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Expert Group Meeting on the Industry Files System
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Industrial Programming

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COMMENTARY ON THE UNIDO INDUSTRY FILE SYSTEM 1/

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1/ This is an extract from the paper "International Programmes of Industry Programming Data in the Context of Mixed Economies (with Special Reference to the IFS Proposal)" submitted by Mr. Mohnot as a contribution to this meeting. The complete study is available in the files of the Industrial Programming Section.

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I. The Context

1. An attempt is often made to distinguish between programming data requirements of divergent economic systems. The procedures and techniques of programming, the economic objectives of the programmes, the motivational forces determining priorities, the relative developmental efforts and the instruments for mobilation and optimal diversion of resources differ from one system to another. The sources of data and the mechanics of collection, processing and dissemination may also, and in fact, do differ from country to country. The data complexes needed for industrial programming, however, cut across the institutional systems.

2. The attempt is made here to limit the comments to programming data demands of private investments or mixed, predominantly private, investments. The distinguishing feature of these investments is their behavioural mobility based on the primordial criterion of relative economic viability in terms of internal rate of return, a function of market-dictated costs and market-generated revenues. However, the distinction between private and public enterprises is often only notional, the former receiving financial support from government in a variety of forms - direct and indirect. This paper, therefore, covers public sector projects (unless organised on departmental non-commercial basis) established as public corporations in a mixed-economic setting. State owned and controlled enterprises are, in most developing countries, significant data sources, data candidates and data users.

3. Industrial programming may aim at one or more of several objectives: industrial expansion including installation of new capacity, rehabilitation and modernisation of obsolete equipment, increased capacity utilisation, diversification of product-mix, increased yields from inputs, improvements in productivity, better organization of specific activity areas. The emphasis in this paper on investment decisions is only on account of the pervasive character of such decisions which may be related to one of the selected objectives. This does not mean, by implication, that all industrial programming essentially involves investment decisions, or that such decisions are *primus inter pares*.

II. Basic Hypotheses

4. The organization of an industrial data system for planning should recognize inter alia the following basic hypotheses:

(i) Planning and data development are complementary processes: planning should develop a feed-back mechanism so that it will be both a depository of future reference data and a stimulant to the growth of a rationally designed data system. A system oblivious of this requisite will not be cost-conscious;

(ii) The intensity and coverage of informational systems are not only correlated with the stages of economic - or industrial - development, but in fact, they grow faster than the latter;

(iii) Industrial information has tended to grow more than proportionately to the information system in other sectors. Unless adequately disciplined, it is leading to, if not approximating, a point of data-explosion;

(iv) An industry data system is an integral part of the overall economic data system;

(v) The industry programming data system, in turn, should be an organic part of the overall industry data system; an attempt to divorce the two will generate inconsistenci s and will be wasteful of expertise, effort and cost;

(vi) Many industrial programming data producers are also principal data users.

5. Industrial programming data are not something uniquely different from other conventional data configurations and structures. They cover the anatomical structures and physiological and growth processes of industrial activities (programmes and establishments). Industrial programming embraces the whole population of industrial establishments: (i) conceived - planned projects in pre-investment stages; (ii) embryonic - under-construction projects; (iii) pre-natal - projects nearing completion; (iv) post-natal - units engaged in start-up operations; (v) infant - units

yet to reach break-even points; (vi) adolescent - units yet to reach rated capacity; (vii) adult - on-going operating units. The operations of industry data programmes, therefore, cannot be divorced completely from the conventional statistical machinery. Moreover, no statistical system, the results of which are not adequately published, should be compartmentalized and isolated.

6. One of the limitations of the existing statistical complexes is their growth from a relatively restricted structure to a highly entangled mechanism. The variety of data producers and the numerous forms in which data are presented have, in a very short span of time, left the data user bewildered. The confusion is worse confounded by the imprecise and frequently variable concepts and configurations.

7. National accounting practices differ very widely. A prerequisite of any multi-national data system with national moorings is the standardisation of concepts and classification codes amenable to mechanical and computerised coding systems. While such standardisation exercises will be wasteful after the data programming system has been fully operative, they are not necessarily a forerunner of the IFS and other data bank concepts. The two processes can run concurrently as simultaneously flowing streams, intermingling with each other at strategic confluence points, and yet following their own courses.

8. Aggregation of programming data has two distinct aspects. Aggregation may be attempted sectorally mainly for macro-economic planning and, for limited objectives, for micro-economic programming. It may also be resorted to to iron out angularities of data characteristics and data sources. The former may prove to be a wasteful effort unless it is directed towards a specific objective. Aggregation directed towards the smoothening out of data angularities is necessary if individual data image is to approximate, though not coincide with, the new data candidates.

9. It is only partially true that secret data, when integrated with non-secret data, result in altogether secret data. Aggregation and averaging procedure might release a great deal of secretive data from the non-disclosure limitation, while at the same time making the data digestable for industrial programming. Data aggregated through averaging procedures can be discriminately screened to yield a new set of usable data not directly identifiable with the original non-disclosable data. This, in fact, is an additional advantage of adopting aggregation and averaging procedures.

III. Data Requirements and Gaps

10. The two steps necessary for locating the programming data gaps are the identification of data requirements and of the nature, variety and magnitude of the current data supply. The first step is complicated by the divergent and variable data demands of different industrial programmes in different industrial sectors located in different historical and geographical contexts. The second step is complicated by utterly divergent available data patterns.

11. Statistical data requirements for industrial programming may be classified on the basis of:

(i) economic criteria: capital outlays, inputs, operational factors, factor prices, economic consequences and contributions, engineering and technical parameters;

(ii) data uses: evaluation of industrial growth potentials, priorities and targets; identification of industrial opportunities (initial or incremental); making investment decisions (or choices); preparation and evaluation of specific programmes; execution of investment programmes; review of implementation and modifying, re-designing or re-scheduling the programmes; developing policies for promotion; and regulating and, if necessary, directing industrial growth path;

(iii) data sources: public institutions, financial and other factor agencies, industrial units in various stages of planning or operations - embryonic, pre-natal, post-natal, infant, adolescent and on-going operating adult units;

(iv) the nature of data: primary data, secondary data, processed data, economic ratios and co-efficients and programming norms.

12. The sources (of which many are users) orbiting the industrial programming system are: governmental regulatory machinery at federal, state and other administrative levels, macro-economic and sectoral level planning machinery, development and industrial research organizations, development banks and other institutional financiers, chambers of commerce and industrial associations, industrial establishments, resource development organizations such as manpower development institutes, ad hoc data searches undertaken by statistical authorities, or other agencies, market (and export) promotion organizations, consultants and ad hoc or regular data sources of regional and international organizations.

13. The data requirements differ also with the data candidates: (i) the planner exploring, formulating and evaluating blueprints of economic growth; (ii) the ministerial authority - at national, provincial and local levels - taking plan decisions; (iii) the investor commissioning feasibility and other pre-investment studies and taking investment decisions; (iv) the manager executing industrial programmes; (v) the institutional financier evaluating credit-worthiness (over the life of the lending facility) and following the operational success of projects; (vi) the sectoral organization developing and planning supply of factor inputs; (vii) the evaluation authority monitoring implementation and co-ordination of programmes.

14. Annex I enumerates a large - by no means exhaustive - number of co-efficients and indicators. It does not attempt to cater to the special requirements of all industry sub-sectors and all countries, each having its own peculiar characteristics and demands. The relative importance of and emphasis on data parameters also widely vary from one industry to another.

For a steel plant the yield based on iron content is a significant factor; the controlling parameter for an industrial gas plant may be the turnround of high pressure cylinders. Even within a given industry wide variations occur: for an electrolytic fertilizer plant the energy consumption is the leading factor; for a plant producing the same end product, a specific nitrogenous plant nutrient, but based on a petroleum feedstock, energy consumption becomes an insignificant index. In many cases, different combinations and permutations of the characteristics would be necessary. Nevertheless, the enumeration does serve as a guideline for industry programming data designs. The co-efficients are establishment-oriented at micro-economic level and will, therefore, serve as a useful path-finder for IFS data sheet designs and questionnaires in different countries. Each co-efficient or indicator requires certain base data-base data being common among many indicators. The data bases, parameters or ordinates will be identified according to respective data requirements.

15. The second part of Annex I enumerates additional performance indicators for evaluation of project implementation. Annex II enumerates the principal data bases for project formulation, evaluation and follow-up.

16. The data gaps arise mainly out of:

(i) a lack of effort in channelling certain data generated from administrative records and financial and other reports of industrial units;

(ii) a lack of co-ordinated effort for iterative use of data created for specific programming or operational economic activities;

(iii) a lack of effort to standardise or to aggregate data for multiple uses; and

(iv) data obsolescence.

17. In drawing the final design goal for the IFS, a process of elimination will be adopted by excluding the data parameters - ordinates which are covered by other data agencies and data search activities, including those organized by central statistical organizations. The purpose of mobilizing a stream of data through the IFS is to create a mechanism supplementing - not supplanting - the normal data streams and their normal courses. More specifically, the data gap which the proposed IFS will bridge is the one existing between data floating with various administrative agencies engaged in industrial regulation and development and with statistical data collectors. The IFS will also make use of informational quantities which lapse by non-use. The linkage of these data will build up a mass of new data so far unavailable for programming activities. The informational quantities assimilated by other associated data programmes are intended to be the product largely of data searches organized for broad - albeit specific - programming objectives.

18. It has been realized often that a major part of the programming data gap occurs at the sectoral level and there is, therefore, a need to close the cleavage between the needs of macro-economic planning and micro-economic programming. The significant data gaps at the micro-economic level are less recognized. The resource availability at that level are limited. More problems arise out of analysis on opportunity costs and alternative cost-benefit relationships at the unit level. An industrial entrepreneur may be less concerned with socio-economic aspects remote from his internal rate of return considerations. He will ignore them unless he has an easy access to readily available information.

19. Reference material relating to regional and international experience could be a very useful tool in the hands of knowledgeable experts in the formulation of programmes, in the assessment of their economies and the rating of their priorities. Where corresponding data availability within the country is limited, often due to the absence of comparable cases, data from exogenous regional and international sources could be of immense value. With the increasing internationalization of business, the growth of multi-national corporations and an increasing flow of international trade, the

value of such experience is correspondingly growing. This needs to be tapped in a form more amenable to programming analyses. Furthermore, there are areas in which creation of international data has special value. Raw material markets, for example, are international in many cases; so are the product markets in a large number of industry sub-sectors. Illustrative cases which can be multiplied ad infinitum are the Saudi Arabian fertilizer company (partly private but mainly owned and controlled by the PETROMIN, a wholly government-owned organization) and the aluminium company in Bahrain. The markets of the products of both will be mainly internationally competitive. The raw material of the former is an extensively traded petroleum product and of the latter (semi-processed) alumina will be drawn from an international source.

20. It is arguable that the IFS, or for that matter, any comparable data system, cannot propose to supplant the private sources from which data for such large projects are to be derived. It needs, however, to be realized that industrial programming is involved at many stages. The large private sources come into play only at an advanced stage. Where they do come into play, the data accessibility is still fairly limited. Based on these programmes, other peripheral developmental activities within the whole region and not only in one country are generated with programming exercises alternating between guesses to concrete projects and involving far-reaching economic decisions.

21. From the data user standpoint, another conspicuous area of data gap relates to the informational needs of multi-national investment programmes organised under private auspices. The sponsoring entrepreneur in the developing countries does not have full and ready access to information on several characteristics such as the investment outlays involved in equipment and technical know-how and the foreign participator does not have dependable knowledge of other relevant conditions in the developing country, especially relating to local construction costs, availability and costs of local equipment and engineering services and tax loads. An international programme designed to serve as a data exchange should aim to meet this gap. This covers partly reference programming data outside the sponsoring country, partly similar data within the country and partly the virgin techno-economic data.

IV. Industry File System - Comments

22. The role and the design of the IFS can best be judged in terms of the major services for which it has been invoked. These have been identified as: (i) market research/identification; (ii) industrial project evaluation; (iii) implementation survey; (iv) feed for special industrial analysis such as input-output analysis, linear programming, systems analysis, network analysis, forecasting and projections; (v) management and products clinical services to industrial units; and (vi) provision of information on a multi-national basis. In the context of the multiple goals of the system, it is obvious that its use-utility will correspond to the number of candidates and component-parameters it covers.

23. The IFS is proposed to have the following set of files: (a) Identifier File, (b) Core File, (c) Sample File, (d) Plan Data File with "project data" and "intentional statistics", and (e) Reference Programming Data File.

24. In the Identifier File the data characteristics except one relating to the employment size are of a relatively longer validity. To achieve the stability of the file, it may be useful to substitute the employment size code with one based on some other characteristic, such as the fixed investment size. Employment magnitudes are prone to changes from year to year depending on market penetration/capacity utilization. With an employment size code of 50 - 100 workers, a unit employing 45 workers in 1968, 55 in 1969 and 48 in 1970, will slip from one size to another year after year. This is a hypothetical but not an improbable example. There would be many such marginal cases for each size. Since fixed investments are a relatively non-variable characteristic, and perhaps a more reliable size indicator of productive capacity, the change in the characteristic will reinforce the stability of the file while making the classification more representative.

25. In the IFS structural pattern conceived, at least in the initial stages, the nucleus is the Core File. For industrial programming purposes, however, the Sample File and the Reference Programming Data File may prove to be the more useful tool components. The Core File will have the balancing utility making available data in the indigenous area needed to blend and modulate the reference programming data.

26. The data contents of theIIIFS—and especially of the Core File - will depend upon a reconciliation of what is considered "desirable for planning purposes" and what is "feasible", given the costs of digesting the data into the system. If the purpose of the Core File too is "planning", it needs to be considered if the proposed component classification of the IFS should not be re-examined in the light of programming requirements. The content sequence of the Core File may follow the programming activity sequence rather than established conventional management or financial accounting concepts. This diversion from the profile to a physiological perspective will alter the file appearance from being legendary to use-oriented.

27. The versatility of the IFS and of the services of the data bank assumes greater significance inasmuch as restrictions are considered inevitable on the publication of the data. When data are published, the user knows what is in store for him; he extracts consciously what his system can assimilate. When the data are unpublished, the user has to search for it; when he searches for data in vain repeatedly, he loses interest in the source.

28. It is not assumed, as was pointed out earlier, that all data requirements can be plugged into the IFS in the very initial stages of its introduction. The system cannot be started as a mature self-contained data exchange. The data injection may be designed and scheduled by stages on the basis of the sources which can be tapped consistent with cost and manpower considerations in each participating country. Once, however, the design is known, duplication of effort in collecting data more than once from the same source should profitably be avoided. The IFS should aim at reducing, if not eliminating, a great deal of irritating medley of questionnaires introduced by a multitude of investigations, all directed at industrial establishments. Limited only by cost constraints, the IFS should develop a comprehensive rather than a selective data design.

29. Flexibility is admittedly essential, specially in the initial stages of the IFS. Risks, nevertheless, of IFS developing into a loosely scattered data system with a large mass of data availability seldom put to the programming needs should be avoided. The risk is greater if the data system is left loose at the national level without being plugged into a regional and international data processing mechanism.

30. Project outlay and evaluation reference data are proposed to be organized in the IFS under two file components: the Plan Data File and the Reference Programming Data File. The two file sets, both by nomenclature and definition, have a direct bearing with the programming uses.

31. The Plan Data File is proposed to absorb data (parallel to those contained in the Identifier and Core File sets) drawn from industrial projects in pre-investment and pre-production phases. The data will be even more useful at the "on the stream" stage when the project construction has been completed and test runs are made. These may be juxtaposed against the projected data estimates and deviations therefrom. For industrial programming, project cost estimates are helpful even from the operational point in assessing opportunity costs from new and developing techniques and inflationary cost impacts. In the event it is assumed that infant and adolescent operational units would form part of the Core File, it needs to be ensured that the Core sample does contain a fairly useful number of enterprises newly established and operating.

32. The linkage limitations of the Plan Data File and the direct reporting system are anticipated. A recourse to development banks and other institutional lenders may reduce considerably the limitations. These institutions possess data on assisted enterprises from the point the programmes are conceived to one far beyond their maturities.

33. It has been indicated that the principal uses of the Sample File will be those associated with macro-economic planning. It is likely, however, that the Sample File being fuller in coverage, albeit on sample basis only, will have greater programming uses for industrial planning at the micro-

economic level. The sample data, representative of a large aggregate, will iron out the angularities of individual locational, structural and operational bias. The sample data in brief will have greater transfer utility for application to programmed candidate establishments. From the programming standpoint, therefore, a greater emphasis on the Sample File is warranted.

34. In the context of rapidly moving structural changes, specially in the developing countries, almost ubiquitous inflationary conditions and structural transformation of the international trade, updating of the programming data has assumed very special significance. Data obsolescence is by far the most significant factor in reducing the transfer utility of reference data. The frequency of follow-up exercises will have to be studied and programmed for very carefully for each data-set.

35. The suggested publication programme for the national level IFS includes:

(i) Quarterly Industrial Report providing aggregated time-series data and key economic indicators;

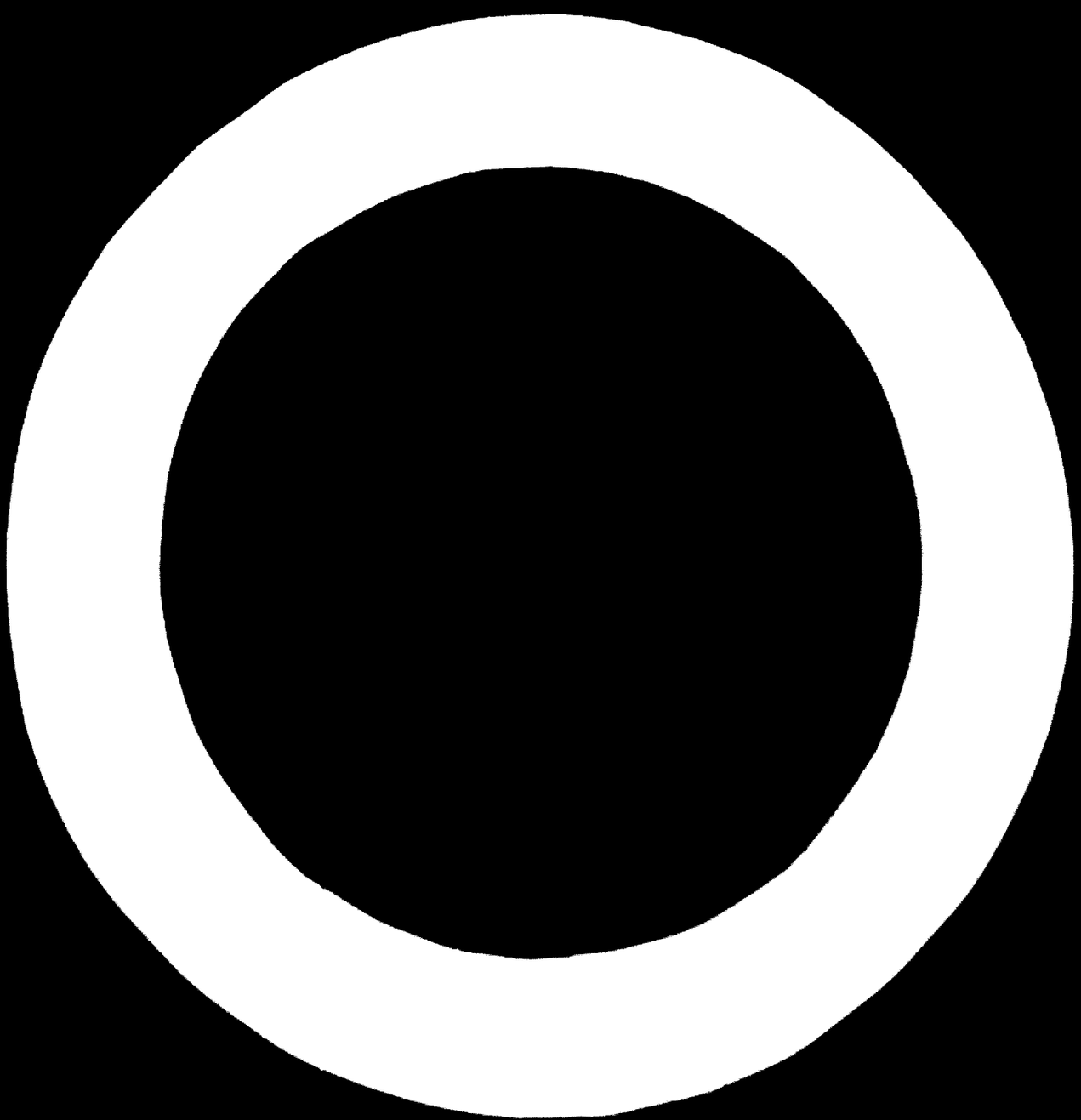
(ii) Occasional publication of a limited version of the Industrial Register;

(iii) Quarterly Data Sheets providing data on a sectoral or sub-sectoral level; and

(iv) Periodic publication of Industrial Opportunity Identifiers based on overall analysis of the IFS proper and the Plan Data File.

Two additions to the list may be considered: (i) occasional publication of operational performance data on selected potential industrial sub-sectors as based on the Core File and the Plan Data File; and (ii) regular publication (frequency to be determined according to respective needs) of classified extracts of the Reference Programming Data File for selected priority industries and sub-sectors.

36. With the multiplicity of data systems internationally sponsored, mutually dovetailing with each other and inextricably interwoven with national and regional systems the need for stock-taking is indisputable. From the stock-taking operation should develop a disciplined system consisting of organs partly self-contained and autonomous, partly integrated, but mutually complementary. The common areas should be unrestricted; the tangential points located and exclusive responsibilities identified.



ANNEX 1

Selected Structural and Operational Co-efficients for Industrial Programming

A. Structural Co-efficients

1. Capital Ratios

(a) capital-debt ratios: risk capital to debt (long-term); total capital (risk capital and fixed yield capital) to debt (long-term debt);

(b) fixed yield capital to risk capital;

(c) foreign participation in risk capital to total risk capital and to total capital; foreign participation to capital invested;

(d) fixed assets to capital invested; value of plant and machinery to total investment and per direct labour;

(e) capital to net worth or intrinsic value of share.

2. Foreign Exchange Component

(a) foreign exchange component of total outlay;

(b) value of imported equipment to total value of plant and machinery;

(c) ratio of foreign exchange component of capital expenditure to foreign exchange financing from non-governmental sources;

(d) percentage shares of foreign participation and direct foreign borrowings to foreign exchange component of capital expenditure.

B. Operational Indicators

1. Output Ratios

(a) capacity utilization: percentage of output to rated capacity of machinery and of the establishment;

(b) growth rate of output;

(c) capital-output ratio;

(d) output per direct labour, per worker and per person engaged;

(e) output to fixed assets.

2. Financial Ratios

(a) solvency margin: market value of assets to total liabilities;

(b) net cash flow to debt servicing;

(c) current ratio; liquidity or acid test;

(d) current assets to fixed assets;

(e) input inventories as multiples of monthly consumption of inputs;

(f) output inventory as multiple of monthly production.

3. Cost Indicators

(a) cost per unit of output; cost or input components (material cost, prime cost, total wage cost, direct labour cost, energy cost, works cost, royalties, distribution cost, capital charges) per unit of output and per unit of sales revenue;

(b) variable and fixed costs per unit of output and sales;

(c) wage costs per direct worker and per worker;

(d) fuel, energy and labour costs per unit value of machinery;

(e) ratio of maintenance costs to total costs of plant and machinery;

(f) total packaging costs to gross output and per unit of output.

4. Productivity and Technical Co-efficients

(a) machine hours per unit of output;

(b) man hours per unit of output and per machine hour;

(c) machine hours lost to machine hours available;

(d) ratio of direct labour, skilled labour, maintenance labour and supervisors to total labour force;

(e) yield factors: percentage consumption of prime material and various inputs to total input;

(f) electric energy per direct labour and per worker;

(g) power load factor: energy consumed to total energy available;

(h) power yield: output per unit of energy (kwh) consumed;

(i) consumption of auxiliary materials per unit of output;

(j) rejection factor; purity factor and other quality control co-efficients;

(k) wastage factor;

(l) shut-down hours or days to total working hours by major equipment items;

(m) turnround rates of storage or transportation vessels.

5. Market Indicators

(a) market penetration: sales as percentage of total product market;

(b) growth rate of sales;

(c) output inventory as multiple of monthly turnover;

(d) turnover co-efficient: capital invested to sales.

C. Internal Rates of Return and Benefit Co-efficients

1. Profit Rates

(a) profit - net and gross and before capital charges and taxes - as percentage of capital employed, of net worth, of risk capital and of sales revenue;

(b) profit - net and gross - per unit of output and unit value of output;

(c) profit per share; percentage dividend rate;

(d) market price of share as percentage of par value of share or intrinsic value of share.

2. Value Added Indicators

(a) value added ratios: value added to factor inputs and non-factor inputs, output, sales revenue and capital employed; value added to import value of products and net foreign exchange saved or used;

(b) value added per unit of output;

(c) value added per person engaged.

3. Incidence on Balance of Payments

(a) ratio of cost component of foreign exchange used to foreign exchange saved;

(b) ratio of export earnings to total investment;

(c) percentage of net annual foreign exchange earnings to total investments;

(d) ratio of net foreign exchange earnings to foreign exchange component of capital expenditure.

4. Contributions to Employment

(a) number of jobs - managerial, technical and for workers - to fixed investment and total investment;

(b) percentage of manpower trained to total employment.

5. Multiplier Effects

(a) ratio of capital invested in candidate establishment to additional investment generated in ancillary industrial sub-sectors;

(b) expected internal growth rate of investment and value of plant and machinery;

(c) ratio of total incremental investment to total incremental employment.

6. Other Factors

(a) total material haulage per unit of capital employed, per unit of output and per unit of value added;

(b) occupational hazards - accidents and occupational diseases per worker and per person engaged.

D. Additional Performance Indicators for Evaluation of Project Implementation

1. Time Schedule Indicators

(a) time-lags from original programming in (i) preparation of the project report, (ii) formation of the company, (iii) compliance of statutory regulations, such as securing the industrial lisence, (iv) concluding financial arrangements, (v) concluding collaboration arrangements, (vi) recruitment of key personnel and specially expatriates, (vii) acquisition of land and site development, (viii) preparation of engineering designs, (ix) construction of buildings and other civil works, (x) completion of utility installations, (xi) procurement of machinery, (xii) installation of the plant and machinery, (xiii) start-up operations, (xiv) maturation period;

(b) deviations from original time schedule by contractors for (i) civil engineering, (ii) equipment engineering and indenting, (iii) equipment deliveries, (iv) civil construction, (v) equipment installation, (vi) start-up operations.

2. Manpower Utilisation Factors

Total man-days utilisation and deviation from project estimates in respect of (i) project planners, (ii) administrative personnel, (iii) technicians and engineers, (iv) skilled labour, and (v) unskilled labour.

3. Capital Expenditure Indicators

Actual capital cost incurred and deviations from project estimates in respect of (i) land and factory buildings, (ii) other civil works, (iii) borrowings, (iv) plant and machinery, (v) other utilities, (vi) testing laboratory, (vii) transportation and other capital assets, (viii) technical know-how, (ix) engineering services, (x) pre-production expenditure and interest, (xi) start-up operational expenditure.

15. Requirements, physical and financial, during construction and at varying levels of output, of:

    (a) material inputs;

    (b) catalysts, chemicals, lubricants and other operational auxiliary materials;

    (c) fuel and energy;

    (d) manpower

        (i) technical

        (iii) management

        (iii) skilled, semi-skilled and unskilled workers;

16. Administrative and distribution costs at various levels of production;

17. Foreign exchange component of operational costs;

18. Financing secured from external sources as capital participation, deferred credits, borrowings - from private and official sources;

19. Prices, including shadow prices of basic and intermediate industrial raw materials;

20. Wage and salary levels:

    (a) regionally;

    (b) by nature of industries; and

    (c) employment categories;

21. Fringe benefits and social security costs;

22. Prices, including shadow prices of selected semi-manufactures and manufactures;

23. Costs of utilities from public supply systems with progressive rate systems, where applicable;

24. Tax information:

    (a) direct tax - tax on wealth and income and other properties including on assets for individuals, firms and corporations - national and foreign;

ANNEX 2

Principal Programming Data Parameters
for
Project Formulation and Evaluation

1. Projections of product demand
   (a) historical consumption trends
   (b) projections of demand potential
   (c) extrapolation of internal production and substitute competition
   (d) projections of imports-exports;
2. Possible technologies and alternative economics with special reference to size economics;
3. Cost of technical know-how and engineering services;
4. Cost of plant and machinery - indigenous and imported;
5. Rates of machinery installation and fabrication facilities - locally;
5. Capital costs of power generation and other utility supplies and costs of transmission facilities;
7. Rates of land and site development;
8. Cost of construction of factory buildings, housing and other civil works;
9. Cost of transport vehicles and equipment, railroad sidings, jetties and other facilities;
10. Cost of other fixed assets;
11. Pre-production expenditure including start-up operation costs;
12. Foreign exchange component of capital outlays;
13. Working capital requirements at various levels of production;
14. Financing conventions, regulations and costs - raising and servicing capital - for both long and short-term capital and governing risk capital and borrowings;

(b) indirect taxes - excise duties or production taxes, sales or purchase taxes, customs tariffs and other levies such as local trade or license fees;

25. Tax incentives in the form of:

(a) development rebate;

(b) accelerated depreciation allowances;

(c) tax holidays - full or partial or qualified;

(d) remission or refund of excise duties (production taxes) or of customs duties specially import duties on material inputs;

(e) tax exemptions on incomes on foreign technical personnel;

(f) tax reliefs for investments in developing industries;

26. Incentives in the form of:

(a) subsidies;

(b) preferential treatment for government purchases;

(c) preferential location of raw materials in short supply;

(d) other special preferences for transportation and other facilities;

(e) free or subsidised provision for training and manpower facilities;

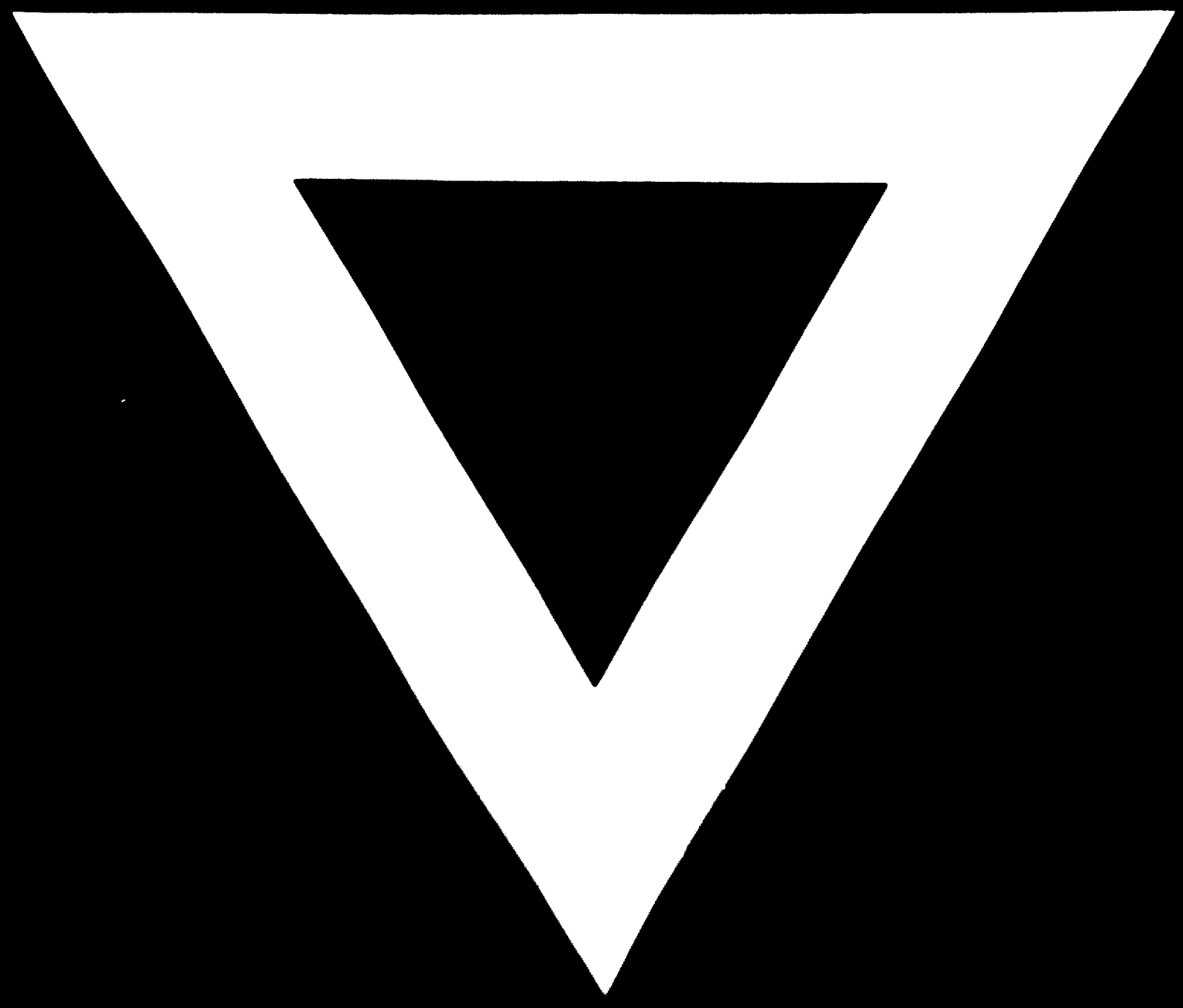
(f) price controls, tariff, quotas, import restrictions, protective duties;

27. Transportation costs;

28. Marketing and distribution costs;

29. Time schedules (or networks);

30. Affluent problems and health hazards.



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