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Interrelationship Payments and Guarantees in Engineering and Consultancy Agreements

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CONTENTS

INTRODUCTION

The provision of engineering and consultancy (E+C) services represents one of the principal components of technology transferred to developing countries, supplementing proprietory know-how and technology embodied in machinery and equipment. In recent years this area of international co-operation is gaining considerable attention. It also partially reflects a more general trend as the rendering of various kinds of services represents the most dynamic segment of international business transactions. On the other hand developing countries are becoming increasingly aware of the important role of E+C services in promoting industrial development. As a result many of them have embarked on a major effort towards establishing endogenous E+C facilities. 1/ Despite visible progress made by some developing countries the group as a whole is still heavily dependent on expatriate E+C personnel, primarily because such services are typically linked with supply of modern machinery and equipment as well as the transmission of proprietory know-how.

Consequently, various government agencies in the developing countries have become concerned with the conditions and overall framework for the acquisition of E+C services. It shall be noted in this respect that foreign consultants are usually contracted by these countries in connection with large investment projects executed within the public sector, under the direct supervision of the respective government authorities. Among other institutionss involved directly or indirectly in the importing of such services are those responsible for controlling external financial transactions, regulating direct foreign investment and, last but not least, those responsible for the evaluation of technology transfer agreements.

The questions pertaining to the international rendering of E+C services are herewith put forward for discussion and respective action within the framework of UNIDO and, more specifically, its co-operative scheme called Technological Information Exchange System (TIES). Since 1982 the scope of TIES data exchange has been extended so that it has become possible to collect and disseminate information on various service arrangements (mostly E+C contracts), in addition to licensing agreements which represent the principal form of technology transfer.

During the Ninth TIES Meeting held in Beijing (People's Republic of China) in 1984 the participants representing technology transfer registries from a number of developing countries urged the UNIDO Secretariat to launch a study on the forms and conditions of payments for E+C services contracted from abroad.

While complying with the above recommendations, the UNIDO Secretariat requested the TIES members to share their experience in contracting foreign E+C services and provide information on this subject. As a result, valuable inputs were received from Ethiopia, Malaysia, Nigeria, Pakistan, Philippines, Poland, Portugal, China (People's Republic of) and Republic of Korea. The scope of information provided varied from comprehensive statistical analysis of a broad sample of contracts (Portugal) to examples of selected contracts, clauses relating to payments and information on government policies, as well as comments and suggestions.

1/ See background documents for the Expert Group Meeting on the Role of Industrial Consultancy in Developing Countries, UNIDO.ID/WG.278/1-6, Ljubljana, Yugoslavia, 26-30 June 1978 and A. Araoz/ed./"Consulting and Engineering Design in Developing Countries", IDRO, Ottawa, 1981.

The country contributions, as well as the survey of professional literature, enabled the elaboration of the present study which is focussed on the identification and clarification of some principal uses arising from the acquisition of foreign E+C services, with special consideration for the payments for such services. The study is divided into two parts. The first is of a methodological character. It contains a definition and classification of E+C services and outlines the contractual and organizational framework for rendering such services (Chapter I). Secondly it deals with the principal questions pertaining to payments in a general way (Chapter II).

In the second part, which relies predominantly on the analysis of background empirical data, an attempt was made:

- to identify levels of personnel fees used in E+C agreements as well as major factors affecting such payments (Chapter III);

- to present alternative formulations for other contract conditions related to payments, such as the level of out-of-pocket expenses, indexing clauses, currency clauses, etc. (Chapter IV);

- to offer practical suggestions as to the alternative approaches with respect to specific problems pertaining to payments in the course of contract negotiation and evaluation.

The study is wound up with general conclusions and recommendations on possible actions aimed at improving the overall conditions for acquiring E+C services at the country level as well as within UNIDO (TIES) framework.

It is pointed out however, that due to the limitation of available data, the present study should be viewed as a preliminary one. It is anticipated that this study will facilitate and stimulate discussions on this interesting subject, that it will help identify existing gaps and alternative sources of information, thereby providing a framework for the elaboration of its final version.

I. THE SCOPE AND CONTRACTUAL FRAMEWORK FOR THE PROVISION OF ENGINEERING AND CONSULTANCY SERVICES

1. Definition of engineering and consultancy services

Engineering and consultancy services are predominantly acquired in connection with the implementation of investment projects in developing countries. As a rule various categories of services are linked with specific phases of the project. Basically E+C services comprise pre-investment services, project execution services and those linked with the operational phase. An illustrative, though not comprehensive, list of engineering and consultancy services is given below:

Pre-investment phase

- preliminary surveys on raw materials and market availability
- pre-feasibility and feasibility studies
- technological, economic, commercial and financial evaluation of projects
- assistance in the preparation of terms of reference and invitation for tenders
- evaluation of bids
- assistance in the negotiation of agreements

Project execution phase

- project engineering (basic and detailed engineering, product engineering, organization and management, information systems)
- procurement supervision
- construction supervision
- installation and start-up supervision (including personnel training)

Operational phase

- technical and management trouble-shooting
- quality control and maintenance systems
- improvement of operating efficiency
- quality control and maintenance systems
- product design and product development
- set-up management information systems
- expansion programmes.

Although it is quite difficult to distinguish precisely between engineering and consultancy, it is generally understood that the latter comprises pre-investment studies as well as advisory services rendered during the second and

third project phase. On the other hand, the engineering (or engineering design) is principally accomplished in the form of drawings, designs, calculations, specifications, etc.

The question of interrelationship between E+C and other categories of services rendered in the course of implementation of industrial projects is somewhat complicated due to the lack of universally accepted concepts and definitions. The distinction between E+C and construction and installation is relatively easy as the former relates essentially to the intellectual service and does not include any building, supply and installation of equipment.

Technical assistance is generally meant to cover services rendered in connection with the transfer of technology. In principle these are consultancy services provided during a late stage of project execution and in the course of operation of industrial establishments. In view of the fact that technical assistance is predominantly given by suppliers of technology or general contractors and not E+C firms, this category is often separated from E+C.

The E+C services are linked to a given phase of investment projects and are therefore as a rule offered for a definite period of time. This applies to the operational phase as well and therefore operational services offered under long-term arrangements such as management contracts, industrial co-operation agreements, etc. are not viewed as E+C.

2. Contractual framework for the provision of E+C services

As a result of the analysis conducted in the previous section, the broad interpretation of E+C services has been adopted in the present study. Such services are generally viewed as a crucial intellectual input for the execution of investment projects. Consequently, we shall consider various contractual arrangements covering the acquisition of such services by developing countries.

Let us first take the "pure form", i.e. the situation where the E+C organization is engaged exclusively in the rendering of the services in question to a foreign client. Under such circumstances, the consultancy and/or engineering agreement is the most suitable type of arrangement. However, such services often relate to the transmission of know-how and may therefore be covered by the licensing agreement, technical assistance agreement or a combination of both.

A great deal of E+C services is rendered in connection with the delivery of specialized machinery and equipment including installation supervision, start-up assistance, training, etc. The situation becomes much more complicated when the E+C is combined with construction works. In such a case partners enter into combined engineering and construction agreement or the contract for the supply of plant and equipment. In the manufacturing sector the best-known type of complex arrangement is the turnkey contract, which provides for the delivery by a foreign contractor of complete plants ready to become operational.

In view of the above it is clear that the measures taken by developing countries aimed at improving the conditions for the acquisition of foreign E+C services should not be limited to standard E+C contracts. Due consideration should also be given to other arrangements as mentioned before, through which the bulk of E+C is channelled.

II. FORMS AND METHODS OF PAYMENTS FOR E+C SERVICES

1. Introductory remarks

In the first instance we should stress that there is a great variety of forms of remuneration for E+C services. This results in the first place from the existence of different contractual arrangements covering the provision of such services, ranging from short-term assignments to complex turnkey agreements. On the other hand, in each of the major categories of contract, different pricing methods may be adopted. The choice of the most convenient type of contract and method of pricing shall depend on the project characteristics, bargaining strength of the partners involved, requirements of the financing institutions, etc. We shall briefly outline below the pricing methods, while pointing out their advantages and disadvantages.

2. Pricing methods in engineering contracts

2.1 Fee based on a percentage of net construction cost

Under this method the fee for engineering is expressed as a percentage of the net construction cost. Generally this percentage ranges from 3 to 12 per cent, depending on the size of the project and its complexity in the technical and engineering sense. This type of contract has the advantage that the client pays and the supplier of services receives compensation in direct proportion to the work performed. This method is also convenient for the evaluation of payments as it allows comparisons with similar projects executed in the past. The principle disadvantage is that the client does not know the exact cost of the engineering work when he signs the contract, and therefore does not know the extent of his obligations. It may also happen that the supplier deliberately inflates the cost of work in order to increase his own fee proportionately.

2.2 Lump-sum fee based on a percentage of the estimated construction cost

The E+C fee may be arrived at on the basis of a percentage of the estimated construction cost, which is then considered to be an unchangeable lump-sum, irrespective of variations between the actual and estimated constructon costs. This form of contract has the advantage that the cost of engineering work is known definitely in advance. Its disadvantage, however, is that errors in the estimated cost are reflected in the E+C fee. Furthermore, each change order on the construction contract indicates the necessity for a corresponding change in the E+C contract.

2.3 Cost plus fixed fee

Under the preceding types of contract the fee covers the supplier's normal costs and operating expenses connected with the work and his profit. The cost-plus-fixed-fee type of contract provides a fee for profit only, since all engineering costs of the project, including overhead expenses, are reimbursed by the client. The fee is based on the estimated constructon cost and remains fixed, regardless of any variation between the estimated and actual costs. This type of contract has many disadvantages when the scope of E+C services cannot be accurately determined in advance, as in the case of alteration work and projects. The disadvantages lie in the multiplicity of accounting records necessary to determine the supplier's true costs and in the difficulty in segregating costs when more than one project is being simultaneously handled by the E+C firm.

2.4 Cost plus fixed fee with a guaranteed ceiling

Under this form of contract the supplier is reimbursed for the actual costs of work performed provided that the total amount does not exceed the maximum limit established in the contract. If this should occur the supplier is held responsible for the excess and receives no compensation over the guaranteed ceiling cost. As compared with the ordinary cost-plus types of contracts, this form removes some of the uncertainties concerning the total cost to the client. As compared to the lump-sum type of contract, it has the advantage that the client receives the benefit of the saving if the actual cost of the work should be less than that estimated when the contract was signed.

3. Pricing methods in consultancy agreements

3.1 Personnel fees based on a time rate

This is the most typical form of payment in consultancy agreements. The fee is based on the time devoted by the consultant of services for the client. Under this arrangement a tariff providing for monthly, weekly, daily or hourly rates is established for each category of personnel. When the extent of such services cannot be accurately determined in advance, a minimum retainer is usually provided to cover the availability of the consultant whether he is called on for services or not. The major advantage of this pricing method lies in the simplicity of its application. However the time rates do not provide sufficient incentives for the effective performance of the consultancy work which should be oriented towards reaching planned objectives.

3.2 Lump-sum

This method of pricing is frequently used in investigations and studies when the scope of assignments to be undertaken, as well as the duration of services, can be clearly and full defined. The parties which apply this method decide on a lump-sum in consideration of the consultant's total obligations, with expenses either included or not included. It shall be pointed out however that time rates are frequently used in arriving at the lump sum in the course of preparing bids and negotiating contracts.

4. Compensation of E+C services in other types of agreements

4.1 Broader scope contracts

The broader scope contracts, like turnkey contracts, cover a full range of services leading to the implementation of an industrial project. Usually a project is executed on behalf of the investor by the contractor, with varying degrees of participation by domestic entities.

Since the total value of the E+C services does not as a rule exceed 10 per cent of the total cost of the project, they are normally compensated for under the pricing formulae used in a broader scope contract. Without going into details we may distinguish between lump-sum and cost reimbursable payment arrangements. 2/ Under the lump-sum method the payments for E+C services may not even be specified separately. Under the second method, they appear in the cost specifications presented by the supplier of services to the client for the purpose of their reimbursement by the same.

2/ For more detailed analysis of payments for the supply of engineering and construction of industrial plants see "Technology Payments", UNIDO (forthcoming).

4.2 Compensation for auxiliary consultancy services in licensing and technical assistance contracts

Consultancy services are often indispensable for the effective transmission of technology provided under, for example, licensing agreements. As to the compensation for such services, two principal approaches may be identified. Under the first one it is generally assumed that such services are fully covered by the basic payment formulae stipulated in the contract, i.e. lump-sum, royalty or a combination of both. Alternatively, the contract may contain provisions for additional remuneration for consultancy services following the principle of the cost-reimbursable method. In the latter case the question of adequate definition of cost is of crucial importance and we shall deal with this question in the next paragraph.

5. The structure of cost for E+C services

5.1 Explanatory comments

The key issue in the course of contract evaluation, negotiation and approval is the definition of "just" price for the goods and services offered by the supplier. With respect to E+C services this problem may be resolved while looking into various cost elements associated with the rendering of such services from the client's perspective. Below we shall consider following cost elements associated with the international rendering of E+C services:

- personnel fees
- subsistance allowances
- travel expenditures
- other out-of-pocket expenses

For the sake of simplicity we have neglected the material component in the present analysis (use of equipment, materials, etc.) in view of the fact that E+C is predominantly viewed as an intellectual service.

5.2 Personnel costs

Personnel costs are simply expressed in the form of hourly, weekly or monthly rates. However in order to arrive at such rates it is necessary to consider the following sub-elements:

- direct payroll cost
- indirect overhead cost
- net fee or profit.

The direct payroll cost may in principle be determined by taking the salary levels of the various categories of personnel. It should be borne in mind that the salary levels for the time spent on foreign assignments are usually higher (on the average 25 to 50 per cent) than those applied in the home country. Indirect overhead costs cover social security, taxes, insurance, annual bonuses and incentive payments, holiday and severance pay as well as the general administrative expenses to the extent that these are not included as a direct cost. The overhead expenses are usually calculated as a percentage of the direct payroll cost and vary from 50 to 100 per cent.

The net fee represents the profit to the supplier of services. The E+C firms generally calculate the net fee as a percentage of the direct payroll plus overhead costs (between 25 and 50 per cent). If such services are rendered by the manufacturing firm the "lost" value added serves as a basis for calculating the fee.

4.3 Travel, subsistence and other out-of-pocket expenses

In international contracts these elements may constitute a substantial share of the total cost of E+C services. The first and second elements are self-explanatory, whereas the third one covers such items as visas, communications, printing of the reports, etc.

6. The concept of the "full cost" for E+C services under different contract types and pricing methods

In principle all the cost elements mentioned above should be considered in order to arrive at the "full cost" for E+C services. However, there are essential differences in calculating the cost under different contractual arrangements and pricing methods.

Let us take personnel costs as a useful example. In the broader scope cost-reimbursable contracts whether weekly or monthly rates, also cover the profit to the supplier of services. On the other hand, under the "cost plus fee" formulae the personnel cost used for calculation should exclude the profit component as the latter is added percentagewise over and above the cost.

The personnel costs for consulting under transfer of technology agreements can be interpreted in a different way. It shall be assumed that these services are covered by the basic pricing formulae (royalty, lump-sum) and the client reimburses only those additional costs which are directly linked to their provision. An alternative approach, obviously preferred by the suppliers, requires the remuneration of consultancy services to be made separately from technology payments.

Even such standard cost elements as subsistence allowances ought to be carefully screened as to whether they are applicable to a given category of contract and pricing method. For example, clients often provide free housing for their expatriate personnel and under these circumstances it is clear that subsistence allowances should be adjusted accordingly.

The adequate formulation and interpretation of the "full cost" formulae used in a given contract has to be seen as the crucial aspect for contract evaluation as it may contribute to the elimination of repetitive remuneration of some cost elements which may result in excessive payments for E+C services.

III. EVALUATION OF PERSONNEL FEES

1. Introductory remarks

Personnel fees represent the key element of costs for E+C services and therefore an analysis of the level of such fees should be regarded as a major task in the evaluation procedure. Since this analysis consists predominantly of comparative data we will indicate the principal sources of information which may be used in the course of evaluation:

- data referring to the past experience of the investor and/or supervising government agency

- data supplied by the potential suppliers in their bids 3/

- information from third sources (professional literature, international exchange, etc.).

In any case the evaluation should begin with an analysis of cost elements which are included in the personnel fee and methods for arriving at a given fee level. The second step is to define the acceptable level for each cost element. For that purpose it is necessary to relate the cost proposals of the potential suppliers to past experience in executing industrial projects, data obtained through international exchange, etc.

Since overhead charges and net profit are added percentagewise to the direct payroll cost, the latter should be considered in the first place. General data on direct payroll costs are relatively easy to obtain as they can be derived from the salary levels in developed countries, giving due consideration to additional bonuses when linked with foreign assignments. As a rule of thumb, it can be assumed that the total personnel fee should not be more than 2.5 times higher than the direct payroll cost.

Another area of concern is the number of personnel effectively engaged in the project. Quite often the supplier lists an excessive number of staff required for performing the services, inter alia, by adding those engaged in part-time work. Special attention should be given to that portion of work done in the supplier's home country, as this cannot be accurately checked during the course of performing the services. This brings us to another important aspect, i.e. the breakdown of personnel costs between the home and recipient country. There is a general tendency on the part of suppliers to calculate total personnel costs as if the services were performed in the recipient country. The proper identification of the portion of work conducted at home should bring essential savings, bearing in mind that:

- the direct personnel costs in the home country should not include incentives for working abroad

- the overhead charges are generally lower for local assignments.

During the second stage of evaluation, comparisons should be made between the proposal made by potential suppliers and similar projects and services performed in a given country or abroad. For that purpose we shall present below the major findings of our empirical survey, based on the inputs provided by TIES participants.

2. Forms of remuneration most often used for E+C services

The analysis revealed a general pattern as to the methods for pricing E+C services. Definitely, the time rates (per day, per week or per month) are the most popular form of remuneration. In rare cases the straightforward lump-sum is applied. In fact lump-sum should be regarded not as an alternative, but as an additional form of remuneration for E+C services. For example, the lump-sum is often used to reimburse services conducted in the home country, whereas the services in the recipient country are remunerated by weekly or monthly fees. Secondly, the lump-sum category often appears in the contract as the indicative figure for the total value or the upper ceiling for the payments to be made in

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3/ The experienced investor usually requires the invitees to submit detailed cost proposals in accordance with the standard format. The scope of information which can be requested from the invitees is given in Annex I.

accordance with the time rates. On the other hand, the fees based on construction costs were non-existent in our sample.

3. Factors affecting the level of personnel fees

The analysis of empirical data helped to identify the following major factors affecting the level of personnel fees for E+C services:

- category of personnel engaged in the project
- duration of assignment
- complexity of the project
- the country of origin of expatriate personnel
- conditions prevailing in the recipient country
- government intervention by the recipient country.

In the subsequent sections we shall discuss the scope of influence of the above factors in a more detailed manner. As a general rule, while referring to the specific fee levels, we shall relate them to a calendar day in order to avoid confusion resulting from applying different time intervals (days, weeks, months, etc.). Secondly, we shall rely on the "full cost" fees covering direct payroll costs, overhead charges and net profit.

4. Category of personnel

The category of personnel effectively engaged in the rendering of E+C services constitutes the key factor taken into consideration while defining the fee levels. This is indicated explicitly in the agreements surveyed, as they defined the personnel categories to be engaged in the project and the respective fee levels. In some contracts more than 10 categories of expatriate staff were enumerated. However, no uniform standards for categorizing personnel were identified as they relate mostly to the experience and staff position levels used in the public or private sectors of the recipient country. For the purpose of the present analysis we shall distinguish three broad categories of personnel:

Group A. Senior professional staff

These are mostly highly qualified engineers and managers with more than 15 years of professional experience. In the complex projects they generally assume supervisory or managerial functions (e.g. project leader)

Group B. Professional staff

Graduated engineers with an average experience of 8 - 12 years

Group C. Technicians and junior engineers.

The empirical survey revealed the following fee levels for the above-mentioned personnel categories:

Group A - in the range of US$ 400 per calendar day

Group B - in the range of US$ 300 per calendar day

Group C - in the range of US$ 200 per calendar day

The findings presented above have some obvious implications which have to be considered in the course of contract evaluation and negotiation. In the first place the actual needs with respect to the categories of personnel should be carefully defined, especially for Group A personnel. As a rule the suppliers tend to over-represent this group by duplicating managerial functions which are not required for the efficient execution of the project. Another area where special attention should be given during the evaluation process is the possible "inflation" of categories of personnel. This happens, for example, when junior engineers are posted at the B level or professionals are classified as senior professionals. Alternatively, the supplier often indicates higher categories of personnel in his cost proposal whereas in the course of implementation lower categories of staff are effectively engaged in the project. The careful evaluation and subsequent monitoring of the above-mentioned problem areas may lead to a substantial saving for the client.

The evaluation of payments for the portion of engineering services conducted in the home country is more complicated. As indicated earlier such payments are usually reimbursed in the form of a lump-sum. The amount of time required (e.g. man-months) and the fee levels applied constitute the basis for arriving at the final amount. Past experience gained from the implementation of comparable projects should be used in order to establish acceptable time requirements for the preparation of drawings, designs, calculations, etc. Taking into consideration the lower cost involved, it might legitimately be requested that the lower fees be applied for the portion of work done in the supplier's country.

5. Duration of assignment

Taking into consideration the length of the assignment, the following principal types of E+C services may be distinguished:

- services of a "trouble-shooting" type lasting only a few days or weeks
- services associated with the project execution and with the well-defined time limits resulting from the length of a given project phase
- consultancy assignments rendered during the operational phase and extended over a longer period of time.

As a rule the fees appplied in the case of long-term assignments are definitely lower than those used for trouble-shooting, bid evaluation, etc. In fact agreements covering assistance in operating the plant which extend over longer periods of time may stipulate the salary rates for Group C personnel to be as low as US$ 100 per calendar day. On the other hand the trouble-shooting services of highly qualified experts can easily cost US$ 700-800 per calendar day.

6. Complexity of the project

In the case of highly complex projects (in the technical sense) the fees charged are 20-50 per cent higher than for the average projects. This corresponds to the relative scarcity of consultants who may perform complicated tasks. It should however be emphasized that the majority of projects implemented in developing countries are technically at the average or below average level. This aspect should be carefully examined in the course of evaluation in order to eliminate unjustified demands for increased fees which are often made by the suppliers of service.

7. The country of origin of expatriate personnel

Since the payroll costs constitute a basis for calculating personnel fees it is obvious that the salary levels in the supplier's country have a direct impact on such fees. The empirical survey revealed that the highest fees for the consultant services were from experts originating from the USA. Somewhat lower fees were charged by Western European and Japanese personnel. With respect to experts from Eastern Europe, these are mostly contracted for long-term group assignments. Under such circumstances the personnel fees are generally lower than those used for remunerating consultants from developed market economy countries.

It should be noted that several developing countries have recently started exporting E+C services (e.g. India, Republic of Korea and Philippines). As a rule they offer competitive financial conditions for rendering such services and their fee levels are quite reasonable.

8. Conditions prevailing in the recipient country

Viewed from the perspective of the foreign consultant, developing countries vary substantially as to the hardships encountered in the course of performing their services (difficult climatic conditions, lack of adequate accommodation, lack of personal safety, etc.). For those countries identified as being extremely "hard", the supplier of services has to introduce additional financial incentives for his personnel. 4/ This has obvious consequences to the level of fees charged to the client.

9. Government intervention

In recent years several developing countries introduced various measures aimed at co-ordinating the acquisition of foreign E+C services. We shall distinguish between the country-wide measures and those introduced by the various parastatals and individual public organizations.

In the former case we shall indicate the general regulations relating to the procedure for the acquisition of E+C services (obligatory competitive bidding, priority to be given to local suppliers, etc.). With respect to fee levels we shall as an example mention the respective provisions of the Industrial Policy Statement issued by the Government of Pakistan where the following fee levels for foreign technicians have been approved:

Country of origin		
Canada, USA, Western Europe and Japan	-	not exceeding US$ 250 per day
East European countries and PRC	-	the rates fixed by the government organization concerned for the respective countries
All other countries	-	not exceeding US$ 175 per day.

It should be noted that foreign E+C services are often contracted on a regular basis by public organizations in developing countries. In recent years a trend has been observed (e.g. in Iraq and Libya) to establish standard rules for the acquisition of such services. The respective measures include the elaboration of

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4/ On the other hand a country may exploit its tourist attractions to obtain E+C services at reasonable cost.

model contracts, uniform procedures and standard fee levels for specifically defined personnel categories. As a rule the approved fee levels are definitely lower than those indicated in paragraph 4.

IV. EVALUATION OF OUT OF POCKET EXPENSES

1. Factors affecting the level of subsistence allowances

In the course of contract evaluation prior attention is usually given to basic personnel fees whereas an analysis of conditions for reimbursement of accommodation and travel expenditures receives a lower priority. Such an approach cannot be justified as in some cases the travel and subsistence expenses may exceed the value of personnel fees.

A comprehensive analysis of subsistence allowances in 11 engineering contracts implemented in Portugal revealed that on the average the allowances reflected the daily living cost at a hotel of international (but not luxury) standard. This is also a general rule used with the United Nations system while establishing the daily subsistence allowances.

The second factor which should be considered is the category of personnel engaged in the project. In the past there were clear differences as to the level of allowances as a result of the different hotel classes used in order to accommodate senior professionals and technicians. The analysis of empirical data leads us to the conclusion that at present such differences have been substantially narrowed and in most cases uniform subsistence allowances are being applied to all categories of foreign experts.

Another factor which ought to be considered while defining the level of subsistence allowances, is the duration of stay of the expatriate consultant in the recipient country. In the case of a longer stay (e.g. more than two months) the allowances are usually decreased by 25-35 per cent. It is worth mentioning that this is a standard procedure followed by UNIDO while contracting consulting services. The idea behind such an approach is that while staying longer the living expenses of the expert decrease as he or she very often stays in an apartment or house, which is definitely less expensive than staying in an hotel.

In the complex long-term projects the client is often directly engaged in arranging accommodation for expatriate staff, either in an hotel, house or apartment and sometimes even meals or cooking services. This becomes the only feasible solution when the project is implemented in backward regions of the country far from major towns. A major problem which should be taken into consideration in the course of contract negotiation and evaluation is the proper adjustment of the subsistence allowances by subtracting the cost of facilities provided directly by the client. In extreme cases the expatriate staff shall be given pocket money only, rather than a subsistence allowance. A typical error often found in engineering contracts executed in developing countries is that the consultant receives free accommodation as well as a full daily subsistence allowance. Obviously such a formulation should not be approved in the course of contract evaluation.

Bearing in mind the worldwide experience of the UN organizations, it is recommended that the level of daily allowance and the principles of granting such allowances be used as a reference while evaluating and negotiating E+C agreements with foreign partners. The respective data can be easily obtained from UNDP offices in a given country.

2. Reimbursement of travel expenses

Long-distasnce travel of expatriate staff between the supplier and recipient country as well as internal transportation represent the third major element of cost for E+C services. Obviously, the best interests of the client and the recipient country would be to avoid excessive payments for travel expenses, especially in a foreign currency. This could be acnieved in the first place by reimbursing air travel only at economy class rates (eventually business class) rather than the first class rates. In the complex projects involving a number of expatriate staff it is advisable that the client provides the supplier of services with air tickets as this encourages travelling with local airlines and consequently the expenses can be incurred in the local currenc·· In fact this is a standard procedure in case of government-sponsored projects in many developing countries.

With respect to transportation within the country a typical and seemingly least costly arrangement is that the client resumes direct responsibility for local transport by providing cars, drivers, etc.

CONCLUDING REMARKS

Despite visible progress achieved by a number of developing countries in establishing endogenous E+C activities the group as a whole is still heavily dependent on the acquisition of respective services from abroad. Therefore improving the conditions for importing such services has to be seen as a major objective of the respective government institutions in implementing and co-ordinating industrialization programmes including those regulating technology transfer.

In the course of evaluation and negotiation of contracts covering E+C services the issue of payment conditions is the most crucial and difficult one. The major problems faced by the clients and government institutions from developing countries result from their lack of experience and information as to the alternative formulation of the respective contract conditions. It is therefore suggested that the future action of TIES and the UNIDO Secretariat concentrates on two areas in that field.

The first direction would be to improve and expand the collection and exchange of information on contractual conditions for acquiring foreign E+C services. In those countries where the procedures for contracting E+C services have not been regulated as yet, the technology transfer registries may undertake steps in that direction in close collaboration with other government bodies responsible for preparing and executing industrial projects. This may include, inter alia, the implementation of a unified format for collecting data on cost calculation of E+C services from suppliers and clients (see Annex I) as well as the procedure of registration of E+C contracts.

As for the TIES exchange, the analysis conducted in the present study provides additional argument for extending TIES to cover various kinds of services relating to the execution of industrial projects. However such services shall be covered by the same information handling formats and procedures as in the case of licensing agreements. This in fact has already been arranged by introducing a unified TIES Coding Form and Contract Card for the application of the CORIS system.

In order to strengthen negotiation capabilities and evaluation skills it is recommended that questions pertaining to the contracting of E+C services be included in the programmes of workshops and courses on project preparation, evaluation and technology transfer sponsored by UNIDO.

A practical guide on the evaluation of E+C contracts could be a useful tool for those directly or indirectly involved in contracting such services. The guide shall concentrate on financial aspects but other contract conditions have to be covered as well. In the course of preparing the proposed guide the findings of the present study shall be further supplemented by data and additional contributions of the TIES participants.

ANNEX I

PROPOSED FORMAT FOR COLLECTING DATA FROM POTENTIAL SUPPLIER OF E+C SERVICES

PART I

TOTAL COST

1. PROFESSIONAL SERVICES

A. Project Area

Position Title	Man Months	Cost per Man Month	Currency
.....	.....	.....	.....
.....	.....	.....	.....
.....	.....	.....	.....
.....	.....	.....	.....

TOTAL PROJECT AREA _____

B. Home Office

Position Title*	Man Months	Cost per Man Month	
.....	.....	....	.....
.....	.....	.....	.....

TOTAL HOME OFFICE _____

*/preferably in line with TIES Coding Form

2. SUBSISTENCE/PROJECT AREA

/With due consideration of the following benefits provided by the client: .....
.....
...../

..... man/months at ..... per month _____

3. TRAVEL AND TRANSPORTATION

/specify

4. OTHER DIRECT COSTS/specify/

....
....

Total

5. EQUIPMENT, MATERIALS AND SUPPLIES

Equipment .....

Materials and Supplies .....

Total

6. GRAND TOTAL ITEMS 1-5 CONTRACT PRICE

PART II

CURRENCY REQUIREMENTS

Contractor's Currency .....

Local Currency .....

Other Currency .....