



TOGETHER
for a sustainable future

OCCASION

This publication has been made available to the public on the occasion of the 50th anniversary of the United Nations Industrial Development Organisation.



TOGETHER
for a sustainable future

DISCLAIMER

This document has been produced without formal United Nations editing. The designations employed and the presentation of the material in this document do not imply the expression of any opinion whatsoever on the part of the Secretariat of the United Nations Industrial Development Organization (UNIDO) concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries, or its economic system or degree of development. Designations such as “developed”, “industrialized” and “developing” are intended for statistical convenience and do not necessarily express a judgment about the stage reached by a particular country or area in the development process. Mention of firm names or commercial products does not constitute an endorsement by UNIDO.

FAIR USE POLICY

Any part of this publication may be quoted and referenced for educational and research purposes without additional permission from UNIDO. However, those who make use of quoting and referencing this publication are requested to follow the Fair Use Policy of giving due credit to UNIDO.

CONTACT

Please contact publications@unido.org for further information concerning UNIDO publications.

For more information about UNIDO, please visit us at www.unido.org



DO 1272

Distr.
LIMITED

ID/WG.22/26
20 September 1968

ORIGINAL: ENGLISH

United Nations Industrial Development Organization

Meeting on Industrial Investment Promotion Services

Vienna, Austria, 23 - 26 September 1968

Agenda Item 4 - Background Paper

I N D I A

LIST OF SELECTED IDENTIFIED INDUSTRIAL PROJECTS

Further information is available

from

Industrial Policies and Industrial Financing Section

We regret that some of the pages in the microfiche copy of this report may not be up to the proper legibility standards, even though the best possible copy was used for preparing the master fiche.



1. FERTILISERS:

India is making an all-out effort to increase her food production. Chemical fertilisers play a key role in the success of this effort. Government, therefore, welcome private investment, both Indian and foreign, in the fertiliser industry and have accordingly taken a number of decisions which will make such investment attractive and profitable. These decisions relate to:

- a) Financing and Management: Foreign investors are welcome to enter into partnership with private Indian parties for putting up fertiliser plants. In such ventures, they can have majority share-holding, if they so wish. No sound proposal for putting up a fertiliser plant for which foreign exchange is obtained from private sources will be allowed to flounder for lack of rupee finance. Government will help such projects in finding full rupee capital through the financing institutions in the country.
- b) Relaxation on Price Control: Controls on prices and distribution have been removed. It has been decided that fertiliser projects set up with the collaboration of foreign parties or by Indian entrepreneurs on their own will have freedom of distribution without control over prices of their products for a period of seven years from the date of commencement of commercial operation. While giving the concession, Government will have the option of purchasing up to 30% of the products of each plant at a negotiated price.
- c) High-level Governmental assistance and speed-up of procedures.
- d) High priority for import of raw materials.
- e) Credit facilities.
- f) Support for seeding programme.

For the achievement of the targets set for 1970-71, India will need creation of an additional capacity of one million tonnes of Nitrogen and 500,000 tonnes of Phosphate (P₂O₅) besides importing 700,000 tonnes of Potash (K₂O). Import figures are shown in the attached statement.

2. TRACTORS:

A massive outlay of Rs. 7,200 million on agricultural production envisaged in the Fourth Plan, calls for an equally immense effort for raising the production of agricultural machinery implements. Out of the various agricultural implements and machinery required, tractor is the most important one. Taking into consideration the progress by the units already licensed and having regard to the increased requirements of tractors during the Fourth Plan, additional manufacturing capacity in this field would be welcome, if suitable schemes come forth.

3. HOTELS:

Hotel accommodation in India is estimated to be far short of requirements of the tourist traffic. The Government of India, therefore, are offering various incentives in order to attract investors in the hotel industry, foreign investment to the extent of 49% of the total equity capital. New hotel projects are eligible for a tax holiday for the first 5 years of operation subject to conditions. Other facilities like issue of import licences, priorities for allotment of steel etc., will be granted by the Department of Tourism.

4. AUTOMATIC TRANSMISSION AND GEAR BOXES:

An Indian party which is already manufacturing automatic gears including crown wheel and pinion sets etc., desires to expand and diversify production and supply complete automatic transmission and gear box units. Approximately 5,000 to 7,000 sets of the automatic transmission and complete gear boxes per annum on a single shift basis are to be manufactured to meet the immediate domestic needs both for original equipment and replacements. Against the targeted capacity of 100,000 vehicles in the country, production has reached the 60,000 mark at the end of the Third Plan period. The Indian company seeks technical collaboration and would welcome financial participation by the collaborator to the extent required to be imported into India.

/of equipment

5. UNIVERSAL JOINTS AND CROSS BEARINGS:

The sponsors have already received licences to manufacture -

- a) finished automotive components from aluminium and its alloys, and
- b) universal joints and cross bearings.

They are already manufacturing (a) above and seek collaboration for the manufacture of universal joints and cross bearings. The demand for universal joints is of the order of 700,000 nos. whereas the indigenous manufacturers are at present able to supply only 400,000 nos., the balance being met by imports. They have already secured a loan in foreign exchange for import of capital equipment and, as such, only technical collaboration is sought for.

6. BAKERY EQUIPMENT (Biscuit and Bread-making Machinery)

At present, there is only one unit making bakery machinery with a capacity of 2 plants per annum valued at Rs. 1.2 to Rs. 1.4 lakhs, but they have no regular arrangements to manufacture all types of machinery with the result that the present requirement is met only by imports. Therefore, there is good scope for this industry and the Government of India would welcome schemes for manufacturing bread and biscuit making machinery with foreign collaboration. The demand is estimated to be 10 to 12 plants per annum valued at Rs. 40,00,000 to Rs. 50,00,000. Import during the last 2 years has been as under:

1966-67	...	Rs. 10.64 lakhs
1967-68	...	Rs. 28.31 lakhs

In this field the procurement of design and the technical know-how is more important than the equipment to be installed and investment therefor.

7. DDT:

A sugar mill, which is already producing sulphuric acid, caustic soda, industrial alcohol etc., would like to manufacture DDT with a capacity of 2,000 tonnes in financial participation with an overseas firm.

8. NICKEL CADMIUM RE-CHARGEABLE CELLS:

An Indian manufacturer of selenium rectifiers, battery eliminators and battery chargers, has a proposal for expansion of manufacturing photo electric cells and silicone miniature rectifiers and also consumer articles which use these equipment like electronic flash guns, rechargeable torches etc. They are interested in a joint venture for the complete range of these products. There is good scope for development of this industry in India.

9. PHALIC ANHYDRIDE:

Phthalic Anhydride is one of the important chemicals required in the organic chemical industries such as paints, dye stuffs etc. It is understood that in Europe, Phthalic Anhydride is being manufactured in smaller capacities, say 300 to 500 tonnes per annum and that both the know-how as well as such small capacity plants might be available for other countries for use. If so, this might throw an entirely new area of investment opportunities.

10. FUSITE TERMINALS FOR REFRIGERATION COMPRESSORS:

An Indian firm seeks technical collaboration to manufacture fusite terminals for hermetic sealed compressors which, as you know, is a resistance welded into the steel outer shell of the compressor. The glass around the terminals works as the insulation between the terminal and the steel body. The project may undertake the manufacture of 40,000 fusite terminals per year keeping in view the demand for this product in India.

11. CINEMA ARC CARBONS:

An Indian party has already obtained an industrial licence for the manufacture of 1.2 million pairs of cinema arc carbons and 1.8 million pairs of other carbon products. They are already manufacturing these carbons but desire to improve the quality of the products and diversify production. As such, they are on the look out for a suitable collaborator. They would also welcome financial participation by the collaborator. The basic raw materials are available in India.

12. WATCHES:

Proposals for joint venture in this field, considering the gap between the capacity available and the estimated demand, are welcome. The demand for wrist watches is estimated at 15,00,000 nos. The present licensed capacity is 12,70,000 nos. per annum out of which the installed capacity is 6,70,000 nos. only.

13. DRY BATTERIES:

This item has been removed from the banned list for industrial licensing in view of the growing demand for dry cell batteries in India as well as for export. In view of the gap between the capacity available and the projected demand, creation of additional capacity in this field is encouraged. The demand is estimated to be 650 million nos. in 1970-71 while the production in 1967 was of the order of 340 million cells only (of the existing 5 units).

14. TYPEWRITERS:

Manufacture of typewriters has now been included in the licensing list which is valid till 31st March 1969. The present production in India, which does not cover electric typewriters, is of the order of 46,951 nos. only and does not meet the growing demand. The demand is expected to go up to 0.10 million by 1970-71. Imports are banned since 1959. However, permission is given for import of electric typewriters to actual users and thus, in 1966-67, Rs.0.10 million worth of electric typewriters were imported. The actual export of typewriters in 1966-67 was Rs.0.15 million.

15. REFINING CHINA CLAY:

The sponsors are interested in setting up a plant for refining china clay required for use in the manufacture of paper, textiles etc., and propose to produce 50,000 tons of refined china clay per annum, working two shifts for 250 working days a year. The factory is intended to be set up at a location where good deposits of china clay are available nearby but it has been felt necessary to improve its quality by introduction of modern beneficiation processes. The cost of the project is estimated at Rs.6 million. The plant and machinery to be imported would be of the order of Rs.1.5 million. They would welcome financial participation in the venture by overseas firms at least to the extent of 30% of the equity capital, in addition to technical know-how assistance.

16. FRUIT AND VEGETABLE PRODUCTS:

This is a proposal to install a plant for the manufacture of fruit and vegetable products with an annual rated capacity of 6,000 tons. There is a growing demand in India for these products with a potential possibility of large scale exports. The annual requirement is estimated at 4,000 to 5,000 tons. Foreign collaboration in this venture is required in the form of capital investment to cover the cost of imported plant and equipment and in the initial stages the technical know-how also.

17. DAIRY CHEMICALS:

An Indian manufacturer of chemicals and oils etc., is interested in the production of dairy chemicals such as butter colours etc., in collaboration with a foreign party who could give technical collaboration for the purpose. There is scope for export of the finished product to USA, UK etc., thereby leading to foreign exchange earnings.

18. MISCELLANEOUS CHEMICALS:

An Indian party has obtained approval in principle for the manufacture of the following items -

i) Benzyl Chloride	...	360 tonnes
ii) Benzyl Acetate	...	166 tonnes
iii) Benzyl Alcohol	...	37 tonnes
iv) Benzaldehyde	...	40 tonnes
v) Bihenzyl Ether	...	24 tonnes
vi) Phenyl Acetic Acid	...	80 tonnes
vii) Phenyl Acetamide	...	14 tonnes
viii) Benzyl Benzoate	...	24 tonnes
ix) Hydrochloric Acid (30% By-product)		432 tonnes

The raw materials are practically indigenous, except for Acetic Anhydride and Sodium Benzoate. The total investment is of the order of Rs. 2.4 million of which Rs. 2.2 million would constitute the cost of plant and equipment. The products go into pharmaceutical perfumery and other purposes. Offers of foreign collaborators in this field either with or without investment are required.

19. PHOSGENE:

An Indian party wants collaboration for the manufacture of Phosgene and Phosgene-based chemicals. The Phosgene section of the project is planned to be based on Carbon Monoxide (CO) contained in the stack gases available at very economic rate from the Nitrogen Wash Plant of a fertiliser factory already in production. The manufacture of Phosgene is contemplated for captive use with the manufacture of -

- i) Pesticides (Carbyl) from Phosgene, Toluene, Alpha Naphthol and Methylamine (Sevin) 1 Naphthyl N Methyl Carbamate
- ii) Iso-cyanates for Urethanes, Flexible Foams etc. (2, 4 - Tolylene di Isocyanate from Phosgene and Tolylene Diamine)
- iii) Polycarbamates for Resin manufacture (from Phosgene and Bisphenol A)

The quantity of stack gases available is about 40,000 M³ per day, and Chlorine available is about 5 tonnes/day. The project capacity is to be finalised in consultation with the possible collaborator. They would like to secure the technical know-how and basic engineering for it from a suitable collaborator.

20. PLANT PROTECTION CHEMICALS:

Agricultural development is an essential condition of India's overall economic growth. Already, nearly half of India's total land area has been brought under cultivation. Inasmuch as the scope for further expansion of the area under cultivation is limited, increased output of agricultural products has, perforce, to be mobilised from the area already under cultivation. It is, therefore, the programme to intensify the use of chemicals, farm equipment etc. for promoting higher agricultural yields from these areas. As an integral part of this programme, plant protection measures, including resort to chemical control, will continue to be carried out on high priority consideration. In the scheme of plant protection and pest eradication, the use of pesticides is bound to play a very important role. Plant protection measures are to be undertaken in India on an extensive scale and on a wide-area basis.

The term pesticides embraces a wide variety of chemicals with varying degrees of toxicity and applicational value, depending upon the particular crop for which the chemical has to be used and the nature of infestation. Broadly speaking, they may be classified as follows:

Chlorinated Hydrocarbons (D.D.T., B.H.C., Lindane, Heptachlor, Aldrin, Dieldrin, Endrin etc.), Organophosphates (Malathion, Parathion, Demeton, Dimethoate etc.), Carbamates (Carbaral), Rodenticides (Zinc phosphide), Fungicides (Copper Sulphate, Copper Oxychloride & Sulphur dust), Herbicides (2, 4D; 4, 5-T MCPA etc.), Fumigants (Ethylene Dichloride, Ethylene Dibromide etc.).

The following table will give a rough idea of the types of anti-pest chemicals and their fields of application:-

<u>Chemicals</u>	<u>Field of application</u>
D.D.T.	Cotton, Rice, Maize, Sugarcane
B.H.C.	Sugarcane, Jute, Cotton, Groundnuts and vegetables
Chlordane, Aldrin, Dieldrin, Heptachlor	Sail insecticide
Endrin	Cotton, Rice, Sugarcane and Maize
Malathion	Cotton
Parathion	Rice, Sugarcane, Groundnut
Carbaryl	Cotton
Copper Salts	Rubber, Tea and Coffee

The above description is merely illustrative and the selection of proper pesticide depends also on the particular kind of pest that ravages the crop. Necessary guidance in this matter can be had from Plant Protection Organisations.

Several of these are now being manufactured in India with indigenous initiative as well as with overseas assistance by way of technical know-how and investment. In the context of the programme to set-up the production of pesticides from the present level of about 18,000 tonnes to the level of 100,000 tonnes, it is not merely a question of quantitative expansion of the types already produced indigenously but also of the introduction of newer types. Pesticides worth Rs.2,000 million are involved in this programme. Demand growth-pattern for some of the pesticides over the next 5-6 years may be visualised as below:-

Type	Estimated Demand	Production in 1965
B.H.C.	50,000 tonnes	7,500 tonnes
Lindane	1,500 ,,	..
D.D.T.	8,000 ,,	2,800 ,,
Endrin	3,000 ,,	..
Carbaryl	6,000 ,,	..
Chlordane, Heptachlor Aldrin)	1,000 ,,	..
Dieldrin, Parathion,)		
Demeton, Malathion,)	21,000 ,,	240 ,,
Phorate, Di-Methoate &c)		
Copper Oxychloride	6,000 ,,	1,300 ,,
Thiocarbamates	6,000 ,,	60 ,,
2, 4-D; 2, 4, 5-T etc.	3,000 ,,	60 ,,
Ethylene Dichloride	9,000 ,,	20 ,,
Calcium Cyanide	1,500 ,,	..
Zinc Phosphide	2,500 ,	250 ,,

Gap in relation to existing potential and estimated requirements is substantial, particularly in respect of Lindane, Endrin, Chlordane etc., Carbaryl, Parathion, Malathion, Phorates, Thio carbamates, Ethylene Dichloride, Calcium Cyanide and Zinc Phosphide.

Inasmuch as agriculture will continue to be the mainstay of a vast section of India's population, high priority is being attached to the development of pesticides, along with that of fertilisers.

21. SEED INDUSTRY:

Development of improved seeds has acquired a special meaning in the new strategy for a major breakthrough in the field of agriculture, having regard to the limitations in undertaking extensive, as different from intensive, agricultural operations and the diversity of agricultural and rainfall conditions in various parts of the country. It is in this context that the establishment of Seed Farms has become a significant part of the new agricultural programme.

Progress in the development of new types of fertiliser - responsive and hybrid seeds during the last few years has been notable and the supply of high quality seeds in varieties has had a major impact on securing substantial increases in agricultural output. In recognition of the importance of development of a dynamic seed industry, the Government of India have set up the National Seeds Corporation, which is designed to produce and supply foundation seeds of proven standard and quality to

to seed producers. Having regard to the dimensions of the task involved in the supply of proper seeds and at the right time to the millions of the farming families engaged in the cultivation of well over 150 million hectares, it is obvious that private efforts would need to be organised on a large scale to complement the activities of the National Seeds Corporation. Such efforts are specifically called for in the field of production, processing and marketing of high quality seeds for various crops.

The development of Indian seed industry on a sound technological and commercial basis, is, therefore, a field of significant interest for investors and an overall programme involving expertise for seed production, processing, marketing and supporting know-how and show-how services has, therefore, bright prospects of development. Two joint venture-proposals for establishment of Seed Farms with overseas collaboration have already been approved by the Government of India.

Yet another area of developmental interest is the manufacture of specialised items of seed processing machinery such as seed cleaners, separators, treating machines, dehumidifiers and packaging equipments. Association of overseas expertise could make a significant contribution in this direction also.

It may be noted that, by way of special incentives, the Government of India have recently classified the seed processing industry as a "priority industry" which entitles it to:

- a) Tax exemption up to 8 per cent of the profits
- b) Development Rebate at the higher rate of 35 per cent
- c) Deduction, for income tax purposes, of expenditure incurred for extension of knowledge in the field of agriculture
- d) Tax deduction of an amount equal to 1.1/5 of expenditure incurred in providing any goods, services or facilities to agriculturists.

22. BRICKMAKING MACHINERY:

Manufacturing of building bricks has been one of the traditional industries in India. A large number of brick fields situated generally near sources of availability of brick clay and river salt are engaged in production, based on hand-moulding methods and utilising fire-wood and coal for fuel. This has remained mainly a rural activity and operations are generally on a small scale. Apart from the migratory character of these operations necessitated by the absence of facilities for operation in depth for clay winning, quality output and mass production, the seasonal nature of the work has hampered regular production even in regions where the dispersal of brick fields has been uniform. Large pockets in many parts of the country depend on supplies from other areas.

Construction activity occupies a major position in developmental programmes. Serious shortages of construction materials, of which bricks and tiles are essential components, were experienced during India's Third Five Year Plan, resulting in escalation in project building costs and delays in the commissioning of the plants.

The present output of building bricks in India is reckoned to be of the order of 20,000 million numbers per annum. According to an official estimate, this would need to be doubled during the next five years. In terms of value, this would be equivalent to about Rs. 1,600 million per year, on conservative price estimates. Even allowing for introduction of substantial economy in construction costs, a programme of this magnitude would call for investment of major dimensions in the building brick industry.

Modern techniques of clay digging and processing, use of better kilns and fuel, all-weather production, permanent centres of production, mechanisation of critical parts of the production and introduction of quality control are essential requirements in such a programme. It is acknowledged that mechanised methods of production would, not only facilitate mass output and quality, but also enlarge the range of the products beyond conventional types, including special structural clay products like perforated bricks, hollow bricks, heavy duty bricks etc.

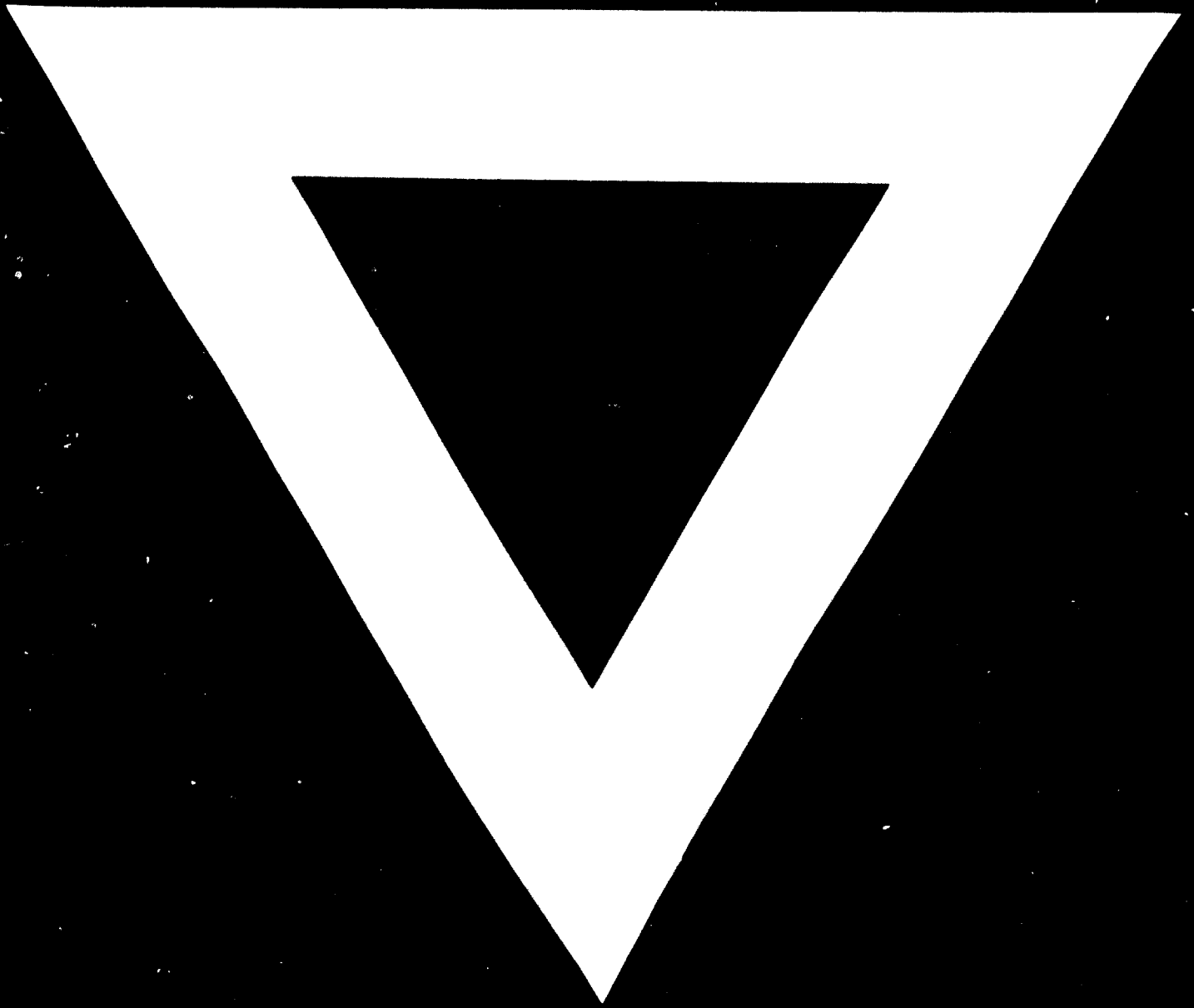
The need for establishing a network of mechanised brick plants in major towns and cities and near areas of large industrial activity and potential has been felt for sometime now. A beginning in this direction has been made with the installation of modern and mechanised factories near Delhi, Calcutta and Madras, with overseas assistance in the form of supply of plant and machinery. Such plants are generally designed for an annual capacity of about 15-20 million bricks. The investment required for putting up a plant of this size is about Rs. 1.0 million, 50 per cent thereof constituting the cost of plant and machinery.

Dependence on imports for the requirements of up-to-date brick making machinery is one of the factors accounting for the tardy progress of a modern brick industry in the country. Considering the estimates of the requirements of building bricks in coming years, the demand for brick making machinery would indeed be very large, justifying the establishment of facilities for fabricating such machinery within the country. Design of the equipment to be manufactured would be a very important factor in this programme. This is a field which calls for study and should reward the interest of entrepreneurs.

FERTILISER IMPORTS

The variety, quantity and average C&F prices of each type of fertiliser imported during the past years by the Central Fertiliser Pool are given below:

Fertiliser	Year	Quantity in M.T.	C&F Price in Rs. per M.T.
Ammonium Sulphate (21% N)	1964-65	317,078	224,43
	1965-66	852,820	303,57
	1966-67	1,203,820	474,23
Urea (46%N)	1964-65	293,996	411,14
	1965-66	251,927	501,88
	1966-67	521,630	825,57
Ammonium Phosphate (20%N : 20%P)	1964-65	39,915	488,09
	1965-66	62,442	503,27
	1966-67	216,220	779,34
Nitrophosphate (12.9% N : 12.9% P)	1964-65	30,483	395,74
	1965-66	--	--
	1966-67	--	--
Ammonium Chloride (25% N)	1964-65	--	--
	1965-66	8,117	288,61
	1966-67	21,000	420,06
Amr. Sulphate Nitrate (25% N)	1964-65	--	--
	1965-66	--	--
	1966-67	41,991	517,88
Dia-Amm. Phosphate (18% N : 46% P)	1964-65	--	--
	1965-66	--	--
	1966-67	211,537	732,78
Cal. Amm. Nitrate (26% N)	1964-65	--	--
	1965-66	--	--
	1966-67	103,761	399,00
Basic Slag (18% P)	1964-65	--	--
	1965-66	--	--
	1966-67	2,000	304,71
Sulphate of Potash (48% K)	1964-65	--	--
	1965-66	--	--
	1966-67	5,022	502,69



2 . 4 . 74