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First Working Group on Contracts and  
Insurance for Fertilizer Plants:

Vienna, 14-17 February 1978

**SOME PRACTICAL IMPLICATIONS OF ESTABLISHING A MULTILATERAL INSURANCE  
SCHEME TO COVER CONSEQUENTIAL LOSSES THAT ARISE DUE TO THE  
INADEQUATE PERFORMANCE OF FERTILIZER PLANTS AND  
SPECIFIC ITEMS OF EQUIPMENT \***

by the UNIDO Secretariat

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### Introduction

1. The Second General Conference of UNIDO held at Lima, Peru in March 1975, recommended that UNIDO should include among its activities a system of continuing consultations between developed and developing countries and among developing countries themselves. The objective of these consultations is to assist the developing countries to achieve their industrialization goals which include in particular the goal of producing at least 25 per cent of world industrial output by the year 2000.

2. The First Consultation Meeting on the Fertilizer Industry convened in Vienna, 17-21 January 1977, recognized that there were occasions when fertilizer plants and specific items of equipment had not functioned adequately and buyers had suffered high consequential losses. It was further noted that the protection given by penalty clauses in international contracts was inadequate protection against consequential losses. The Meeting also examined the proposal made by UNIDO to investigate the possibility of setting up a multilateral insurance scheme covering consequential losses. The Meeting supported the intentions underlying the scheme but realized that practical difficulties might arise in its implementation. The scheme warranted further consideration.

3. The Consultation Meeting therefore recommended that "Contract procedures intended to ensure the successful construction and operation of fertilizer plants and the suggested multilateral insurance scheme intended to ensure the protection of the interests of all parties concerned by providing, in particular, adequate compensation for consequential losses", should be further examined if necessary by convening a working group.

4. When the UNIDO Secretariat proposed to the Industrial Development Board at its 11th session in May/June 1977 that a Working Group be convened to examine this topic, the following terms of reference were suggested:

(a) Suggest contracts which would better protect the interests of all parties in the successful construction and operation of fertilizer plants in developing countries;

(b) Examine the extent to which contracts presently in use provide compensation to the client for all losses, including consequential losses, that he may suffer as a result of bad performance of the process and equipment;

(c) Outline proposals for establishing a multilateral insurance scheme that would cover such consequential losses.

5. It is expected that the first working group meeting will contribute to the formulation of conclusions and recommendations on these points for consideration at the Second Consultation Meeting on the Fertilizer Industry, tentatively scheduled for 6-10 November 1978.

**I. THE CAUSES OF INADEQUATE PERFORMANCE OF A FERTILIZER PLANT OR SPECIFIC ITEMS OF EQUIPMENT THAT MIGHT BE COVERED BY A MULTILATERAL INSURANCE SCHEME**

6. There is a need to define what is meant by 'inadequate performance of fertilizer plants and specific items of equipment' before ways are investigated to insure against the consequential losses thus incurred by the owner of the plant. When this matter was considered at a UNIDO Seminar held in Lahore in November 1977, it was pointed out that some fertilizer plants built in developed countries as well as those built in developing countries had performed inadequately. Thus cases from both developed and developing countries can be considered in framing the definition.

7. When considering the possibility of establishing a multilateral insurance scheme to cover consequential losses suffered by the owner of a fertilizer plant that performed inadequately, the Seminar in Lahore recommended that

"...UNIDO should collect the experience of fertilizer plants constructed in all the developing countries in the last 5-10 years, so that the frequency and cause of such occurrences can be accurately determined and presented to insurers. Insurers were also interested in the amount of consequential losses thus incurred. In this analysis, a distinction should be made between accidental events (for example, the unforeseen breakdown of machinery) and failures which are in the control of the owner or contractors. Interruption to supplies of raw materials, power and other utilities should be identified as separate and specific events." 1/

8. This first working group is invited to suggest how the causes of inadequate performance might be categorized so that UNIDO can draw up a questionnaire to be answered by the owners of fertilizer plants built in developing countries. As a starting point, the following list of causes is suggested for consideration:

- (a) the supplier fails to complete construction of the plant because he goes bankrupt;
- (b) the supplier fails to complete construction of the plant because he finds that the costs are higher than expected and will result in substantial losses or bankruptcy;
- (c) the plant is completed but fails to achieve the performance levels specified in the contract due to:
  - (i) defects in the design of the plant
  - (ii) defects in specific items of equipment
  - (iii) other causes

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1/ Draft Report of Technical Seminar on Contracting Methods and Insurance Schemes for Fertilizer and Chemical Plants, Lahore Pakistan, 25-29 November 1977. ID/WG.259/26

(d) the plant passes its commissioning test but subsequently proves incapable of achieving continuous operation at output levels specified in the contract due to:

- (i) failure of specific items of equipment;
- (ii) defects in design of the plant;
- (iii) interruption to power or water supplies;
- (iv) uneuitable quality of water supplies;
- (v) inadequate skill of the personnel operating the plant;
- (vi) inadequate maintenance of the plant or specific items of equipment.

9. In the first three cases the supplier of the plant fails to complete his contractual obligations. The purpose of the contract is to ensure that the fertiliser plant is built to specifications and capable of achieving the level of production promised. In these cases, therefore, it appears that the appropriate way to protect the interests of the buyer is to strengthen the protection of his interests in the contract. This matter is discussed in section VI of this paper.

10. The first working group is invited to give specific examples of cases that might fall into these three categories and to indicate whether recourse to the contract provided satisfactory protection for the buyer.

11. It will also be important to consider under item (c) (iii), whether failure to achieve performance levels can be attributed to other causes beyond the control of the supplier of the plant and if so how these cases should be distinguished from cases (c) (ii) and (c) (iii).

12. Case (d) (i) considers the situation where a specific item of equipment fails after the plant has passed its commissioning test. In most contracts, the buyer is protected against direct loss or damage resulting from equipment failure for the first twelve months; in this period, the equipment is replaced at the expense of the supplier. However, consequential damages arising from shut-down of the plant are usually not covered; these can be very large.

13. Case (d) (ii) considers the situation where a defect in the design of the plant appears after the commissioning test. Whilst the supplier may feel obliged to correct the defect at his cost in order to maintain his reputation as a supplier of reliable plants, the buyer may still suffer large consequential losses if the plant has to be shut-down or is technically unable to operate at the promised level of output.

14. The purpose of the proposed multilateral insurance scheme is to provide insurance that will compensate the buyer for consequential losses which arise in these two cases - case (d) (i) and case (d) (ii).

15. Cases (d) (iii) to (d) (vi) consider four other possible causes of inadequate plant performance. It is for consideration whether these causes are matters within the control of the supplier, the buyer or other parties such as those supplying electric power to the plant. Appropriate contracts with utility suppliers and suitable arrangements for managing, operating and maintaining the plant are the best way to reduce the risk of these causes resulting in inadequate performance of the plant.

16. Consequential losses arising from certain specific risks - for example, the interruption of power supplies - can probably be covered by insurance available from commercial sources. It is for consideration which, if any, of these additional risks should be covered by the proposed multilateral insurance scheme.

II. NON CONSEQUENTIAL LOSSES RESULTING FROM INADEQUATE PERFORMANCE OF FERTILIZER PLANTS AND SPECIFIC ITEMS OF EQUIPMENT COULD BE MEASURED AND POSSIBLE LIMITS ON THE COVERAGE THAT WOULD BE OFFERED

A. The measurement of consequential losses

17. When the owner of a manufacturing plant takes out insurance against the consequential losses arising from machinery breakdown or specific perils such as fire, earthquake etc., he chooses a way of measuring consequential losses that reflect the financial losses he anticipates he might incur.

18. Broadly speaking, consequential losses are calculated on one of two basic approaches:

- (a) loss of profits; these may be calculated to reflect the financial costs that will result for the insured party;
- (b) increased cost of working; that is the cost of replacing lost production by alternative supplies.

19. The principal elements of loss of profit are the fixed costs of operating the plant - namely, salaries and wages, maintenance, overheads and interest on capital; depreciation will also be included unless the plant is shut down for a long period.



20. A fertilizer complex producing 1000 tons per day of ammonia and 1500 tons per day urea would cost today about US\$ 200 million. It has been calculated that the loss of profits would be of the order of US\$ 4 million per month; this includes US\$ 1 million for depreciation, which may not be applicable when the plant is shut down. 1/

21. However, for a developing country that has to purchase fertilizer from abroad to replace the loss of local production, the increased cost of working may be the approach preferred. The insurance could be arranged so as to ensure that sufficient foreign exchange was recovered to import the fertilizer required. If this approach is followed, the problem for the insurer is to estimate the likely cost of alternative fertilizer supplies.

#### B. Frequency of occurrence of the event to be insured

22. Assuming the multilateral insurance scheme is intended to cover major breakdown of plant or machinery, the next important question insurers ask is "How frequently is the insured event likely to occur?" It may not be possible for the first working group to answer this question. But the meeting should decide whether the scheme will cover consequential losses arising from reduced rates of operation as well as the case when the plant must be shut down completely. The survey of experience of existing plants to be made by UNIDO will attempt to provide the detailed information.

#### C. Possible limits to the consequential losses that might be covered by insurance

23. Commercial sources of insurance prefer a broad spread of risk. If the multilateral insurance scheme is confined to fertilizer plants, the spread of risk is likely to be rather limited. The number of new fertilizer plants likely to be established in developing countries in the 1980's has been estimated at 20 per year. 2/ There is no certain way of ensuring that independent plant owners in sovereign countries would all decide to take advantage of the proposed multilateral insurance scheme. Therefore, unless the scheme is extended to other sectors of industry, some upper limit on the consequential losses covered by the insurance scheme may need to be set. The meeting might consider whether 3, 6 or 12 months of plant shut-down might be a suitable limit - implying maximum coverage at risk on each ammonia/urea fertilizer plant of perhaps US\$ 12 million, US\$ 24 million or US\$ 48 million.

24. Insurers cannot be expected to cover all the losses since this would leave no incentive for the owner of the plant and the supplier to re-establish normal operations as soon as possible. Therefore, some limit will be needed. Insurance might cover 70 per cent, 80 per cent or 90 per cent of the consequential losses incurred.

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1/ see Insurance cover available from commercial sources relating to the construction and initial operation of fertilizer plants by Hogg Robinson and Gardner Mountain Reinsurance Limited.  
ID/WG.259/5

2/ UNIDO Draft World-wide Study of the Fertilizer Industry: 1975-2000  
ICIS/22/Rev.1, 28 December 1976, pages 113-115.

**III. INSURANCE COVER FOR CONSEQUENTIAL LOSSES AVAILABLE FROM COMMERCIAL SOURCES**

**A. Insurance cover available at present**

25. Commercial insurance companies are willing to insure fertiliser plants built in developing countries against loss or damage to work in process, and equipment at the site during the construction of the plant (a Contractor's All Risks Policy). Once the plant is operating, they are willing to insure against loss or damages caused by fire, earthquake and other specific perils. They are also, in principle, willing to insure loss or damages resulting from machinery breakdown - that is failure of a specific item of equipment.

26. For these three types of insurance policy, cover can be extended to include the consequential losses arising from the insured event. Insurance would then cover the consequential loss caused by (a) delay in completion as a result of an insured event occurring during construction; (b) loss of production during initial operation due to fire, earthquake and other specific perils or (c) loss of production due to machinery breakdown.

27. Bearing in mind that minor breakdowns of machinery are to be expected, many commercial insurers only agree to cover consequential losses that arise after the first month of breakdown has elapsed. Furthermore, they try to avoid giving coverage for the first six months after start-up when many teething problems are likely to arise even in the best constructed plants. The proposed multilateral insurance scheme might need to place a similar restriction on the cover offered.

28. A premium of at about two per cent of the cost of the plant is required to cover direct damages or losses during construction and one initial year of operation; an additional premium of a further one per cent (or more) of the cost of the plant is needed to cover the consequential losses that may arise from these insured events. 1/

29. This appears to be as far as insurance available from commercial sources will go at present in covering consequential losses. In other words, it is difficult to insure against consequential losses arising from defects in the design of a fertilizer plant and/or specific items of equipment until such time as the building of the plant is completed, the plant has passed its commissioning test, and it has proved a reliable plant during say an initial period of six months' operation. At this point insurers are willing to provide machinery breakdown insurance.

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1/ see Insurance cover available from commercial sources relating to the construction and initial operation of fertilizer plants by Hogg Robinson and Gardner Mountain Reinsurance Limited. ID/WG.259/5, page 32.

B. The possibility of extending the present cover

30. If commercial insurers are to broaden the coverage offered to include defects in design and equipment that appear either during the construction period, the period of testing the plant or the first six months' operation, they will be covering a very large potential liability on each plant. The working group may wish to consider whether the private insurance market could in practice provide the insurance coverage for consequential loss which the multilateral insurance scheme is intended to cover.

IV. A MULTILATERAL INSURANCE SCHEME ORGANIZED BY COMMERCIAL INSURERS

A. A proposed scheme

31. One possible way of attempting to provide a broader cover would be for insurance companies in developing countries to organize a pool which, acting jointly, would write the traditional forms of insurance cover available for fertilizer plants. Under the pooling arrangement, an insurance company in one developing country would be compelled to insure the fertilizer plants in all other developing countries that are accepted by the leaders of the pool.

32. Although insurance would be placed with insurance companies in developing countries, the major part of the risks could be reinsured, perhaps to the extent of 90%, in the world's reinsurance markets. In this case the scheme would be both a multinational scheme and a multilateral scheme.

33. It could be understood that once the scheme was operational offering traditional forms of cover, an attempt would be made to extend coverage for consequential losses to include losses resulting from defects in design and equipment not covered at present. It appears likely that such insurance cover would be considerably more expensive than the 3 per cent of the cost of the plant which is suggested for traditional forms of cover.

34. If the working group considers that a multilateral insurance scheme of this type based on the initiative of existing insurance companies in the developing and developed countries can be proposed, then it will be necessary to consider how the scheme might be started. It would be desirable for the insurance companies from developing countries to form a company to represent their joint interests and operate the scheme. This company could be established in a neutral country which offers favourable tax treatment to incomes from such insurance.

35. It would be desirable to consider whether this company would need an experienced panel of assessors to assess the traditional and additional risks that are to be covered. Such a panel may be useful, even if those who are to carry a major part of the risk in the form of reinsurance have their own well established engineering departments to assess risks of this type.

36. The proposal to start by offering only traditional forms of cover has the merit that the insurance pool from developing countries and their reinsurance partners could start with a substantial source of income in the form of premiums. Such a base is usually necessary if commercial insurers are to be willing to consider new risks. Furthermore, the maximum potential loss covered by insurers is only likely to grow in the future if the volume of premium income continues to grow and a better spread of risks is achieved.

B. The possible need for governments to assist a multilateral scheme organized by commercial insurers

37. For these reasons, a second alternative might be considered. This would involve governments carrying a substantial part of the risks until this new type of insurance was well established. There are a few precedents for such government involvement. The most encouraging ones are the insurance of jumbo jets (where government involvement was eventually not required) and atomic power stations (where, although governments initially carried most of the risks, the private insurance market now covers the major part of them).

38. The first working group might consider whether the support of governments would be needed and if so what form this support should take. Two forms might be considered. First, governments might offer to cover losses in excess of a specified maximum limit. Second, governments might limit their potential liability by offering a fixed sum as a loan to the multilateral insurance scheme to help it get started; this would enable the scheme to overcome difficulties which might be faced if substantial losses had to be paid out before a sufficient reserve of premium income had been built up.

V. A MULTILATERAL INSURANCE SCHEME ORGANIZED BY GOVERNMENTS

39. Many developing countries buy fertilizer plants from a developed country supplier on credit. The supplier obtains insurance cover against the risk of the buyer paying. The premium charged of between 2 per cent and 4 per cent of the value of the credit is, in the last analysis, probably paid by the buyer. In other words, the buyer accepts a 2 - 4 per cent mark-up so that the seller covers all his risks.

40. The main risk faced by the buyer is that the plant will not be completed on time or that it will not perform adequately. Insurance against the risk of incurring consequential losses for these reasons might be provided by the supplier on the basis of insurance offered by his government. The premium might be higher than for export credit insurance, say 3 - 6 per cent as against 2 - 4 per cent. But if this type of insurance were made available, both buyer and seller would benefit from insurance.

41. One proposal for a multilateral insurance scheme would be that Export Credit Insurance Organizations in developed countries (and perhaps in a few developing countries) offer this type of insurance for exports of complete manufacturing plants. Although the scheme might be implemented by national agencies, it would have multilateral character because most plants are built with equipment coming from several different countries. It appears, therefore, that the practical implications of introducing this type of insurance should be examined by UNIDO in co-operation with some Export Credit Insurance Organizations.

42. An alternative proposal is that governments contribute to a fund which would compensate developing country buyers for consequential losses. One version of the proposal is that the fund would be a revolving fund in the sense that it would compensate the buyer immediately but expect to recover the funds advanced from the party found liable under law or arbitration. Another version is that the fund would pay out compensation without such right of recovery; but in this case it is difficult to see how the establishment of the fund would be justified on a national basis or negotiated on a multinational basis.

43. The working group may consider the practical implications of these alternative proposals and recommend which of them should be further examined and how this examination should be made.

44. A third alternative proposal, and at first sight perhaps the most practical, is that governments should provide the guarantee of performance of the supplier in accordance with his contractual obligations. National Export Credit Insurance Organizations have found it necessary for some very large projects in developing countries, to guarantee the performance bond themselves because national insurance companies and banks were not willing to do so for such a large sum. Fertiliser plants, which cost in excess of US\$ 200 million, could be covered in the same way.

45. This proposal, however, presupposes that the supplier of a fertiliser plant is willing to accept a contract which provides protection against consequential losses and includes a performance bond that would be large enough to cover the possible liability under such a contract. It is by no means certain that suppliers of fertiliser plants would accept such conditions. In order to assess whether they would, it is necessary to consider contract procedures used at present for the establishment of fertiliser plants.

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1/ See two papers presented to the Lahore Seminar. Evaluation of risk factors in tender preparation by T.M. Evans, Foster Wheeler Ltd., United Kingdom ID/WO.259/24 and Some observations on contract conditions for projects in developing countries by Andrew Brown, Humphreys and Glasgow, United Kingdom ID/WO.259/21

**VI. CONTRACTS THAT WOULD BETTER PROTECT THE INTERESTS OF ALL PARTIES IN THE CONSTRUCTION AND OPERATION OF FERTILIZER PLANTS**

**A. Guarantees and penalties used at present**

46. In many contracts used at present, penalties are imposed if the plant cannot achieve the levels of output and other parameters specified in the technical specification of the contract document. There are also penalties for delay in completion of the project. Both sets of penalties are acknowledged to be unrelated to the much larger loss or consequential loss that the buyer of the plant would incur. They are therefore included in the contract as a deterrent to the supplier rather than as a form of adequate compensation for the buyer.

47. In many contracts used at present the supplier includes a clause which excludes him from being liable for consequential losses. A maximum is established in the contract for the total of penalties for which the supplier can become liable; very often this is 10% of the contract value. Furthermore, when such payments are made, they are considered as 'liquidated damages'; this means that the buyer has been compensated once and for all for the events in question. <sup>1/</sup>

48. Participants at the Seminar are asked to confirm that these are the guarantees and penalties used at present and in particular to suggest whether the clauses that apply to the correction of design errors, equipment failures and construction faults place sufficient onus on the supplier for speedy and effective correction. In this connection, it has been noted that in some reimbursable contracts the contractor is reimbursed for the costs incurred in correcting design or construction errors, provided he exercises his normal professional skills.

**B. New approaches to successful operation of the plant**

**(i) extended period of performance tests**

49. There appears to be a conflict of interests between the inexperienced buyer of a fertilizer plant and the contractor or supplier. The supplier, once he has built the plant, feels he has done his job and does not wish to be involved directly in ensuring that the plant operates successfully in the first year. The inexperienced buyer, on the other hand, regards the first year of operation as a critical period in which he is likely to need continuing assistance in operating the plant. It has been suggested that performance tests should be repeated at intervals during the first year of operation and that penalties should attach to failure to achieve a high operating level. Such tests would act as an incentive for the contractor to use more rigorous inspection standards and to avoid cheaper alternatives in the design and equipment used where such savings made the plant less reliable to operate.

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<sup>1/</sup> Current practice is well described by Dr. W.M. Butt and Dr. A. Shah Nawas in a paper entitled Performance Guarantees and Tests. ID/WG.259/14 presented to the Technical Seminar on Contracting Methods and Insurance Schemes for Fertilizer and Chemical Process Industries, Lahore Pakistan, 25-29 November 1977.

(ii) Guarantees of output in the first year of operation

50. Another approach is to ask the contractor to guarantee that a certain level of output will be achieved in the first year of operation. If the contractor provides such guarantees, he will expect to have the major responsibility for operating the plant during this period. He will thus have additional costs and he will also have to make a provision in the contract price for the risk that the guaranteed level of output cannot be achieved. Therefore, the buyer will be asked to pay additional costs for this guarantee. Contractors represented at the meeting might estimate how much such a guarantee might cost as a percentage of the contract price so that the meeting may consider the cost of such guarantees in relation to the cost of insurance premiums for a cover which has roughly the same effect.

(iii) Bonus payments for good performance

51. It has been suggested that if a contractor is to be penalised for low levels of output in the first year of operation, he might equally well be rewarded if the plant achieves a high level of capacity utilisation.<sup>1/</sup> One advantage of this approach is that the personnel responsible for building and subsequently assisting in the operation of the plant could also receive a bonus if the goal was achieved. There is therefore a financial incentive for the foreign personnel involved to work hard and achieve the result the client wants.

(iv) Improved co-operation in plant management and personnel training

52. The alternatives suggested above may prove to be an unwelcome addition to the responsibilities of many contractors. In particular, those companies which are specialists in designing and erecting fertiliser plants, but which have no manufacturing facilities, may not feel equipped to undertake these responsibilities. They feel that it is the client's responsibility to arrange proper management of the plant and the necessary training for the personnel who operate it.

53. Various ways are suggested of achieving this goal. The most expensive, but often the most successful, way is to have a joint venture with a foreign partner who will give considerable assistance in the first year of operation but slowly withdraw once management and operating personnel are trained and experienced. A second possibility is to arrange a management contract for say 2 years with another manufacturer who has successfully operated a plant which uses the same manufacturing process. There have been few such contracts in the past but now that the expansion of the industry in developed countries is slowing down, many more enterprises should be willing to offer such assistance. A third possibility is for the client to purchase experienced managers on the open market; this approach runs the risk that the group of managers will not operate as a team and will be reluctant to train local personnel as quickly as is desirable.

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<sup>1/</sup> See the proposals made in Mr. Reiter's paper entitled 'The Use of Penalties and Bonus to Promote the Achievement of a High Level of Production in the First Year of Operation of a Fertiliser Plant' included in Summary of four papers on Contracts and Insurance prepared for UNIDO ID/WG.259/8.

54. Provided sound arrangements are made for the training of key management personnel, a great deal of training of personnel to operate the plant can be done on site under their direction once the plant is completed. Nevertheless, a number of key personnel have to be trained abroad. Although it is already the practice of many contractors to arrange for such training, it may be possible to improve these arrangements.

55. In connection with the above, it should be noted that the Seminar at Lahore recommended that UNIDO should help to organize more manpower development programmes for operating, maintaining and managing fertilizer and chemical plants.

### C. Bonds to Guarantee Performance of the Contract

56. The traditional use of a bond is to ensure that the contractor or supplier acts in good faith. A bond linked to the submission of bids is intended to ensure that the contractor will undertake the project if his bid is successful. When a contract has been made for erecting a fertilizer plant, the purpose of a bond is to ensure the successful completion of the task.

57. There appear to be two major types of bond used today. One that guarantees the performance of the contract and one that is payable on demand if the client calls the bond. When an insurance or surety company signs the first type of bond they feel obliged to ensure that the fertilizer plant is completed according to the contract. If the contractor goes bankrupt (the most common cause of default), it would be normal practice to call in another contractor to complete the work. If, on the other hand, a call is made on a pay-on-demand bond then the buyer is only likely to have cash in hand; the buyer would then be responsible himself for finding another contractor to complete the plant.

58. Like a penalty in the contract, it is felt by the contractors that a performance bond of say up to 20% of the contract value is usually sufficient to ensure successful completion of the work. This was the view of contractors present at the Technical Seminar in Lahore.

59. In some countries, it has become difficult for contractors using their normal commercial sources (i.e. banks and insurance companies) to provide bonds on the scale that their overseas clients expect. For very large contracts at least, therefore, some Government-supported export credit organizations are willing, for a fee, to assist as guarantors in obtaining the bond. In order to assess whether such a guarantee is what developing countries are looking for, it will be necessary for the working group to consider in detail what is involved in this type of government support.



**VII. CONCLUSION**

60. The developing countries are seeking a guarantee that the contract for constructing a fertilizer plant will be completed to specifications and that the plant will be technically sound and reliable in operation. What is the best means to provide the guarantee?

61. The buyer from a developing country must take many precautions himself. The inexperienced buyer is well advised to hire a consultant to advise him on the contract he makes and to watch over the construction of the plant. He may also invest heavily in training his personnel, obtaining management under contract and by seeking assistance with maintaining the plant. Money spent in this way helps to achieve successful completion of construction and reduces the risk of inadequate performance of the plant.

62. If all preventive steps are taken and still the plant does not perform adequately as a result of defects in design or equipment, then there should be a guarantee to fall back on. Unfortunately, such a guarantee is likely to push up the cost of the plant. If stronger guarantees and harsher penalties are included in the contract, the price of the plant will increase accordingly. If a performance bond for a substantial amount is called for, the cost of the supplier obtaining it will be added to the contract price. If insurance from commercial sources is obtained, the additional cost will be measurable, since the premium will be paid by the buyer/owner of the plant.

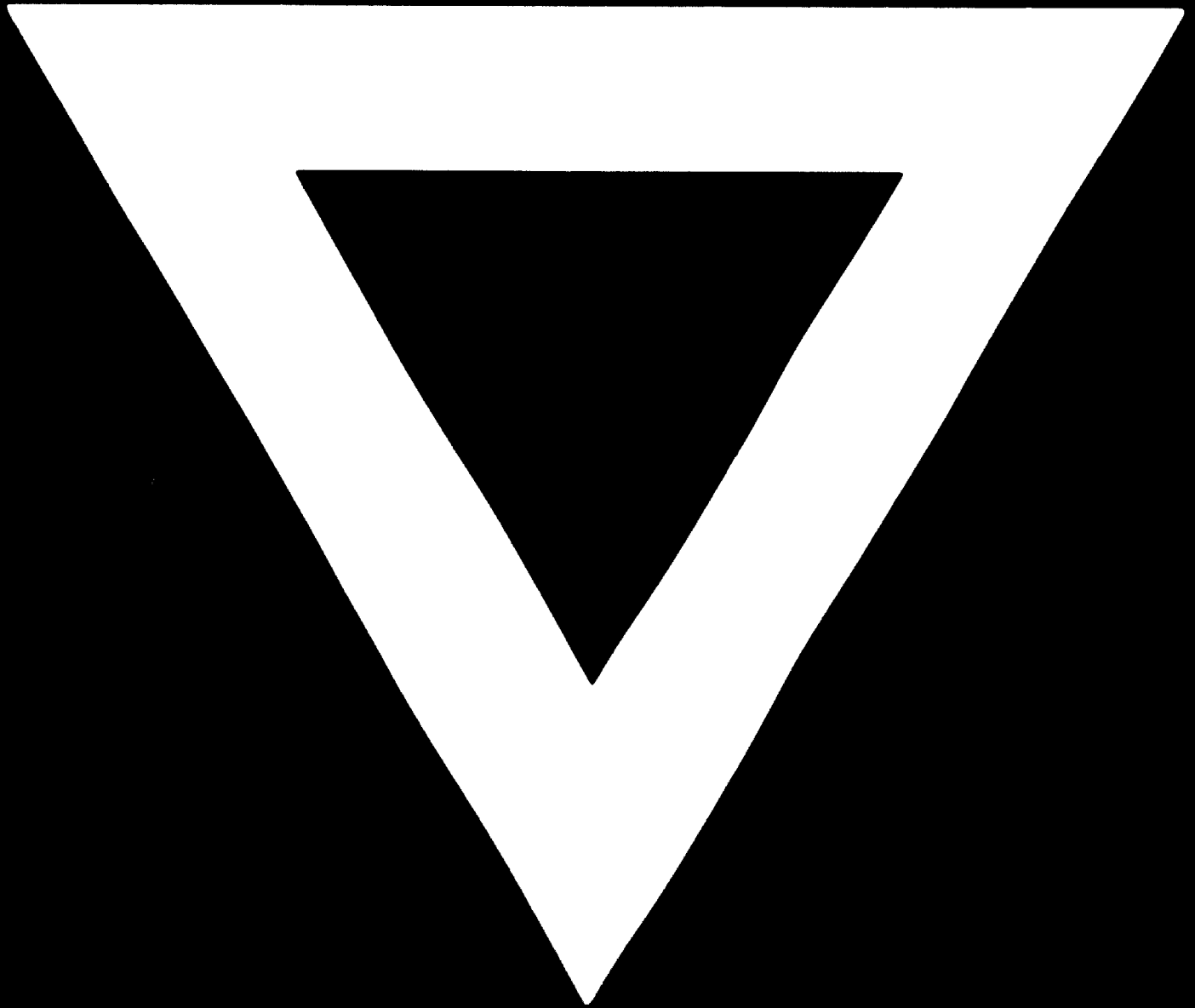
63. The working group is invited to consider whether one or a combination of these three ways of obtaining a guarantee without government involvement would be sufficient.

64. If they are deemed not sufficient by developing countries, there may be a need for governments to provide the developing country buyer with the assurance and guarantees he seeks. In this case, one practical way of doing so would appear to be for governments to guarantee performance bonds offered by the supplier.

65. Finally, the working group may wish to consider how UNIDO should further examine the scheme which is considered most suitable to recommend to the Second Consultation Meeting.



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