large-scale projects (such as airports, petrochemical processing plants) and are often undertaken by specialised contractors.

3. International trade in construction services has expanded since World War II as transportation and communication services have greatly improved. Further, the economic development of some developing countries stimulated demand for international expertise in the industry. By the second half of the seventies, some developing countries would in turn become suppliers of construction services to, in particular, oil-exporting countries. Most trade in construction services involves firms from developed countries engaged in activities in developing countries (often on the basis of government contracts), though firms from individual developing countries have also begun to play a significant role as exporters¹. Moreover, trade among developed countries has recently been expanding, reflecting to some degree efforts by firms to penetrate important markets on a permanent basis.

¹See the Annex tables for the value of trade and market shares in construction (from 1980 to 1987) and for design services (from 1983 to 1987).

Trade among developed countries remains limited, however, reflecting among other things the high level of expertise and capacity available in these countries.

II. Activities

4. Two main types of service activities correspond to the different phases of the construction process: construction services as distinct from engineering/design services (henceforth, CES).² As such, the industry comprises services activities which represent important inputs from the conception to the conclusion of construction projects including operations and maintenance. The two broad components of CES often overlap and can be provided individually or grouped in firms that are integrated or autonomous. These firms can be state-owned or private, and may engage in both construction and design or specialise in one or the other. CES projects bring together skilled and unskilled labour and personnel, materials and equipment. CES projects undertaken by firms include new projects as well as the renovation or repair of existing buildings or facilities.

(a) Engineering design services

5. Engineering design services are closely related to the conception of a construction project, involving essential activities needed to optimise investments. These activities, encompassing both architectural and engineering inputs, include project feasibility studies, ranging from economic analysis to environmental impact assessments; conceptual design, relating to appearance as well as function; cost estimations; engineering, including site planning, structural analysis and design (foundations, calculations of loads and strength), heating for buildings, ventilation and air-conditioning, other building systems (such as electrical power); and preparation of detailed drawings and specifications to guide construction.

6. Design services typically draw on the expertise of skilled engineers making decisions on technical matters relating to construction while

²As indicated in the Reference list of sectors contained in document MTN.GNS/W/50, the construction sector comprises two types of services - namely, those involving professional expertise ("professional services" in the document) and the actual implementation of a construction project ("construction services" in the document). Whereas the items site preparation, new constructions, installation and assembly work, building completion and maintenance and repair of fixed structures which appear in the document under "construction services" correspond to the construction implementation phase of the construction process, the items described as advisory and consultative engineering services, industrial engineering, engineering design services and project management services which appear under "professional services" correspond to the engineering/design phase of the construction process.

economists and accountants prepare private and social cost-benefit analyses and ecologists assess environmental aspects.

(b) Construction services

7. Construction services are those which make physical construction possible. These services are therefore ancillary to structural projects including residential, non-residential and industrial buildings as well as to the building of utility facilities (e.g. transmission lines and power plants), transportation facilities (e.g. roads, bridges, and airports), and public work facilities (e.g. water and sewage systems). Generally, construction services involve activities relating to financing, procurement of supplies, mobilisation of labour and equipment as well as management of projects. Although often requiring specialised skills, construction services also rely heavily on unskilled and semi-skilled labour.

(c) Contracting

8. An important feature of activities in the CES sector is that much of the work is executed through contracting. There are four main stages where contracting can be undertaken: feasibility studies, design and engineering, construction and start-up (including operations and maintenance). The relative importance of each of these stages can vary considerably. Feasibility studies, for example, can account for 1 percent of the overall project cost whereas the design and engineering stage can reach 10 percent.

9. Contracts normally take one of two main forms: design-bid-build and design-construct. In the former case, design and building each require a separate contract so that after the initial feasibility studies, the bidding process is re-opened. Bids on the construction work, however, generally result from the specifications developed in the design phase. In design-construct contractual relationships, the intermediate bidding stage is eliminated. In such cases, one contract covers the entire project, including design, engineering, construction, and in some cases, the installation of equipment and operations as well as maintenance.

III. Forms of trade

10. International trade in CES is essentially a cross-border activity which involves the temporary relocation of both persons and imported equipment or capital goods to the extent that they are mobile. In general, companies do not always find that local establishment is necessary for construction services to be offered. Whether full establishment is needed in a particular market (e.g. in the form of subsidiary) depends on whether the firm is involved on a continuing basis or whether local regulation requires such establishment as a pre-condition for operation. Setting up a subsidiary may be costly for foreign construction firms and foreign contractors tend to dislike regulations which oblige them to establish locally. Requirements also come in the form of an obligation to act through a local representative, perhaps in conjunction with a local partner or with minimum equity participation on the part of local entrepreneurs.

11. Long-term capital mobility, with the possible exception of export finance, is of limited importance because, as noted above, CES firms do not normally require long-term local presence to operate in foreign markets. Where there have been cases of permanent activities abroad, this has rarely - if ever - involved the long-term movement of unskilled workers. In general, restrictions on the mobility of personnel tend to be less severe the higher the skill level. Those CES firms which do establish abroad are normally allowed to import a limited number of highly qualified staff (for example, executive management, engineers, architects and consultants).

IV. Motivation and objectives for rules and regulations

12. The motivations and objectives underlying rules, regulations and practices in the CES sector are varied, reflecting both the far-reaching role that the sector plays in most economies as well as the diversity of transactions and activities which characterise construction and engineering service projects. Policy measures are both regulatory and non-regulatory in nature. Whereas some measures figure in the official regulatory framework of certain countries, informal understandings are often quite significant; government procurement is perhaps the most prominent example in the CES sector.

13. An important motivation for many regulations applying to CES activities is to strengthen and promote the competitiveness of domestic firms. This may be accomplished in domestic markets through the exclusion of foreign bidders, or in a foreign market through the subsidisation of national firms competing abroad. The goal of promoting national firms derives from the perception of the key role which the CES sector may play in national economic development, and the desire to have construction and engineering comply as much as possible with local requirements.

14. Governments provide incentives not only for existing CES firms but also for the development of new firms. The rationale for such action derives also from the perception of the positive externalities which the development and use of local engineering and construction capabilities can generate for the economy, and of the linkages to other parts of the economy via increased sales of locally-produced equipment, increased employment possibilities and a favourable impact on the balance of payments of an internationally competitive CES sector.

15. In general firms from developing countries have only a limited access to international capital markets and may therefore be unable at times to match the financial packages offered by their developed country counterparts. The policy which may result is subsidisation on the part of such governments in the form of officially supported export credits. Such practices, however, are prevalent in developed and developing countries alike.

16. Considering the large scale of most international CES projects, governments may implement policies with a view to maintaining stability in the balance of payments. Such measures usually apply to other sectors but can have a decisive effect on the operating conditions facing foreign CES firms.

17. With respect to the movement of persons involved in CES activities, regulations may ultimately reflect social attitudes and political realities regarding the presence of foreign persons within national borders. The regulation of personnel and labour mobility may be motivated by concerns of increased foreign presence and the effects of this presence on the local labour market.

V. Norms and regulations

(a) Measures relating to market access

18. Preference for both private and public national CES providers is a common practice in the sector. Government procurement is widespread in the sector, and CES purchased by the government may account for the bulk of the market in some countries. Government procurement may operate officially through national laws and regulations; it may also relate to less official contract procedures and practices. In some countries, contracts offered by governments, regional authorities and enterprises with public participation are automatically granted to national firms. Engineering works and sales of capital goods may also be reserved for local companies. Provisions in government contracts which reveal preferences for national bidders may include, for example, clauses granting a preferential margin on the total value of domestic contracts, clauses granting advantages to national providers in the purchase of material and equipment as well as clauses linking the provision of certain services to the fulfilment of specific socio-economic objectives. Such socio-economic objectives in turn may include the development of local technological capabilities and employment creation. Examples of measures directed to these objectives include reserving the construction implementation phase of a CES project for national firms, requiring that all related insurance be undertaken with domestic insurance companies, reserving related cargo to national shipping lines and requiring the provision of advantageous financial packages from foreign providers.

19. Procedures and practices in government procurement relating to national bidding vary from country to country and the country specific procedures may not be well publicised. Difficulties which foreign CES providers encounter with respect to bidding include restricted access to tender documentation, difficulty in preserving confidentiality once information is provided to government sources and slow pre-qualifying and project approval procedures.

20. Domestic firms may favour other national firms through "gentlemen's agreements" which may restrict foreign competition. In some cases, construction companies may finance the work of consultants and engineering firms with a view to benefiting from cost advantages when setting their own tenders for the same project. Also, there may be collusion among bidders through the tendering of joint and share-out contracts among selected companies.

21. Licensing and registration requirements are common for CES activities. The authorisation or registration can relate to many aspects of the sector; registration can be time-consuming and licensing at times requires special linguistic and technical knowledge. Conditions relating to the granting of

authorisations may include the obligation to establish and accept local majority control and/or invest in the activity in which the CES project is taking place.

22. Local content requirements may be adopted by importing countries to assure that a predetermined share of goods and services involved in a particular project are of local origin. To the extent that CES firms may have to rely on special equipment and tools to complete projects (such as specialised electrical equipment, technical architectural plans and spare parts), this requirement can present difficulties, particularly if local content is accompanied by import restrictions on other physical inputs. In the case of services, local content provisions often relate to personnel and may be made operational through restrictions on visas and work permits. In addition, engineering activities may be required to be performed by national engineers as the qualifications of foreign consultants may not be recognised.

23. Technical standards may apply to both goods (e.g. materials and components utilised in construction engineering) and services (e.g. architectural services). Technical standards are not always sufficiently publicised and are subject to change. Meeting local standards might require the assistance of local consultants.

24. Exchange controls and restrictions of a general nature on the transfer of funds are prominent in some countries, particularly in the CES sector. These may involve the non-approval of applications for foreign exchange as well as limits on profit repatriation. On a more informal level, procedures which delay the granting of authorisation for the conversion of currencies may be relevant.

(b) Measures relating to public assistance

25. CES are frequently provided by companies which have considerable equity participation on the part of the state. This creates scope for the government to influence the nature and extent of competition in the sector. As mentioned earlier, it is not uncommon for governments to subsidise national firms in domestic and third country markets.

26. Domestic subsidies may include direct financial aid, tax incentives or the provision of credits on favourable terms. Due to the importance of capital goods to the services activities, subsidies affecting the purchases of such goods can also affect competition in the construction and engineering services markets. Subsidisation of research and development costs, particularly of domestic firms, is also a common practice in the sector.

27. Export subsidies may be extended for both goods and services and may include export credits for feasibility studies, government guarantees covering risk of unsuccessful tendering, export credits for financing the operational costs of a particular project, public guarantees for private bank loans, tax subsidies (exemptions on export sales and tax holidays) and public risk-sharing, including the guarantee of a percentage of the

contractor's profit. Aid may also be tied to the requirement of employing consultants who are nationals of the donor country.

(c) Measures relating to taxation

28. Taxation measures applying to the CES sector vary widely from country to country and relate both to trade in goods and services as well as to the conditions affecting the undertaking of business activities in foreign markets. There can be discrimination in tax matters deriving from an attempt to tap foreign investment and profits as a means to increase the national tax base. Measures may also aim for profits to be re-invested locally.

29. The following are examples of taxation measures which are discriminatory in nature: minimal tax relief for foreign firms, non-deductibility of payments by local firms to foreign consultants, and higher levels of income tax for expatriate staff. Double taxation is relevant in the following situations: administrative expenditures incurred by foreign consultants in their home countries being non-deductible, the payment of local social insurance contributions even if coverage exists in the home country, all foreign remittances being taxed as profits and fees for technical services provided abroad being taxed in the purchasing country despite taxation in the country of the provider.

(d) Measures relating to the mobility of persons

30. Regulations relating to the movement of persons involve immigration formalities and may render the process of operating in the host country difficult. For example, the granting of visas may be for periods of insufficient duration for technical personnel to complete their tasks; obtaining permits may be delayed as the local client has to prove that no domestic firm is able to provide the necessary services; selective restrictions may be applied according to the degree of professional qualification; and immigration authorities may set quotas for expatriate specialist staff which foreign firms may employ.

31. Work practices adversely affecting the presence of foreign skilled personnel and unskilled labour abroad include the lack of guarantees that remuneration received can be remitted to the country of origin, difficulties in dismissing local staff, inadequate access to national education and health services and social attitudes leading to discrimination on the basis of nationality, race, sex or religion.

VI. Considerations relating to the application of certain concepts and principles

(a) Market access

32. As provided in MTN.TNC/11, market access is a concept that, consistent with other provisions of the multilateral framework, and in accordance with the definition of trade in services, may involve foreign services being supplied according to the preferred mode of delivery. CES may be marketed abroad via cross-border trade (where trade would be limited to the

transmission of plans, drawings, etc.) or through the movement of factors of production. Among the laws and regulations applying to CES, those that may be of relevance include:

- (i) access to the supply of relevant services activities in the local market by a foreign CES firm;
- (ii) the presence or establishment of foreign CES providers where local establishment is perceived to be crucial in order to be competitive in the provision of CES;
- (iii) the obligation to establish when this is required by the host government; and
- (iv) the physical mobility of persons where this is crucial for the delivery of a service.

(b) Transparency

33. Some of the practices which apply in the CES sector (e.g. preferences for local service providers, government procurement, administrative discretion) do not form part of the official laws and regulations. This varies from country to country; certain operations may be regulated in one country while they may be the object of administrative guidance or unofficial practices in another.

34. Considerations concerning transparency could arise in the context of qualification requirements and technical standards which lack specificity or are vague as regards implementation procedures. This applies equally to government procurement, subsidies and discriminatory taxation.

(c) Most-favoured-nation treatment/non-discrimination

35. Due to the characteristics of the international CES market, major shifts in trading patterns may not necessarily take place if rules and practices were applied on an m.f.n. and non-discriminatory basis as between supplying countries. The exception is where firms can claim some unique expertise and/or are denied access on a discriminatory basis for any of the reasons described above. Contrary to some other services sectors, reciprocity clauses are rare in the sector. CES contracts may, however, be negotiated on an ad hoc government-to-government basis; in addition, there are bilateral free-trade agreements with implications for architects along with other professions.

(d) National treatment

36. Many of the regulations applying to the CES sector have a discriminatory effect as between local and foreign providers. This may apply in particular to subsidisation, local content provisions, local personnel recruitment and government procurement.

37. The application of national treatment to CES could ultimately imply the elimination of discrimination between foreign and national services providers. As with other concepts, national treatment could potentially apply to both regulations and administrative practices which embody any discrimination in terms of special conditions for the provision of services by foreign firms, including the following:

- (i) Regulations and administrative practices relating to the operations of a CES firm the presence of which is only temporary in the relevant market.
- (ii) Regulations and administrative practices relating to the operations of a CES firm permanently established in a foreign market.

38. National treatment is closely linked to the application of market access provisions since granting to foreign services and services providers treatment no less favourable than to national firms may be a way to ensure access to a market for these services and services providers.

(e) Progressive liberalisation

39. As set out in MTN.TNC/11, the provision is for progressive liberalisation on the part of governments, taking due account of the national policy objectives of laws and regulations and the level of development of individual signatories. For the CES sector this could imply consideration of those types of activities and/or transactions, as well as the forms of trade or modes of delivery, which could be made subject to liberalisation commitments in this sector. There is, of course a close link to other concepts, such as market access, m.f.n./non-discrimination, national treatment and transparency.

(f) Increasing Participation of Developing Countries

40. MTN.TNC/11 sets out that the multilateral framework should provide for the increasing participation of developing countries in world trade and for the expansion of their service exports, including, inter-alia, through the "strengthening of their domestic services capacity" as well as provisions which would "facilitate effective market access for services exports of developing countries". Considerations which relate to the strengthening of domestic CES capacity may include the development of local expertise and conditions to assist in attaining development policy objectives. For example, foreign expertise could contribute to the upgrading of domestic CES capacity. This could be achieved, inter alia, through an optimum utilisation of local inputs while relying initially on external sources for technological know-how.

41. Information on market possibilities could also be enhanced to facilitate effective market access for developing country exports of CES.

(g) Safeguards and exceptions

42. National security considerations may be relevant through the reservation of certain CES projects for local contractors. Balance-of-payments measures might also be pertinent at times of foreign exchange shortage which could impede or complicate the execution of certain CES projects.

(h) Regulatory situation

43. Regulations in the CES sector reflect concerns relating to competition laws, environmental considerations and health and safety protection, which find their expression in building codes, technical standards and procurement practices which may affect construction and engineering firms, both domestic and foreign.

ANNEX

As can be seen from Table I, the value of world construction exports amounted to \$ 73.9 billion in 1987. This confirmed a declining trend since the peak of \$ 134 billion in 1981. Between 1981 and 1984, the value of contracts declined by 40 percent, recovering by 1.4 percent during 1984-85. The market declined by a further 9.4 percent between 1985 and 1987.

Firms from the United States, France, the Federal Republic of Germany, Italy, the United Kingdom and Japan accounted for a combined 80 percent of the international construction market in 1987. In the peak year of 1981, these countries accounted for 71 percent of the market. During the 1981-87 period, the United States' share of the world market declined (from 36 to 24 percent), even though the share of the United States remained twice that of the next most important suppliers (namely, Japanese and French firms accounting for 13 and 12 percent of the world construction market respectively).

Sales of firms from the Republic of Korea reached a peak in 1982, amounting to \$ 13.8 billion, or 11 percent of the world's market. This share has subsequently declined to \$ 2.1 billion or 3 percent in 1987, inter alia, because of rising wage trends in Korea, in part because of reduced activity in the Middle-East, Korea's principal market for CES exports. The share of "other countries" shown in Tables I and II (which consist primarily of developing countries) declined from \$ 9.4 billion or 9 percent of the world's market in 1980 to \$ 3.3 billion or 4 percent in 1987.

Table II describes the world market situation for international design services. The value of this trade grew slightly during 1983-87, from \$ 3.8 billion to \$ 4.0 billion. Unlike the construction market, the international design market remained relatively stable between 1983-87. The share of firms from developed countries in the international design market surpassed 80 percent in 1987. In 1983, the combined figure was 78 percent. During the 1983-87 period, firms from the United States witnessed a decline in their world market share (from 31 to 26 percent), as did firms from France (9 to 6 percent) and the United Kingdom (15 to 11 percent). Canadian firms registered the largest increase in the period, capturing 13 percent of the world market in 1987, up from 7 percent in 1983.

TABLE I

Market shares of international construction services
(measured by new contracts awarded to the top 250 international contractors)
(Billions of U.S. dollars and per cent share in brackets)

Country	1980	1981	1982	1983	1984	1985	1986	1987
United States	48.3 (45)	48.8 (36)	44.9 (36)	29.4 (31)	30.1 (37)	28.2 (35)	22.6 (31)	18.1 (24)
France	8.1 (7)	12.1 (9)	11.4 (9)	10.0 (11)	5.4 (7)	6.7 (8)	7.1 (10)	8.6 (12)
Germany, Fed. Rep. of	8.6 (8)	9.9 (7)	9.5 (8)	5.4 (6)	4.8 (6)	5.4 (7)	5.5 (7)	5.9 (8)
Italy	6.2 (6)	9.3 (7)	7.8 (6)	7.2 (8)	7.8 (10)	8.7 (11)	7.4 (10)	9.2 (12)
United Kingdom	4.9 (5)	8.7 (6)	7.5 (6)	6.4 (7)	5.7 (7)	5.6 (7)	7.0 (9)	7.9 (11)
Other Europe	9.2 (8)	12.6 (9)	10.3 (8)	9.1 (10)	7.2 (9)	6.2 (8)	6.7 (9)	8.9 (12)
Japan	4.1 (4)	8.6 (6)	9.3 (8)	8.7 (9)	7.3 (9)	11.6 (14)	9.4 (13)	9.9 (13)
Rep. of Korea	9.5 (9)	13.9 (10)	13.8 (11)	10.4 (11)	6.8 (8)	4.8 (6)	2.6 (4)	2.1 (3)
All other countries	9.4 (9)	10.5 (8)	8.6 (7)	7.0 (7)	5.9 (7)	4.4 (5)	5.6 (8)	3.3 (4)
TOTAL	108.3	134.4	123.1	93.6	80.5	81.6	73.9	73.9

Source: Engineering News Record, various issues.

Totals do not necessarily correspond to the sum of components due to rounding at component level.

TABLE II

Market shares of international design services, 1983-1987
(as measured by foreign billings of the top 200 international design firms)
(Millions of U.S. dollars and per cent share in brackets)

Country	1983	1984	1985	1986	1987
United States	1,204 (31)	1,037 (30)	1,165 (32)	918 (26)	1,042 (26)
France	361 (9)	234 (7)	239 (7)	306 (9)	260 (6)
Germany, Fed. Rep. of	253 (7)	249 (7)	230 (6)	282 (8)	356 (9)
United Kingdom	592 (15)	454 (13)	463 (13)	481 (14)	451 (11)
Canada	269 (7)	287 (8)	266 (7)	204 (6)	518 (13)
Japan	127 (3)	166 (5)	226 (6)	221 (6)	259 (6)
Netherlands	203 (5)	228 (7)	219 (6)	259 (7)	358 (9)
Other countries	841 (22)	809 (23)	832 (23)	869 (25)	774 (19)
TOTAL	3,850	3,464	3,640	3,540	4,017

Source: Engineering News Record, various issues.