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UNIDO/ILO INDUSTRIAL SECTOR REVIEW AND PROGRAMMING MISSION TO GHANA

Report

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This report has been prepared by the Regional and Country Studies Branch, Industrial Policies and Perspectives Division and Africa Programme, Area Programmes Division of UNIDO on the basis of inputs provided by UNIDO consultants: Ms. Elizabeth Allotey, Dr. Robert Arunga, Dr. Helen O'Neill, Mr. Eric Wightman, Mr. Kwasi Poku, and Dr. Ferdinand Tay; and ILO consultant, Mr. Raymond Milne.

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PREFACE

The Government of Ghana and the UNDP Office in Accra, have requested UNIDO and ILO to analyze the current economic, institutional and industrial policy trends at the industry and subsector levels, to reveal problems and constraints to industrial development and on this basis to identify priority areas for technical assistance in industry within UNDP's Fifth Country Programme 1992-1996.

The present report was prepared on the basis of an UNIDO / ILO mission. The findings and recommendations of the mission explicitly reflect the priorities expressed by the Government of Ghana in its draft Industrial Policy Statement and in other policy documents as well as the priorities of Ghana's international technical co-operation partners.

The mission's report is structured as follows: Chapter 1 presents an assessment of the impact of macroeconomic policies on industry and underlines the major medium-term challenges faced by the country. Chapters 2 and 3 provide an analysis of the key industrial policy issues and assess national capabilities to implement policies. Chapter 4 and 5 analyse in detail the manufacturing sector and its key subsectors. Chapters 6 and 7 assess the possibilities for enhancing human resources for industrial development, particularly emphasizing the importance of the integration of women in the industrialization process.

Chapters 2 to 6 are concluded by identifying major problems and constraints as well as actions to address them. The final chapter, Chapter 8, presents identified priority areas for technical assistance to industry. These broad areas address key policy issues and reflect technical assistance needs of manufacturing industry and important subsectors. The formulation of projects and activities within each broad area as well as identification of resource requirements will need to be undertaken as an essential follow-up to this report. This will enable the Government of Ghana and UNDP to design and initiate the implementation of the next Country Programme without any delay.

The mission team visited the Republic of Ghana during the period 31 July to 30 August 1991. The mission was supported by the UNIDO Country Director for Ghana, Mr. Mohammed Kamali, who visited Ghana in the period 7-24 August and the ILO Regional Adviser, Mr. Cornelius Dzakpasu in the period 8-30 August 1991. The mission was also assisted by Mr. Cornelius Adablah, National Programme Officer, UNDP Office in Accra, who provided inputs to the report and Mr. Thomas Bernklau, UNIDO Junior Professional Officer.

The mission would like to express its gratitude to Captain Butah, PNDC Secretary for Industries, Science and Technology, Deputy PNDC Secretary, Dr. Kwabena Adjei, and their staff as well as to officials in key ministries and Government agencies for their support. The mission is also grateful to representatives of Ghana's development assistance partners for their advice and support.

Finally, the mission would like to express its sincere gratitude to the UNDP Resident Representative, Ms. Lynn Wallis, for her unwavering support and encouragement.

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LIST OF ABBREVIATIONS

AGI	*Association of Ghana Industries*
BOG	*Bank of Ghana*
CIDA	*Canadian International Development Agency*
CFTC	*Commonwealth Fund for Technical Assistance*
CSIR	*Council for Scientific and Industrial Research*
DAPIT	*Development and Application of Intermediate Technology*
DIC	*Divestiture Implementation Committee*
EC	*European Community*
EDAC	*Entrepreneurship Development Advisory Centre*
EDP	*Entrepreneurship Development Programme*
EMT	*Economic Management Team*
EPC	*Environment Protection Council*
EPV	*Export Production Village*
EPZ	*Export Processing Zone*
ERP	*Economic Recovery Programme*
FFC	*First Financial Company*
FRI	*Food Research Institute*
FUSMED	*Fund for Small and Medium Enterprise Development*
GBPWA	*Ghana Business and Professional Women's Association*
GCB	*Ghana Commercial Bank*
GDP	*Gross Domestic Product*
GEA	*Ghana Employers Association*
GEDC	*Ghana Enterprise Development Commission*
GEPC	*Ghana Export Promotion Council*
GIC	*Ghana Investment Centre*
GIHOC	*Ghana Industrial Holding Corporation*
GIMPA	*Ghana Institute of Management and Public Administration*
GNCC	*Ghana National Chamber of Commerce*
GRATIS	*Ghana Regional Technology Industrial Services*
GSB	*Ghana Standard Board*
GTZ	*Agency for Technical Cooperation (Germany)*
IDA	*International Development Association*
ILO	*International Labour Organization*
IMF	*International Monetary Fund*
IRI	*Industrial Research Institute*
ITC	*International Trade Centre*
ITTUs	*Intermediate Technology Transfer Units*
MDPI	*Management Development and Productivity Institute*
MFEP	*Ministry of Finance and Economic Planning*
MIST	*Ministry of Industries, Science and Technology*
MMSW	*Ministry of Mobilization and Social Welfare*
MOA	*Ministry of Agriculture*
MTADP	*Medium-Term Agriculture Development Programme*
NACVET	*National Co-ordinating Committee on Vocational Education and Training*
NaTCAP	*National Technical Cooperation Assessment and Programming*
NBSSI	*National Board for Small-Scale Industries*
NCWD	*National Council for Women in Development*
NGO	*Non-Governmental Organization*
NIB	*National Investment Bank*
NPART	*Non-Performing Assets Recovery Trust*
NSCB	*National Savings and Credit Bank*
NVTI	*National Vocational Training Institute*
ODA	*Overseas Development Administration*
PAMSCAD	*Programme of Action to Mitigate the Social Cost of Adjustment*
PNDC	*Provisional National Defense Council*

LIST OF ABBREVIATIONS
(continued)

SAP	*Structural Adjustment Programme*
SEC	*State Enterprise Commission*
SIL	*Special Import Licence*
SMEs	*Small- and Medium-scale Enterprises*
SOE	*State Owned Enterprises*
SSIs	*Small-Scale Industries*
TCC	*Technology Consultancy Centres*
TCDC	*Technical Cooperation Among Developing Countries*
TEDB	*Timber Export Development Board*
TUC	*Trade Union Congress*
UNDP	*United Nations Development Programme*
UNFRA	*United Nations Population Fund*
USAID	*United States Agency for International Development*
WWBG	*Women's World Banking Ghana Ltd.*
WWB	*Women's World Banking International*

CHAPTER 1
ECONOMIC POLICY FRAMEWORK

1.1 MAJOR ISSUES OF INDUSTRIAL POLICY

If Ghana is to sustain the momentum of its economic reform and restructuring programme, policy-makers and industrialists must confront the following major policy issues in the medium term.

Priority status needs to be accorded to the manufacturing sector as an explicit recognition of its pivotal role in promoting economic development. Ghana's main economic activity is agriculture yet maximizing value added in this sector and the basic generation of larger agricultural surpluses can only be achieved on a sustained basis through increased processing of agricultural products and the development of an engineering base.

Within manufacturing, the private sector needs to be supported to enable it to play the leading role in industrial development assigned to it by the Government in its draft Industrial Policy Statement.

Once agreed, the elements of policy reform have to be transformed into concrete action in order to achieve effective structural change. To expedite this process, confidence and co-operation must be fostered between government and the private sector, between the private sector and the banks, and between producers and consumers of domestic produce and products.

Consequently, to underpin the importance of the private sector, co-ordination and dialogue between the public and private sectors have to be improved, especially in terms of information flows on topics such as investment and export opportunities as well as incentives and changing conditions and changing responses. Co-ordination should also be improved among ministries, especially at the level of the highest officials; and among the scientific and training communities and their partners in industry so that needs are more correctly perceived and more effectively served.

Finally, an environment conducive to industrial development must be developed. This should include rewarding the manufacturer relative to the trader, rewarding risk-taking, rewarding innovation and the pursuit of excellence in design and production, developing an awareness and assurance of quality, establishing practices of waste treatment, developing a credit culture, and developing a culture of maintenance.

1.2 IMPACT OF RECENT MACROECONOMIC POLICIES ON INDUSTRY

Ghana provides a classic example of structural adjustment with growth. The impact of the ERP and the SAPs has so far been generally impressive. GDP has been growing strongly. Liberalization policies have freed up prices, provided incentives to manufacturers, and improved the supply of imported inputs. Capacity utilization rates have risen significantly. Non-traditional exports have begun to take off. Divestiture and privatization of SOEs is underway, albeit slowly.

Yet despite these achievements, a number of problems remain and a number of risks threaten the sustainability of the programme. Public finances remain balanced on a knife edge and dependence on inflows of foreign capital remains very great. Inflationary pressures, fuelled by continued devaluation of the exchange rate, are proving difficult to contain. High nominal interest rates are imposing unbearable burdens on many manufacturers especially those with slow turnover. Trade policy reforms, although certainly a step in the right direction, have exposed many enterprises in a weak private sector to the shock of trade liberalization too quickly. Additional refinement of trade policy reform is now required. Finally, while the investment climate has improved, private sector manufacturers still appear to be reluctant to invest because

of continued uncertainty about the economy and about their capacity to cope with the short-term costs of some of the macroeconomic policy reforms.

1.3 PROBLEMS OF THE TRANSITION

The first phase of the ERP (1984-86) concentrated on economic stabilization. Given the state of public finance, both internal and external, and the extent of price distortions, its objectives of restoring fiscal and monetary discipline were ambitious - this called for reducing the deficits on the balance of payments and the current budget, bringing external arrears to more manageable levels, and shifting relative prices in favour of production and exports.

On the other hand, the stabilization programme proved relatively easy to implement once the decision to go ahead was taken. Progressive devaluation, dismantling of administered prices, and of distribution and price controls, progressive elimination of subsidies, improvements in the system of tax collection and selective increases in taxes and charges, raising public sector pay, and raising interest rates in stages until they become positive in real terms - all of these policy mechanisms and instruments could be put into effect by unilateral government action.

Once the benefits of the stabilization stage began to appear, the movement toward deeper structural reform could be pursued. The policy objectives swung toward improvement of the investment climate, encouragement of the private sector to be the prime mover in the economy, increased processing of domestic raw materials, and exports of non-traditional products. Many of the achievements of the first stage of stabilization have proved beneficial in terms of promoting structural reform at the sectoral level, including regeneration of the manufacturing sector. In other ways, however, they are creating such serious transitional problems that they are acting as constraints to the process of structural change.

Ghana is now at the difficult transition stage in its structural adjustment programme. Admittedly, there have been many positive achievements and benefits and it is generally agreed that the thrust of macroeconomic policy is correct. Nevertheless - as in all transitions - benefits are accompanied by costs. As one problem is solved, a second generation problem emerges. For many enterprises in the private sector, the transitional costs now appear to be greater than the benefits they have so far undoubtedly gained.

Clearly, there is a need to reassess and refine some macroeconomic policies so that, during this difficult transition stage, policy reform neither crushes the potentially viable enterprises nor loses its momentum as attempts are made to avoid casualties. Thus, while the general policy thrust is acknowledged to be correct, some fine tuning is now appropriate.

Two matters are of particular concern to the private sector, and to small-scale manufacturers in particular. One is the impact of trade liberalization on local enterprises which, in turn, raises the issue of protection. The second is the impact of monetary policy and banking reforms on investment intentions. This raises the issues of credit availability and its terms. In both cases, it is not the general thrust of policy reforms which is being questioned but rather the way in which policy instruments are being used to implement reforms and to achieve policy objectives.

The strategy of industrial development in Ghana needs new direction. The industrial sector not only needs to be accorded priority status, but industrial strategy itself has to become more targeted in its approach. This exercise should also include a reappraisal of potential protective structures. Greater focus must be given to priority sub-sectors and this should logically be accompanied by a structure of protection which both promotes and supports this new strategy.

Modernization of the industrial sector requires absorption and application of new technologies. The difficult stage of technological learning needs the support of carefully targeted protection to encourage the application of new technologies.

The other major concern of the private sector - especially the small-scale entrepreneurs - is the scarcity and high cost of credit. Re-assessment and modification of monetary policy and some re-direction of the banking reform process is called for. Once again, however, the general thrust of current policy in these areas is acknowledged to be correct. Refinement, not reformulation, is what is required.

Unfortunately, the options are limited. The improved availability of credit is dependent on an increase in savings. To attract savings, banks must offer positive real interest rates. Even where credit is available, most small-scale manufacturers are finding the current high nominal rate of interest too high. This is largely due to the Bank of Ghana's tight monetary policy to curb the prevailing high rate of inflation. The Bank of Ghana has also limited the capacity of commercial banks to lend by imposing credit ceilings. Also, the necessity to maintain adequate capital ratios as stipulated in the Banking Law (L.225) approved by PNDC in 1989 is an additional restrain on the flow of credit from the commercial banks. Bringing down nominal rates is, however, constrained by continuing high inflation. High inflation, in turn, is one of the "second-generation" problems inherited from correcting the over-valued exchange rate. Continuous devaluation of the Cedi - a necessary instrument of stabilization -raises the prices of all tradable goods in the economy and makes it difficult to reduce inflationary pressures - and, therefore, nominal rates of interest.[1]

Manufacturing industry and especially small-scale manufacturers clearly need a more accommodating credit regime during this difficult transition stage. Many manufacturers are already trying to service foreign currency loans taken on in the period prior to devaluation of the Cedi. The structure of interest rates and other conditions attaching to credit should be re-assessed. In the shorter term, an assessment should be made of the feasibility of increased allocation of special funds for long-term lending to small-scale and informal manufacturers, including women entrepreneurs. One result of a reform of the credit system would be the facilitating of linkages between small-scale entrepreneurs and medium and large-scale entrepreneurs. Currently, less than one per cent of the World Bank/IDA FUSMED facility is being on-lent to small-scale manufacturers by participating financial institutions. The feasibility of earmarking part of that facility for small-scale manufacturers at concessional rates should be examined immediately.

The structure of the banking sector also needs to be assessed. The concept of development banking needs to be more firmly incorporated into the banking structure. Currently the sector is dominated by commercial banks geared to short-term lending at variable interest rates. There is a need to develop and strengthen banking activities to include an industrial development bank, geared towards long-term lending to small-scale industrialists, especially in priority sub-sectors. The conditionality attaching to loans from this bank should be tailored to the special needs of individual sub-sectors and borrowers in terms of interest rates, security, repayment periods, and so on. Further reform of the banking sector should be aimed at improving the capability of banks to respond quickly and more flexibly to the needs of the local manufacturing sector and at increasing their capacity to appraise and monitor loans according to strict commercial criteria.

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[1] Since this report was finalized, UNIDO has received information that the Bank of Ghana, in recognition of the problems caused by high interest rates, has reduced rates from 35 per cent to 20 per cent. The commercial banks have been also reducing their interest rates making credit less expensive to boroowers. In addition, the restructuring of banks has improved their liquidity positions, thereby enabling them to lend more to the creditworthy customers, in particular, private entrepreneurs.

CHAPTER 2
KEY POLICY AREAS IN THE INDUSTRIAL SECTOR

2.1 THE PRIVATE SECTOR AND INVESTMENT PROMOTION

It is the government's declared intention that the private sector will be the main engine for industrial development and economic growth in the 1990s. Indeed, the government has begun divesting itself of public manufacturing enterprises. Yet, the attitude of private sector investors in the sector remains cautious. Investment is still much lower than the levels needed to maintain rates of growth that could absorb the expanding labour force at higher levels of productivity. Moreover, as capacity utilization rates rise, substantial increases in new investment will be needed to sustain growth.

One of the preconditions of a revival of investment in the manufacturing sector is the creation and maintenance of an investment climate that is capable of attracting and holding the confidence of the private sector, both domestic and foreign. Such a climate is fostered, not only by the implementation of supportive macroeconomic policies and macroeconomic structural reforms but also by the provision of supporting services and institutions, that are specific to the industrial sector itself. Already the government has launched a number of policy initiatives to improve the investment climate but an intensified investment promotion exercise must also be mounted through the combined efforts of the Ghana Investment Centre (GIC), trade fairs, and embassies in foreign countries.

Current situation

An examination of projects approved by the Ghana Investment Centre (GIC) in the period 1986 through 1989 shows that over 100 projects were approved in each of the four years. However, the investment situation can best be described as one that had stabilized by the end of the period, having earlier shown a steady downward trend. The numbers of approvals were respectively 154, 144, 100, and 117 while the values were US$376 million, US$368 million, US$174 million, and US$199 million. A drying up of various lines of credit advanced by multilateral institutions for the rehabilitation of wood processing and other extractive industries around 1988 was the main cause of the decline. By 1991, many of these projects should have been realized on the ground but the mission was unable to ascertain how many had actually reached the implementation stage.

For the three years 1986 through 1988, around three-quarters of the approvals related to the manufacturing sector. In 1989 that proportion fell to 61 per cent. Most projects were new enterprises; less than 40 per cent related to expansion or rehabilitation of existing enterprises. The foreign currency component of these investments is high, ranging from 62 per cent to 69 per cent, with foreign equity participation on the increase. Local currency loans and credits have declined partly, according to the GIC, because of the credit squeeze imposed by the financial institutions in their attempt to recover outstanding credits.

The ownership of approved projects has been shifting gradually from a dominance by wholly Ghanaian ownership to joint-ventures between Ghanaian private entrepreneurs and foreigners. The latter proportion grew over the period from 34 per cent to 55 per cent. The GIC attributes this trend to the need of Ghanaians to attract foreign equity capital and technology in the face of dwindling credit facilities from local sources. A lack of confidence in going it alone is clearly another factor. The two categories of wholly Ghanaian-owned and joint ventures account for 96 per cent of total investment approvals: public sector, wholly foreign-owned, and joint ventures involving the State, private Ghanaians, and foreigners are insignificant in the current investment situation in Ghana.

Analysis of projects approved by the GIC reveals certain problems being experienced by the private sector in Ghana. Credit is perceived as the single most important constraint. The results of a series of surveys conducted by the World Bank in late 1989 (World Bank, 1991, p.38) throw further light on the status of the investment climate as perceived by existing businesses and explain in large measure their difficulties in undertaking new investments in the manufacturing sector. Almost 90 per cent of respondents cited credit as the major constraint on new investment while over 60 per cent saw taxes as a moderate or major problem.

The Government's attitude toward private investment also caused entrepreneurs some concern as did general uncertainty about the economy. Almost a quarter of large-scale firms saw obtaining other approvals, including investment code benefits, as a moderate or major problem. Information on and access to technical assistance was a concern for all except the large-scale businesses. While demand was a problem for all size groups, it was perceived as particularly difficult for micro enterprises.

Government objectives and policies

The Government has committed itself not just to facilitating private investment through further improvements in the macroeconomic enabling environment but to supporting and strengthening those institutions, public and private, whose task is to actively promote private investment. It is also committed to divestiture and privatization of SOEs.

Under the Investment Code of 1985, private investment is encouraged through a number of tax incentives and investment guarantees. Revision of the Code in 1991 was designed to streamline and simplify investment regulations in order to create universal rules applicable to local and foreign investors alike. Joint ventures are particularly encouraged. The Government has indicated its intention to further rationalize the taxation system and to modify import duties with a view to achieving a lower and more uniform level of protection. What is actually needed is a fundamental overhaul of the structure of protection so that it serves the needs of a more targeted industrial strategy approach. The Ghana Investment Centre is to become a "one-stop shop" capable of responding to prospective foreign investors within 40 days. Its intention is to move increasingly from merely reacting to the proposals of prospective investors towards active investment promotion and monitoring.

To underscore its commitment to the private sector, the Government has committed itself to reducing state ownership of manufacturing capacity through privatization and, where necessary, liquidation of non-viable SOEs. Through the work of the State Enterprises Committee, the Divestiture Implementation Committee, and the Non-performing Assets Recovery Trust (NPART), the divestiture programme, although slow, is underway. Under the corporate restructuring programme, a new corporate entity, the First Finance Corporation (FFC) is to be set up with predominantly private sector ownership. In collaboration with NPART, the FFC is expected to provide venture capital and other financial, managerial and technical services to expedite restructuring of distressed but potentially viable enterprises in the private as well as in the public sector.

Problems and constraints

The regulatory framework

- Despite Government efforts to create an enabling environment for private investment, some of the existing regulations still act as a disincentive. In particular, they include complicated business establishment and investment licensing procedures through the GIC and other central government agencies; administrative controls over technology transfer agreements which restrict the choice of technology and know-how; long and cumbersome procedures for foreign exchange transactions; labour laws and regulations which require compulsory approval in the MMSW and are time consuming.

Co-ordination

- Exchanges of views and information between government ministries and agencies and the private manufacturers tends to be irregular and ad hoc. Co-ordination and dialogue are weak.

Institutional weaknesses

- A number of public and private bodies are associated with promotion and development of the private sector and divestiture of the public sector. These include the SEC, NPART, DIC, GIC, AGI, and the Chamber of Commerce. The SEC and NPART find it very difficult to recruit suitable staff. Data bases in all the organizations are weak or non-existent and assistance is needed in establishment or strengthening of information systems. The accounting data base is also weak at the enterprise level, specially in the public sector, which is another constraint on divestiture. Training has virtually ceased in the SOEs. Weaknesses are also still apparent in the banks whose tendency to purchase Treasury Bills rather than lend to private business is acting as a severe disincentive to private investment.

Divestiture

- Problems and constraints associated with the programme of divestiture include: lack of documentation relating to titles or modes of acquisition of SOEs; cost to government of end-of-service benefits and other enterprise liabilities; shortage of finance and credit by prospective private-sector purchasers.

Proposed actions

Investment climate and regulatory framework

- The speeding up of the process of divestiture and privatization (see below);

- improvement of the regulatory framework for private investment by further reductions in company taxes; income taxes, sales taxes, and import taxes and revenue compensatory actions such as strengthening tax administration and collection; allowing exporters of non-traditional manufactures to retain sufficient foreign exchange earnings to finance necessary imports for further production; further easing of regulations relating to employment of expatriate personnel; and further speeding up of GIC investment approaches system.

Credit policy and banking system

- The earmarking of special funds - for example, a part of FUSMED for onlending with softer conditionality to SSIs and informal enterprises, especially those owned by women;

- the strengthening of the investment banking segment of the banking system;

- the strengthening of the project appraisal and monitoring capabilities of the banks.

Institutional reforms

- The strengthening of the capacity of MIST to formulate and monitor industrial policy;

- improvement of the ability of GIC and other government agencies to assist private manufacturers to find investment partners by progressive targeting of priority industrial branches and specific foreign enterprises with the assistance of Ghanaian embassies abroad, trade fairs etc.;

- strengthening the capabilities of GIC and AGI to undertake investment project appraisals and project monitoring;

- strengthening the capability of the GIC, AGI and Chamber of Commerce to assess the impact of government policies on the industrial sector;

- developing the capability of private enterprises to formulate business plans and present them to venture capital organizations such as First Finance Corporation (FFC);

- the establishment of business advisory and information services, on joint venture negotiations and commissioning of feasibility studies for entrepreneurs. The best location for such a service, whether in GIC, FFC, or AGI, needs to be identified;

- strengthening of institutions concerned with implementing processes of divestiture and privatization - DIC, SEC, and NPART - by improving their data bases, information systems, and staffing;

- assessment of the training requirements of DIC, SEC and NPART and implementation of suitable training programmes;

- rehabilitation of selected SOEs.

2.2 SMALL-SCALE INDUSTRY

Small-scale industries (SSIs) play a dominant role in local business activity in Ghana. They mobilize human and other resources for industrial activities in urban and rural areas that are normally difficult to absorb into the agricultural and large-scale industrial sectors. Most SSIs do not require large capital investment or highly specialized managerial and technical skills. They tend to be regionally dispersed thereby reducing distribution costs for both inputs and outputs as well as lowering regional imbalances and improving inter-regional income distribution. SSIs undertake local processing of agricultural products thereby increasing product value to the grower. They are an important source of income and employment for the lowest income groups, especially women. Finally, they are a major source of technical and entrepreneurial training and assist in the development of industrial skills at relatively low cost.

Current situation

It is often difficult to find a general definition of the small-scale sector of manufacturing. In Ghana it generally describes enterprises employing fewer than 30 people, although the 10-29 group is sometimes described as "medium-scale". The World Bank further sub-divides the 1-30 group into small (10-29), very small (5-9), and micro (1-4). For purposes of its Fund for Small and Medium Enterprise Development (FUSMED) Project, the Bank defines SMEs as those with an estimated value of total assets (excluding land) plus investment under the Project of up to US$2 million equivalent in 1988 constant prices.

As pointed out in Section 4.2, there appears to be a "missing middle" in the manufacturing sector in Ghana. Out of the total of 8351 manufacturing enterprises, 7376 or 88 per cent are in the 1-19 person size category; 310 or 4 per cent are in the 20-29 category; and 665 or 8 per cent are in the 30-plus group. When the data are classified by numbers engaged in the various size

groups, the "missing middle" is still evident. Out of the total numbers engaged in manufacturing, 21 per cent are in the 1-19 category; 6 per cent in the 20-29 category; and 73 per cent in the 30-plus group. If medium-scale is defined as 30-99 - the more common international definition - the "middle" employs 12 per cent. Even defined as 20-99, it rises to only 18 per cent.

There is very little information available on the recent performance of the SSI sector.

A late-1989 survey by the World Bank (World Bank, Sept. 1990, Paper No. 33) set out to examine the impact of the structural adjustment programme on small-scale enterprises. The sample used could not be considered as statistically representative, covering as it did only 82 enterprises, including 39 in Accra-Tema, 1 in Kumasi, 25 in Nsawam, 10 in Oda, and 7 in Mankessim. The number of workers in sample firms ranged from 1 to 45. Following statistical divisions used in Ghana, the sample contains 33 micros, 26 very small, 16 small, and - included for comparative purposes - 7 medium and large (30-plus) enterprises. The main conclusions therefore relate to the 1-29 group within the sample. Although the results are clearly not conclusive, as discussed below, they do provide useful insights.

The implementation of the SAP has created difficulties for the sample enterprises in terms of access to credit at affordable rates of interest. Profits have been squeezed in many cases as a result of rising costs and reduced demand. On the whole, the small and medium-sized enterprises appear to have adapted better than the micro enterprises despite the fact that the latter are less dependent on imports. As a result of devaluation, the prices of all tradable goods rose. Those enterprises that were able to respond positively to the changing situation did so by altering their product mix and capturing some niche markets that opened up in the new exchange rate regime - such as specialty goods, custom-made items, and low-cost import substitutes.

One very important finding from the survey was that, among the sample enterprises, sub-contracting linkages between small and large ones were almost non-existent. This is a weakness that needs priority attention.

Government and institutional measures

The Government has a clear-cut objective of promoting small-scale manufacturing industry and is intent on launching an integrated national initiative to encourage competitive and progressive SSI development.

The Government has indeed taken a number of initiatives to date and established a number of SSI-focused institutions. Early public attempts to improve access by SMEs to credit were not successful. They included the Bank of Ghana's 1969 Credit Guarantee Scheme and the small business loan scheme administered by the Ghana Enterprise Development Commission in 1970. Neither operation succeeded in reaching the small enterprises because of the high cost of servicing such credits.

A number of agencies have been established to provide support to the micro and informal sub-sector through provision of specialist technical services, such as training and equipment development, and provision of advisory and extension services. They include the National Board for Small-scale Industries (NBSSI), Department of Rural Housing and Cottage Industries (DRHCI), Ghana Regional Technology Industrial Services (GRATIS), and the Intermediate Technology Transfer Units (ITTUs). The National Council for Women in Development (NCWD) was set up as a policy-making body on women's issues and consequently has a role to play in supporting the development of SSIs for women.

The Bank of Ghana operates a World Bank/IDA Fund for Small and Medium-sized Enterprise Development. This project was set up to assist micro, small- and medium-sized enterprises in the private sector by providing a broad range and integrated package of financial and technical assistance services. Only a tiny proportion of its funds have so far reached small-scale enterprises. There are a number of reasons for this. Among them, the most important are the difficulties SSIs have in formulating viable projects and the relatively higher cost of providing

such loans. Nevertheless, if properly targeted, the project has potential to assist in significant ways. Its elements include a line of credit for lending to SMEs through the intermediary of the participating financial institutions (PFIs), a pilot mutualist credit guarantee scheme, and technical assistance to promote long-term lending by PFIs to SMEs, to improve extension services to SMEs and women entrepreneurs, to develop pilot projects and business advisory services, and to conduct policy studies.

Problems and constraints

SSIs tend to experience many of the same problems and constraints as do the larger enterprises in the manufacturing sector - but usually with greater intensity. With the exception of the regulatory framework, the smaller the enterprise, the greater tends to be the impact of the common problem.

Credit

- Shortage of credit and its high cost impose very severe constraints on SSIs, especially the micros, since banks are particularly reluctant to advance loans without collateral. The conditions attaching to the Bank of Ghana-administered FUSMED create special problems for SSIs. Twenty-five per cent of the cost has to be contributed by the enterprise. Under new arrangements announced in 1991, the value of any existing enterprise can be counted under this condition. However, that does not assist those establishing new enterprises, especially in the SSI sector.

Incentive environment

- Many SSIs perceive the incentive environment as not being sufficiently supportive. Company taxation is a major issue for SSIs selling on the domestic market.

Skills

- Skill levels are low, especially in relation to development of new products, basic management, and accounting; and SSIs have little knowledge of current technologies and of export markets.

Sub-contracting linkages

- Sub-contracting linkages between SSIs and medium- and large-scale enterprises are almost non-existent.

Proposed actions

Credit

- Explore possibilities of improving access to credit and softening the conditionality attaching to credit for SSIs, especially in rural areas and for women entrepreneurs.

Technical and advisory services to SSIs

- Improve knowledge of the tax system in relation to SSIs by establishing a taxation advisory service (in an institution such as NBSSI) and simplify tax documentation and book-keeping procedures;

- strengthen, through increased staffing and staff training, the services provided by public and private institutions such as NBSSI, AGI, etc. to SSIs under the following headings: technical advisory services, product development, business development services, trouble-shooting, accounting procedures, and management information systems;

- strengthen the entrepreneurship development programme for SSIs through training in accounting and management, through carefully targeted linkages with other SSIs, either inside the country or abroad through the "sister-industry" approach, in-house training, scholarships and study trips abroad.

2.3 EXPORT PROMOTION

The promotion of non-traditional exports from the manufacturing sector is essential in order to increase foreign exchange earnings. Traditionally, Ghana has relied heavily for its earnings of foreign exchange on exports of primary products such as cocoa and timber. The price of cocoa has fallen on world markets and the medium-term outlook is not buoyant. Exports of round logs are to be banned, mainly for environmental reasons and to increase value added. It is imperative therefore that the export base be diversified.

Current situation

Cocoa normally accounts for 50 to 70 per cent of the value of total exports, and gold and timber together for around 20 per cent. Until 1990 most non-traditional exports came from the agriculture sector and consisted of products such as pineapples, cocoa waste, tuna, lobsters, shrimp, prawns and other fish. 1990 was the first year in which exports of processed and semi-processed goods exceeded those from agriculture under the non-traditional heading, indicating that value added in exports is increasing.

The main products are aluminium sheets and coils, salt, furniture parts and plywood, canned tuna, and handicrafts such as carvings, cloths, and baskets. Other processed and semi-processed non-traditional exports include processed rubber, non-ferrous metal scrap, palm oil, gari, tobacco, crude glycerine, agricultural processing machinery, and matches. In addition to an increase in the number of non-traditional items (from 132 in 1987 to 167 in 1988), the number of exporters rose from 725 to 1381 during the same period.

Ghana's biggest markets are still the UK, Germany, the Netherlands, and the US. Among the non-traditional markets where new exports can be promoted are those in ECOWAS countries. In 1990, they bought 24 per cent of Ghana's non-traditional exports; among them the five most important markets were Niger, Togo, Cote d'Ivoire, Burkina Faso, and Nigeria. Intra-subregional trade expansion is vitally important, not only for the promotion of the manufacturing sectors in the ECOWAS member states, but also for the development of other economic activities in the fields of agriculture, utilities, transport, and telecommunications, which are linked through inputs and outputs to the manufacturing sector.

Government objectives and policies

The Government's objective is to boost the growth of non-traditional exports by both existing and new exporters. Its approach to pursuing this objective is wide-ranging, consisting of macro-economic and sectoral policy reforms, improved incentives, and institutional changes.

A number of policy and procedural changes have been introduced under the ERP. Apart from reform of the foreign exchange regime, export procedures have been simplified, and exporters may now retain 35 per cent of foreign exchange earnings from non-traditional exports. In the 1991 budget, the customs duty drawback rate was increased to 100 per cent; corporate tax rebates were increased for exporters of non-traditional exports from both agriculture and manufacturing; and firms that manufacture for export are exempted from customs duty on imported machinery and equipment. As noted above, there are indications that the improved trading climate created by these incentives is having a positive effect on the promotion of non-traditional exports from the manufacturing sector. In value terms, exports of aluminium products increased by nearly 300 per cent between 1989 and 1990, from $2.1 million to $9.6 million; exports of salt increased from $3.1 million to $7 million; palm oil exports increased from $58,000 to $1.4 million; and exports of handicrafts rose by 132 per cent from $195,000 to $455,000 during the same period. The Government also proposes to implement a Second Transport Rehabilitation Project to clear the backlog of road maintenance and rehabilitation and a Second Telecommunications Project both of which it considers an essential part of servicing export markets.

As part of Ghana's strategy to improve non-traditional exports, the GEPC has proposed the Export Production Village (EPV) concept which was supported by the ITC. EPVs are owned and managed by producer shareholders. The EPV scheme provides the following benefits to the village producers: a secure market for their products at fair and stable prices, a viable institutional mechanism in the village which gives them the collective strength for negotiating prices with buyers, improved access to commercial credits, etc. EPVs in Ghana produce a wide range of products for export such as yams and other agricultural products, fibre products and so on.

Problems and constraints

Production constraints

- These include irregular suppply of raw materials; obsolete machinery and equipment; shortages of working capital and credit; poor design and quality of products; poor quality of packaging; and lack of adequate maintenance.

Marketing constraints

- These include lack of information about export markets; lack of export marketing skills; poor publicity materials; and pricing procedures which do not reflect the appropriate cost of production.

Trade with ECOWAS countries

- Constraints under this heading include lack of complementarity in the structure of production in the subregion; inadequate transport systems and inefficient and out-dated telecommunications; tariff and non-tariff barriers; lengthy administrative procedures; innumerable controls; differences in standards and regulations; negative attitudes to regional manufactures; language barriers; differences in monetary systems, especially compared with the Franc Zone countries; and lack of adequate market information.

Proposed actions

Implementation of GEPC Plan of Action

- In its 1988-90 Development Plan, the Ghana Export Promotion Council (GEPC) proposed a number of actions including training programmes, establishment of advisory services in production techniques, quality control, design, costing and pricing, packaging, and test marketing. Most of these actions remain to be implemented and the GEPC and others should be assisted.

Intensified promotion of non-traditional export products from SSIs and women entrepreneurs

- Development of new export products from export production villages and the focusing of elements of the above-mentioned GEPC Action Plan on SSIs and women entrepreneurs.

Promoting intra-ECOWAS trade

- Supply and demand studies currently being undertaken by ECOWAS/ITC should be expedited in order to provide information on the production situation and the level of demand in each country and in order to identify priority products offering good intra-ECOWAS trade prospects for Ghana;

- Ghana should actively pursue with its ECOWAS partners the reduction of trade barriers and the establishment of a single market in goods and services in the sub-region in order to ensure sustained export markets among ECOWAS countries;

- the intra-ECOWAS payments system should be improved by both widening and deepening the Ecobank system. The existing Clearing Union, based in Sierra Leone, has not worked well. To overcome this problem the Chambers of Commerce in the ECOWAS states established Ecobank with branches to date in five member countries, including Ghana and a holding company which operates as an offshore bank from Togo. The Ecobank system needs support and strengthening;

- intra-ECOWAS trade should be promoted by a range of actions including organization of buyers/sellers meetings, trade missions, trade fairs and exhibitions, initiation of bilateral and multilateral trade negotiations, demand surveys outside the region, encouragement of investment and joint ventures, creation of joint marketing groups, assistance in the creation of brand names, strengthening the subregional trade information network, and requests for the necessary specialized consultancy services (packaging, transport, export finance, and so on). All of these actions will require technical assistance;

- careful examination and detailed feasibility studies are needed before government takes a final decision on the establishment of an export processing zone (EPZ) on the coast.

2.4 SPATIAL DISTRIBUTION AND DECENTRALIZATION

The location of manufacturing industry has important implications for the distribution of the benefits of economic development in Ghana. Currently there is an over-concentration of manufacturing enterprises in Accra and Kumasi. Encouraging new enterprises to locate outside the main cities through decentralization policies would promote a more equitable distribution of the benefits of further industrialization in the country.

Current situation

According to the Ghana Directory of Industrial Establishments 1988, there were almost 2000 establishments employing 10 persons or more in that year. Forty-five per cent of them are located in the Greater Accra area and almost 20 per cent in Kumasi. Around nine and seven per cent of such establishments are located in Eastern and Western regions respectively. The rest are scattered around the remaining six regions none of them having more than 6 per cent of the total. Of the seventy or so establishments employing over 200 employees, half are located in Accra and nearly a quarter - mainly producing wood and furniture - in Kumasi. The overall current spatial distribution is not satisfactory. If left to the market, concentration will tend to increase and large sections of the population will be excluded from participation in industry unless they migrate to the larger urban areas.

Government objectives and policies

The government is committed to achieving an equitable distribution of the benefits of economic development throughout Ghana. In its opinion this can be facilitated by the promotion of industrialization in the areas outside the main centres. Decentralization of industrial activity is seen as a mechanism for promoting rural development and modernization. The objectives are to be achieved in the main through increased processing of locally-available raw materials and the development of small-scale industries (SSI) in small centres where infrastructural demands are relatively light.

Under the Investment Code, the Government is encouraging a wider distribution of industries by giving tax concessions to those which locate in less-developed areas outside Accra-Tema, Kumasi, and Sekondi-Takoradi. Special benefits are also provided to enterprises that locate in areas lacking basic infrastructure and which subsequently directly provide it themselves. The concept of Export Production Villages is being promoted to foster production of crafts and non-traditional primary products for export. GRATIS and ITTUs are promoting skills development and technology diffusion in the less-developed areas. The establishment of regional development commissions in some regions is a very useful starting point for implementation of policy aimed at decentralization. This system should now be extended to all Ghana's regions. District Assemblies are also to be given increased responsibilities in the promotion of development in their areas and this may also help to decentralize decision-making.

Problems and constraints

Determinants of industrial location

- Encouraging the location of more SSIs in small centres and villages in less-developed areas is not the only way to decentralize industry. It will not promote linkages with bigger enterprises, nor will it alter the basically unbalanced distribution of manufacturing enterprises and their concentration in Accra and Kumasi. The economic forces that attract manufacturing enterprises to larger centres are very strong indeed. Industrial activities tend to be pulled powerfully toward other industrial activities by the force of two kinds of external economies: localization economies which lead to the clustering together of enterprises in the same branch so as to benefit from a labour pool trained in skills appropriate to that branch, as well as common services; and urbanization economies which attract industrial activities to large urban centres because of good infrastructure, a labour pool with a wide variety of skills, a wide range of supporting services including training facilities, a large market, and the social amenities of an urban area which is helpful in attracting high calibre personnel.

  The way to attract manufacturing enterprises, especially medium and large ones, to areas outside the main centres is not to try to disperse them widely over the less-developed regions but to choose a small number of intermediate-sized centres as growth poles - perhaps one in each region - and by providing them with infrastructure and a network of supporting services and institutions, and a wide range of incentives, create in them conditions to attract a variety of enterprises both large and small. District capitals are simply too small in size to act as growth poles and there are too many of them (110) to make it economically or financially feasible to develop them all as growth poles. Regional capitals are large enough in size and small enough in number to act as an intermediate tier of urban centres between the cities of Accra and Kumasi and the small district capitals. By strengthening the regional capitals in this way - and by extending the system of regional commissions a hierarchy of urban and industrial centres will be created, consisting of: in the first tier, Accra and the main cities; in the second tier, the regional capitals; and in the third tier, the district capitals and export production villages. The targeting of activities in agro-industries with regional resource bases and in engineering services will help to promote sub-contracting and other linkages between the various sizes of enterprises and the various sizes of centre in each region.

Budgetary constraints

- Given the pull of new enterprises toward centres that can provide them with external economies, it is unlikely that very small centres will be able to attract and hold industrial activities other than those that process local raw materials or supply services, such as basic engineering services, unless rather large incentives and supports are offered, including expensive infrastructure. Budgetary constraints would preclude distributing such incentives on a wide scale.

Proposed actions

- Adoption by the government of a hierarchial approach to industrial decentralization.

- Promotion of a relatively small number of regional growth poles in some if not all of the less-industrialized regions. These growth poles should receive special infrastructural supports including industrial estates, technological and training support, and special investment incentives.

- Establishment of regional offices of investment promotion agencies in the growth poles.

- Provision of special tax and training incentives to attract large enterprises to the growth poles, including joint ventures between Ghanaians and foreign investors.

- Establishment of sub-contracting exchanges in each growth pole to promote linkages within targeted branches of agro-related industries and engineering services, between large companies, including joint ventures, and SSIs. Some of the SSIs would be located in neighbouring towns and export production villages. Export production villages and other small centres with ITTUs could be clustered around the growth poles to form a hierarchy of settlements of various sizes in the less-developed regions. Such an arrangement has many advantages. As noted above, it would facilitate linkages between small-scale enterprises and larger ones through sub-contracting arrangements in the same general area. It would also promote technology transfer. It would link the formal and informal sectors of industry, improving the chances of the latter being upgraded and integrated into the formal sector in time.

2.5 RESEARCH, SCIENCE AND TECHNOLOGY

The accelerated economic and social development of Ghana is dependant on the continuous identification, upgrading, expioitation and conservation of its resources. These processes depend on objective research, science and technological activities and their integration with industrial activities. In the present state of economic development in Ghana, these processes should be industry led. The ability of the nation to absorb the benefits of advanced technology will determine the rate of economic growth. Clear strategic policies are therefore required to harness research activities to industrial needs.

Current situation

Research, science and technology policy is the responsibility of the Ministry of Industry, Science and Technology (MIST). The Ministry has three directors, one of whom co-ordinates science and technology programmes and institutional activities including the Council for Scientific and Industrial Research (CSIR) and the Ghana Standards Board (GSB). The various research institutions, commissions, and departments comprising resources for science and technology are listed in Annex 4.

It is significant that a number of research institutions are not directly under the MIST. Major problems thus arise in attempting to co-ordinate S&T programmes and their application to industry needs.

Middle-level science and technology training is undertaken in the polytechnics and technical institutes. At the tertiary and post-graduate levels the relevant faculties and departments of the three universities provide the necessary training. As part of the training programme these institutions also conduct research and development activities. Linkages with industry are weak, although the Universities have begun to appoint industrial liaison officers, and to establish Technology Commercialization Bureaux and Pilot Demonstration Plants in the research institutions.

The general research areas at the research institutions which are of relevance to industry are:

- research, science and technology information and documentation services;
- agronomic research, including the application of biotechnology to increase quality and quantity of agricultural produce;
- medical research including utilization of domestic herbs and natural products;
- identification, classification, and definition of processes to preserve and add value to local resources, including the upgrading of domestic technologies;
- identification, assimilation, adaptation, and dissemination of new technologies;
- consultancy, design, prototype development, and quality control services to entrepreneurs and industry;
- environmental and ecosystems conservation research.

In order to perform the above functions adequately, there is need not only to provide new innovative institutional arrangements but to restructure and rehabilitate existing institutions. Financing of research, science and technology is a major factor in the implementation of the various programmes. Ghana spends less than 1.0 per cent of its GDP on financing research, science and technology activities in the public sector.

Government objectives and policies

The Government is committed to the improvement of science and technology infrastructure and of access to foreign technological transfer. It is also strengthening linkages between science and technology and productive enterprises and promoting research by enterprises in the industrial sector.

Problems and constraints

Institutional arrangements

- Weaknesses in the administration of research, science and technology at the policy and implementation levels due to the lack of clearly defined roles for MIST and CSIR;

- lack of commercial appreciation of the benefits of applied research and a lack of objectivity at the highest level in co-ordinating and integrating on-going programmes to serve industrial markets;

- lack of research and development facilities and capabilities in industry, with no obvious tax incentives for their development;

- lack of emphasis on materials substitution programmes and development of local resources in all sub-sectors.

Infrastructural considerations

- Lack of science and technology culture resulting in weak demand for domestic technology generally, especially within industry, the civil service and the armed forces;

- an educational curriculum which does not emphasize natural and technological resources identification, preservation and upgrading activities, including a weak engineering base;

- poor standardization and quality control reflected in a multiplicity of makes and models and in some cases poor quality goods which stifle domestic production and productivity;

Linkages

- Poor linkages between and among research institutions and between entrepreneurs and industry;

- the inability of research institutions to package research results for commercialization through suitable documentation and other delivery mechanisms which promote the financial benefits of their work;

- poor information and documentation services to facilitate research and transfer of technology to small- and medium-scale industries.

Funding

There is inadequate funding of research, science and technology activities as a result of:

- inadequate government grants and specific research contracts to institutions;

- negligible direct financial contributions to research by the private sector;

- inability of research institutions to re-orient their programmes to earn reasonable financial returns.

Proposed actions
Institutional arrangements

The proposal by a select committee on Re-ordering of Science and Technology for Maximum Impact on National Development to restructure the institutional arrangements within the MIST needs to be examined very cautiously with the express objectives of:

- bringing institutions whose main objectives are research and development, including the transfer of intellectual property functions, under the aegis of one Ministry. This may deserve lower priority than the need to focus on commercial exploitation issues of current research programmes;

- rationalizing and streamlining the policy advisory, formulation, programming and monitoring activities of MIST and CSIR through establishment of a policy analysis unit;

- strengthening the management and administration of the science and technology portfolio at MIST, including provision of technical extension and financial capabilities;

- ensuring active co-operation with other ministries on cross-sectoral issues;

- securing participation and commitment from the Ministry of Finance at the conceptual stages of projects, so that their smooth transition from research to industrial exploitation is assured at the outset.

Infrastructural considerations

- A deliberate national campaign to promote a science and technology culture needs to be co-ordinated by an inter-ministerial committee to include those ministries dealing with education and science and technology;

- the Curriculum Research Unit in the Ministry of Education should be strengthened and training of engineers expanded at all levels;

- a programme for the standardization of tools, equipment and machinery should be implemented to maximize the benefit from economies of scale in a relatively small domestic market. This requires strengthening of the Ghana Standards Board;

- Government procurement policies including contract research should promote domestic science and technology activities.

Linkages

- Innovative mechanisms for linking science and technology and the productive and service sectors should be identified and implemented. Initially, Pilot Plant facilities, Commercialization Research Bureaux, and the Industrial Liaison Offices should be strengthened;

- the GRATIS Programme needs to be expanded and strengthened to perform design, prototype development, and engineering services at a higher level and maintain its commendable commercialization functions;

- the capabilities of various university departments must become more industrially oriented. Economics Departments should be encouraged to strengthen their capabilities in applied economics, quantitative economics, and managerial economics. The Departments of Fine Arts, Engineering, and Architecture should collaborate closely in promoting design, prototype development, and maintenance services to industry;

- universities should be encouraged to set up consultancy units;

- research institutions need strengthening through suitable technical assistance programmes, related primarily to the needs of industry.

Funding

- It is recommended that funding for research institutions should increase to the level of 1.5 per cent of GDP. Combined with private sector financing, a target of 2.0 per cent of GDP is recommended;

- an industrial research levy and/or commodity research levies with suitable tax incentives may be considered for immediate implementation after relevant studies are made, especially in the area of local substitutes. The introduction of attractive incentives, including tax rebates for expenditures made on research;

- entrepreneurs wishing to commercialize domestically-developed technologies should have access to venture capital on easy credit terms because of the high risks associated with new technologies;

- research institutions should commercialize their activities through contract research as much as possible, albeit that some research might be considered as long-term and not for immediate commercialization. With the present state of the Ghanaian economy, such projects require careful scrutiny;

- greater attention should be paid to the training and production of middle-level technical manpower and practical training of engineers through fellowships.

CHAPTER 3
NATIONAL CAPABILITIES TO IMPLEMENT INDUSTRIAL POLICIES

If industry is to act as the main motor of growth in Ghana in the 1990s then industrial policies have to be well formulated and well implemented.

This requirement/sine qua non has important implications for the future shape of MIST and also for the various public and private sector institutions whose mandates relate to industrial development. Each of them needs to become more focused in terms of their objectives and operations. The division of labour between them needs to be rationalized. Their capability to carry out their work needs to be strengthened.

A major task is promotion of dialogue between the government and the private sector in order to reduce the constraints holding back the private sector from playing its assigned key role. This also applies to the various factors which are holding back the privatization process. A harmonious partnership between the public and private sectors needs to be worked out. The actions of the government and the private sector need to be geared to co-operative achievement of national development goals.

Another important issue to be addressed is remuneration within the public sector. Poor pay and poor working conditions are currently acting as a major constraint on the development of the human resource base for industrial policy formulation. Although adverted to in this section, this issue is treated in more depth in Chapter 6.

A survey of the major public and private institutions involved in industrial development, especially in terms of their mandates, objectives and their problems and constraints, is a necessary first step in assessing national capabilities to implement industrial policies.

Figure 3.1 identifies the various institutions, distinguishing between those that are public and those that are private sector. It also shows the linkages that exist between them, both institutional and those of a consultational type.

3.1 PUBLIC SECTOR INSTITUTIONS

The obvious starting point in a survey of public sector institutions is the Ministry of Industries, Science and Technology (MIST) and the agencies under its control.

3.1.1 MIST and its agencies

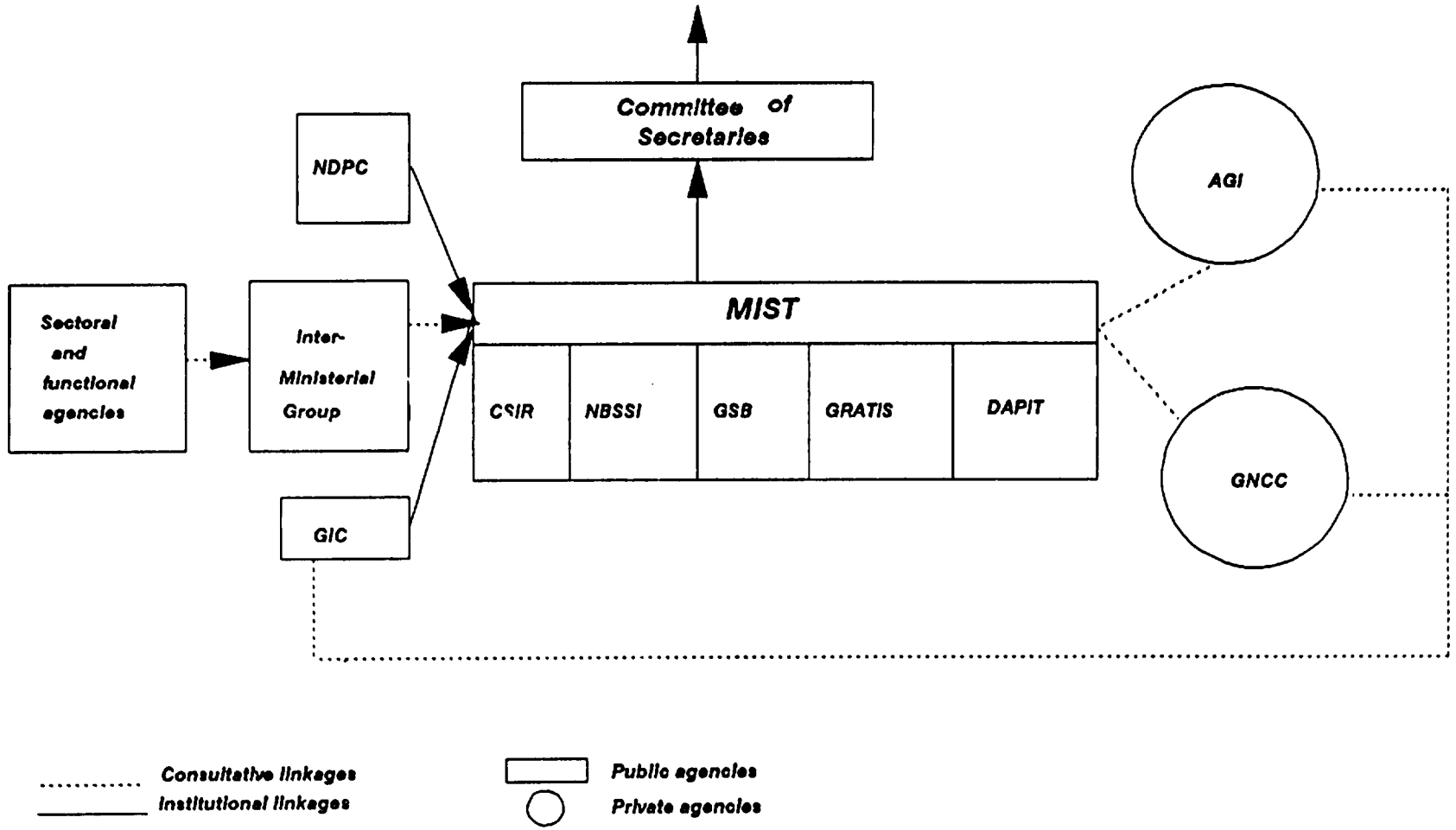
The Ministry of Industries, Science and Technology (MIST) has supervisory authority over several government agencies which provide research, technical and extension services to the industrial sector. These agencies include the National Board for Small-scale Industries (NBSSI), the Council for Scientific and Industrial Research (CSIR), and the Ghana Standards Board (GSB).

The Ministry has 3 divisions: Technical, S&T, and Administration.

The Technical division, which looks after industrial promotion and development, has 7 sections:

- programming, analysis, monitoring and information;
- textiles and garments, wood and paper industries;
- electrical, electronics, and vehicles assembly;
- food, beverages and tobacco industries, and multilateral aid co-ordination;
- metals, non-metallic and miscellaneous industries;
- chemicals, pharmaceutical and cosmetics industries, and bilateral aid coordination;
- plastics, rubber. leather.

Figure 3.1: Institutional linkages for industrial regeneration and development, Ghana



The current structure of the Technical division is clearly unusual. While the assignment of responsibilities is a legacy of the division's historical development, it is now opportune to reconsider it. At the very least, the co-ordination of aid, both bilateral and multilateral, should be separated out and placed together in one section.

The ministry is responsible for both industry and for science and technology. There are currently only three professionals, including a director on secondment, who works on the S&T side. Moreover, the function of advising the government on S&T policy is legally mandated to the Council for Scientific and Industrial Research (CSIR) so the S&T division of the ministry has no role in policy formulation in relation to S&T. In the light of the small establishment in S&T, MIST needs to strengthen its capability to support and manage S&T development and its links to industry.

Originally MIST's main focus was the supervision and regulation of SOEs. Now that the government has begun to move away from playing a central role in the industry in favour of the private sector, MIST's focus in relation to industry must also change. Ultimately its main job must become that of promoter of private industry and formulation of industrial policy. In the short- to medium-term, however, as the government continues to divest itself of the industrial sector, MIST still has a role to play in relation to SOEs. However, given the existence of the State Enterprises Commission (SEC), the Divestiture Implementation Committee (DIC), and the Non-performing Assets Recovery Trust (NPART), it is not at all clear at this stage what MIST's role is in the promotion of divestiture and privatization. There is an urgent need to clarify the respective roles of MIST, SEC, DIC and NPART in relation to SOEs and their futures, whether they remain within the public sector or not, and also their roles in relation to the processes of divestiture and privatization.

Since MIST will have to shift its focus from supervision and regulation toward industrial policy formulation and private sector promotion, its capability to undertake these tasks will have to be strengthened. At present, in addition to the Chief Director of the ministry, there are 26 senior officials responsible for industrial promotion, including the Director of the Technical Division. Four of these are stationed in the regions outside Accra. Only 50 per cent of the senior staff have professional qualifications or academic degrees related to industry either in economics, statistics, or engineering. The capability of MIST to undertake economic analysis and policy formulation programming, monitoring, and evaluation is presently very weak. There is an immediate need to strengthen its economic analysis capabilities in order to enable it to promote private sector development.

National Board for Small-scale Industry (NBSSI)

When it was set up by Government, the NBSSI was charged with responsibility for formulating policies and implementing programmes for the efficient and sustained development of the small-scale industrial sector. In January 1991, it was merged with the Ghanaian Enterprises Development Commission (GEDC), as a result of which, NBSSI has added the funding of entrepreneurs in both the SSI and the informal sectors to its function.

The NBSSI runs an entrepreneurship development programme to provide systematic training and professional counselling to small-scale businesses. To enable it to make an impact throughout the country, it has established business advisory bureaux in all the regions. However, shortages of office accommodation and equipment, especially vehicles and telecommunications, as well as shortages of trained professional staff have tended to constrain NBSSI's extension work. There is also need for a functional data base and trained staff to operate it.

Care must be taken not to assign similar tasks, requiring scarce professional expertise, and expensive equipment, to a number of different agencies. There is a case for some rationalization of tasks between NBSSI and other bodies operating at regional level, including the regional commissions.

Council for Scientific and Industrial Research (CSIR)

Taking over from the National Research Council in 1968, the CISR serves as a semi-autonomous scientific and technical arm of Government under the supervision of MIST. In turn, CISR supervises 13 public research institutes. The principal functions of CSIR are to advise the Government and Government agencies on scientific and technological matters affecting the national economy and to encourage scientific and industrial research of importance to the development of industry, agriculture, and medicine.

Despite its relatively long period of existence and mandate, very little policy advice has emanated from the CISR until recently when the Government requrested the preparation of a draft S&T plan. This draft has been submitted to the Government and is now awaiting the formulation of a comprehensive S&T policy statement. In the meantime, a team of experts was commissioned in July 1990 to make proposals for re-ordering S&T so as to maximize its impact on national development. The principal recommendation of the report, which is currently being considered by government, is that the S&T portfolio be hived away from MIST and that a separate ministry be created to manage it.

The main problems and constraints of CSIR are:

- lack of effective mechanisms to translate R&D findings into productive use;
- inadequate funding of science and technology institutions and activities resulting in deteriorating infrastructure, especially laboratory facilities;
- inadequate legislative support;
- lack of modern information and documentation facilities;
- inability to attract and retain high quality professional and skilled personnel.

Ghana Regional Appropriate Technology Industrial Service (GRATIS) and Development and Application of Intermediate Technology Project (DAPIT)

Both GRATIS and DAPIT were set up as projects to assist and promote industrial development at the grassroots.

The GRATIS idea grew out of the Intermediate Technology Transfer Unit (ITTU) pilot scheme in Kumasi and, when established, was charged with the task of setting up ITTUs in all ten regions of the country. Their facilities train artisans and technicians as well as assisting participants, on completion of training courses, to establish small-scale enterprises. 130 small-scale enterprises have been established in this way by trainees of the ITTUs. GRATIS receives donor support from the EC, CIDA, and GTZ but it also uses local experts in its ITTUs and in offering business advice to its clients. GRATIS organizes special programmes for women entrepreneurs and also offers training to technicians from other African countries.

DAPIT, which was set up with assistance from USAID, is the other scheme which assists in the transfer of appropriate technology to industry in the rural areas. Together GRATIS and DAPIT provide very valuable contributions to the upgrading of technological capacities among SSIs and informal sector activities in regional centres and rural areas and, are thus, a valuable input to the process of industrial decentralization.

Ghana Standards Board (GSB)

The Ghana Standards Board was established in 1967 to oversee the establishment and monitoring of standards and generally advise government and industry on matters of standardization and product quality. It has one main testing laboratory in Accra.

Currently the GSB does not have a Board of Directors. In addition, inadequate staff facilities and equipment, as well as a shortage of appropriately trained personnel, have severely constrained its operations.

Another factor constraining operations is the unclear relationship between the GSB and other government agencies such as the Ministry of Health and the Pharmacy Board with respect to food and drug administration.

3.1.2 National Development Planning Commission (NDPC)

The NDPC was established in 1990 and charged with responsibility for advising government on long-term development strategies and the formulation of long- and medium-term development plans. Among its principal functions are co-ordination and harmonization of development planning activities within a horizontally and vertically decentralized planning system.

On the basis of a national goal-setting exercise, carved out by the NDPC with the participation of both sectoral agencies and district assemblies, the NDPC is now formulating a National Development Policy Framework and Guidelines. This is aims to provide the basis for the formulation of long-term perspective and medium-term plans at national, sectoral, and district levels.

The NDPC is constrained in a number of ways from carrying out its planning mandate. It lacks a data base and a management information system and staff with appropriate training and skills. Moreover, although economic policy units are being set up in the various ministries, it is not clear what NDPC's relationship is with the key-line ministries or with the various public agencies responsible for promoting industrial development (Figure 3.1). In view of these constraints and uncertainties, and in the light of changing priorities, NDPC's role should be re-assessed at this stage.

3.1.3 Other public agencies

There are a number of other agencies in the public sector whose operations are of crucial importance for private sector industry. The first two are the Ghana Investment Centre and the Ghana Export Promotion Council. Three other bodies - the State Enterprises Commission, the Non-performing Assets Recovery Trust, and the Divestiture Implementation Committee - are focused on the SOEs and their future, and particularly on the process of privatization of the maximum possible number of SOEs. Improving the confidence of the private sector, both domestic and foreign, is crucially dependent on the success of the divestiture and privatization exercise.

Ghana Investment Centre (GIC)

The GIC is the principal investment promotion agency in Ghana. Its main functions, as listed in the Investment Code 1985, include:

- collection, analysis and dissemination of information on investment opportunities and sources of investment;
- initiation and organisation of investment promotion activities; and
- granting approvals for the establishment of enterprises specified under the Code.

The GIC is governed by a Board made up of top-level members of government including the Chairman of the Committee of Secretaries, the Secretary for Finance and Economic Planning and the Governor of the Bank of Ghana. Up to now, investment applications were processed through several government agencies. This inevitably caused delays and frustrated investment proposals in the past. To remedy this situation, a one-stop shop system has now been introduced and the intention is to reduce procedures and the time for approving investment project applications to 4-6 weeks.

The GIC is gradually moving from passive consideration of incoming applications toward active promotional activities. In line with this strategy, it intends to undertake pre-feasibility studies on identified projects. It is envisaged that promotion will be undertaken among others, through Ghanaian embassies abroad and through various international agencies.

At this stage in its evolution, the conflict between the regulatory role of GIC and its promotional role is proving to be a major constraint on operations. The Centre's work as regulator is putting a brake on the pace at which it is able to deal with investment proposals.

Another factor slowing up the work of GIC is the composition of its governing Board, which includes top-level government members who, on account of their normal work schedules, are not always available at the same time for meetings. This situation has produced a huge backlog of investment project proposals requiring decisions. The other major constraints affecting GIC are its acute shortage of staff capable of assessing investment proposals and of preparing and disseminating promotional materials, as well as personnel and equipment to operate a data base.

Ghana Export Promotion Council (GEPC)

The GEPC, established by Government in 1969, has as its principal function the promotion of Ghanaian products and especially the non-traditional types on foreign markets. It provides technical assistance to exporters in gaining access to markets abroad by organizing buyers and seller meetings and trade fairs, and by providing training for exporters in skills such as costing and pricing for foreign markets.

The GEPC is very conscious that exports can be successfully promoted only if a sustainable production base for exportable products exists in the country. For this reason, it is now involved in spearheading the development of non-traditional or "pioneer" products, targeting industries which it perceives to be most capable of responding to the market opportunities GEPC has identified. It is also taking a targeting approach to export promotion, shifting its focus, for example, away from general trade fairs and toward fairs and product-specific meetings with potential importers.

Another rationale for GEPC's promotion of new products is its belief that this will also help to promote Ghana as a location for foreign investment. GEPC believes that foreign investors are attracted only if they see export potential for their products. It is conscious that the GIC has the lead role in promoting industrial investment, the GEPC serves in the Technical Committee on Investment Appraisal (TCIA) and is using that position to introduce a more targeted approach to investment promotion in Ghana.

Institutional support for export promotion is weak. The GEPC receives technical assistance from the UNDP and the ITC but its government subvention through its parent ministry, the Ministry of Trade and Tourism, is inadequate. This makes it difficult for it to sustain the many initiatives it launches. The GEPC has the core personnel and the core skills to translate Ghana's export ambitions into a solid export promotion programme. There is an urgent need not to boost its financial resources in order to enable it to translate its programme into a sustainable flow of non-traditional products on export markets.

There is also a need to reassess the relationship between GEPC, the GIC, and the Standards Board. All have a role to play in investment promotion and in export promotion but the latter two are agencies of MIST while the GEPC comes under the Ministry of Trade and Tourism.

Three other institutions with overlapping mandates are SEC, NPART, and DIC. They each have a role to play in relation to divestiture and privatization but the division of labour and the relationships between them are unclear.

State Enterprises Commission (SEC)

One of the principal elements of the ERP initiated by government in 1983 was to reduce the involvement of the public sector in directly productive activities, while improving the performance of those state enterprises which will remain fully or partially owned by the government. The main function of the SEC is to implement this aspect of government policy. As a result, the SEC has taken over responsibility for 340 public enterprises. It has introduced corporate plans and performance agreements as a means of monitoring the management and financial performance of SOEs. This has resulted in a significant improvement in the performance of over 100 companies in the public sector.

To achieve further improvements, the legal framework of the state sector has to be unified and the relationship between the enterprises and the shareholders clarified in terms of composition of the Boards of Directors of the SOEs and their Chairs. There is also need to redefine and re-assess the objectives and social orientation of SOEs and to assist them to operate in a more commercial way.

Internally, a major constraint facing the SEC is staffing. Several positions critical to the work of the commission still remain vacant. Another major problem is a lack of financial data on state enterprises; some SOEs are 10 years in arrears with their financial data.

As a result of these weaknesses, the SEC is unable to undertake in-depth viability analysis of the SOEs or to be able to tell the government which ones should be retained, which ones privatized, which ones liquidated and which ones retained.

Non-Performing Assets Recovery Trust (NPART)

NPART was legally established in 1990 with the assistance of the World Bank as part of the financial sector restructuring programme. It is governed by a Board of Trustees. Its principal functions are: to acquire and temporarily hold on behalf of government outstanding, non-performing loans to SOEs from the banking system and ultimately dispose of any non-performing loans and assets that the government decided to acquire from the banks.

The NPART is a unique Government GOG/WB/IMP model that will run for 5 years from 1990 - 1995 to clear non-performing loans from the balance sheets of the banks. It acquires these assets from the banks and manages the proceeds on behalf of government. To date, it has acquired about 1322 such non-performing assets worth about C50 billion and during its first three months of operations recovered about C2.5 billion. Most enterprises on NPART's list belong to the public sector.

The relationship between NPART and SEC and DIC is not clear. Moreover, NPART has a number of problems of its own including staff and skill shortages, especially privatization experts, and an information system.

Divestiture Implementation Committee (DIC)

The third institution involved in the divestiture/privatization exercise is DIC. It was established in 1988 to prioritize the list of SOEs available for privatization and to select the most appropriate means of divestiture. In agreement with IDA and the IMF, 42 enterprises were approved for divestment. As of June 1991, 24 had been divested, by means of sale of government shares (9), outright sale (7), through joint venture agreements (3), liquidation (2), and through leasing (3).

A major constraint facing the divestiture programme is that of title, since most of the SOEs do not have any documentation in relation to titles or mode of acquisition. Another important constraint slowing the process of divestiture is that interested parties intending to purchase or lease SOE are invariably faced, in the present tight credit climate, with financing problems. SOEs are also faced with the problem of settling redundancy and end-of-service benefits and other enterprise liabilities for which most of them do not have funds.

Thus government budgetary constraints, one of the factors which necessitated the divestiture programme in the first place, are now constraining its implementation. To accelerate the programme, the DIC is considering the possibility of worker participation in the divestiture programme through employee/management buy-out schemes.

DIC does not have the staff to undertake in-depth pre-divestiture analysis. There is a need to develop appropriate criteria to prioritize enterprises before divestiture can occur. There appears to be no objective basis on which SOEs were classified into the three divisions of those to be privatized, those to be liquidated, and those to be rehabilitated.

3.1.4 Inter-agency consultation and co-ordination activities

Consultation between the various government agencies tends to be rather ad hoc. An inter-ministerial group for industrial policy coordination has been set up by MIST. The group includes official representation from the Ministry of Agriculture, the Ministry of Finance and Economic Planning, the Ministry of Energy, the Ministry of Mobilization and Social Welfare as well as NDPC, CSIR and NBSSI. The group does not meet on a regular basis but rather as the need arises, for example, to discuss policy documents or special projects. Ad hoc groups or committees are also constituted from time to time to deal with specific issues affecting different sectors such as the integrated fisheries project. In addition, MIST representatives participate in meetings of the Economic Management Team (EMT), comprising all the key ministries. The EMT meets twice a year to review economic development and policy issues.

Consultations also take place between SEC, NPART and DIC which are the main agencies involved in the implementation of the privatization programmes but, once again, these consultations have not been institutionalized. Consultations also take place between DIC, SEC and NPART but, again, these consultations have not been institutionalized. Indeed, there is an urgent need to reassess the roles of the DIC, SEC, and NPART and to clarify and reconcile their overlapping mandates. This reassessment should also encompass the role of the Bank of Ghana in industrial development and its relationship with DIC, SEC, and NPART. The issue of whether three agencies are needed to implement the divestiture and privatization programmes has to be confronted. The role of the First Finance Company is also relevant to this assessment since access to venture capital is crucial to the promotion of private investment in the industrial sector. An advisory group on private sector development has also been established at the MFEP to discuss issues arising from policies affecting the private sector.

In view of the functional overlaps and conflicts of interest and goals, there is need for (a) a study to rationalize and harmonize mandate and (b) establishment of mechanisms of policy co-ordination between the various public agencies.

3.2 PRIVATE SECTOR AGENCIES

The most important private sector agencies involved in industrial development are the Association of Ghana Industries and the Ghana National Chamber of Commerce.

Association of Ghana Industries (AGI)

The AGI is the private sector association of industrialists. It has about 1500 members and a small secretariat financed by members' subscriptions. It receives no government subvention and consultations between it and relevant ministries and public sector agencies tend to be rather ad hoc. No serious discussions on either the industrial policy statement nor on the review of the Investment Code took place between AGI and government. On the whole, the AGI has tended to react to government policy rather than be involved in a dialogue with government to agree policy reforms together. Consultation and dialogue are in urgent need of strengthening. In order to be able to put the views of private sector industrialists to government, the AGI needs to strengthen its capacity to undertake economic analysis and independent assessment of economic policy and its impact on industry.

AGI has received some assistance from USAID to strengthen its secretariat but, it needs significant further strengthening, especially in terms of training and equipment to establish and manage a data base on Ghanaian industry. Its member enterprises also require further training in accounting and management skills.

Ghana National Chamber of Commerce (GNCC)

Although regarded by many as merely the commercial wing of the private business sector, the GNCC in fact has a number of industrialists among its members. It is a dynamic organization which has established good consultation links with both other private-sector organizations and government. It also acts as a reliable source of information on both trade and industry. It collects and disseminates information about products, markets, regulations and legislation on trade and prices, and organizes trade advisory and counselling services.

The GNCC has been assigned a leading role in regional integration and trade, since it has been selected as the focal point for a trade information network for the four anglophone countries of West Africa. With technical assistance from UNDP/ITC, the GNCC has recently been revamped and revitalized and a fully equipped trade information service to provide regional trade information and library have been set up within the organization. It is undertaking a further restructuring and is currently formulating a 5-year project to secure funds to carry out developmental activities.

The GNCC and the AGI have some overlapping membership and they have established a consultative committee. However, these two private sector institutions need to strengthen their relationship and perhaps establish some division of labour in terms of policy analysis so that they can present a coherent view on policy recommendations to the government.

There is also need for institutionalizing regular consultation and dialogue between the private sector institutions and the government and its agencies.

The GIC has established a mechanism called private sector group, comprising the GIC, GNCC, and AGI to facilitate dialogue between itself and the private sector, especially on issues relating to the investment climate. This group meets monthly. The GIC has also initiated a mechanism for bi-annual meetings between the private sector and government to discuss investment problems.

Apart from these arrangements, consultations between the public and private sectors on industrial issues occur only occasionally. There is no institutionalized mechanism for regular dialogue between them.

3.3 PROPOSED ACTIONS

A number of actions are necessary in order to strengthen national capabilities to implement industrial policies. They involve both the public and the private sector agencies and necessitate both institutional strengthening and capacity building.

The main elements to build up institutional capabilities for promoting industry are in the areas of institutional strengthening and capacity building.

3.3.1 Institutional strengthening

Public sector agencies

The institutional capacities of most public sector agencies need to be strengthened. A major component consists in strengthening the capacity of MIST to undertake policy formulation and analysis, programming, monitoring and evaluation in both industry, science and technology. This implies, among other things the provision of adequate equipment, qualified staff and management capacity for operating data bases. The ability of MIST to recruit and retain professionals with appropriate training in industrial engineering and economics, as well as in scientific research and technology, has to be enhanced significantly. Salary structures and career development need to be reviewed urgently as part of the general reform of the civil service and its salary and career structures.

With the exception of GEPC and GIC, most of the public agencies reviewed, including MIST, have grossly inadequate equipment as well as information processing and documentation facilities. This problem needs to be addressed with some urgency, especially in the case of MIST, NPART, NBSSI and GSB.

The mandates of the institutions concerned with divestiture and privatization - SEC, DIC and NPART - need to be re-assessed with a view to reducing duplication and overlapping and harmonizing their activities. Whatever the outcome in terms of rationalization of functions and mandates, strengthening of the institutions concerned with the processes of divestiture and privatization is urgently needed.

Private sector agencies

The secretariats of the AGI and GNCC need to be strengthened to improve their capability to undertake independent assessment of economic policies and their impact on the private sector. The relationship between the two private sector institutions should be strengthened to enable them to present a coherent private sector view on industrial policy to the government. AGI's secretariat also needs to be strengthened to enable it to undertake investment studies of identified projects for promotion in the private sector. The GNCC plans to undertake a major restructuring of its organization in order to enhance its capacity for promoting intra-regional trade. Its ongoing TA project should be supported.

3.3.2 Capacity building

Public sector agencies

In line with the World Bank/ODA civil service review exercise, and in order to tackle the serious shortages of professional staff, a training-needs assessment of the staff in most of the public sector institutions involved in industrial promotion needs to be carried out in order to programme assistance to improve upgrade staffing in specific areas.

Private sector agencies

Most private sector enterprises, especially SSIs, need training in economic analysis and in managerial and accounting practices. Programmes already in place to improve capabilities in these areas need further support.

3.3.3 Specific actions

- Strengthening of institutional capacity of MIST to manage and promote industrial development, particularly S&T activities. A policy formulation and analysis unit and an S&T unit should be set up within the ministry;
- re-assessment of GRATIS to upgrade it to an institute for product design and manufacturing for SSIs;
- strengthening of institutional capabilities of GSB for quality control in manufacturing;
- GEPC to be assisted, in conjunction with the UST, in establishing a design and packaging training centre at UST, Kumasi;
- support for GEPC's project to establish a warehousing facility at KIA;
- MIST, NPART, and NBSSI to be assisted in establishing operational data bases;
- training-needs assessment of the staff in MIST, SEC and NBSSI;
- rationalization of the mandates of SEC, DIC, and NPART;
- recruitment and training of staff for SEC;
- provision of appropriate accommodation and equipment, including vehicles, to enable NBSSI to provide adequate extension services in the regions;
- establishment of institutionalized mechanisms for consultation and dialogue between public and private sector institutions in the industrial sector as, for instance, suggested by the Strategic Management Approach which is described in Annex 5.

CHAPTER 4
THE MANUFACTURING SECTOR

In terms of relative importance within the Ghanaian economy, the manufacturing sector has exhibited marked fluctuations. It now accounts for around 10 per cent of GDP. This is the same weight as in 1960, 4 per cent less than in 1970, and 6 per cent more than in 1983.

The sector is relatively diversified, producing consumer, intermediate, and capital goods. Average capacity utilization rates are under 40 per cent and the sector remains very highly import-dependent. Most of the enterprises are very small: 85 per cent engage fewer than 10 persons. Food processing and other agro-based industries are the most important small-scale activities, followed by tailoring, bakeries, wood-related industries, shoe-making, manufacture and repair of metal products, motor fitting and bodyworks, and handicrafts. The manufacturing sector in Ghana produces primarily for the domestic market.

4.1 DATA AND DEFINITIONS

There is a major problem relating to data on the manufacturing sector in Ghana. There are huge information gaps for rather basic indicators. The latest available data of a comprehensive type relates to 1987. The Industrial Census of that year has been prepared in two volumes. The first (described as Phase 1) covers almost all ("recognizable") establishments while the second (Phase 2) covers only those where the numbers engaged are 10 persons or more. It is difficult to compare the part with the whole because the level of aggregation by subsector differs between the two volumes and the indicators chosen for analytical purposes are also different.

There are also problems relating to definitions. There are wide variations in interpretations of terms relating to size of establishment such as large, medium, small, very small, micro, informal and so on. This makes it difficult to compare data over time or even between one report and another of the same period. Employment and value added - terms in relation to which many recommendations are made - have meanings which also often differ from report to report and indeed frequently turn out to have unexpected meanings. There is a very strong case to be made for the production of a common set of definitions relating to size, informal, employment, value added, and other key indicators of the manufacturing sector. There is also a very strong need for regular consultations between the producers and the users of industrial statistics so that analysts and policy-makers are provided with data that is useful and timely with respect to policy analysis and policy-making.

4.2 STRUCTURE OF THE SECTOR

The data provided in the 1987 Industrial Census have not been complemented by any qualitative analysis to date. The following description is the first such attempt although, as already noted, huge information gaps limit the extent of the analysis.

Of the total 8,640 establishments enumerated in Volume 1 of the 1987 Industrial Census, 8,351, or 97 per cent, were in manufacturing. Total persons engaged in manufacturing (a term which includes owners and both full-time and part-time workers) was given as 157,000. As can be seen in Table 4.1 the structure of the sector is unusual in that it appears to have a "missing middle". Indeed, one share of industrial enterprises employing 20-29 workers accounts for only 4 per cent of the total number of enterprises or 6 per cent of total employment in industry.

Table 4.1: Structure of the manufacturing sector by number of workers employed, 1987

Number of workers	Number of enterprises	Share (per cent)	Employment (per cent)
1 - 19	7,376	88	21
20 - 29	310	4	6
30 and more	665	8	73
Total	8,351	100	100

Source: Ghana National Industrial Census, 1987 (draft).

Ranking of subsectors on the basis of the data provided in the Census provided the mission with the starting point for identification of priority subsectors. Further analysis is provided in Chapter 4.

The main subsectors of manufacturing by employment are wood and wood products, including furniture (24 per cent), food products (17 per cent), beverages and tobacco (11 per cent), wearing apparel (10 per cent), fabricated metals (10 per cent), and textiles (8 per cent).

Over 60 per cent of both establishments and of numbers engaged are located in the two regions of Greater Accra and Ashanti. The sex distribution of persons engaged in manufacturing is 76 per cent male and 24 per cent female.

The distribution by skill is given as 10 per cent professional and managerial, 14 per cent technical, 13 per cent skilled, 17 per cent apprentices, and 16 per cent unskilled. Considering that the coverage is all recognizable establishments from one person upward, these data are rather surprising. The Mission's impression is that the percentage of skilled persons in the manufacturing sector is much lower than 57 per cent. Once again, however, the problem may be one of definition.

Volume 2 of the 1987 Industrial Census is more limited in terms of the size of establishments included (10 and more) but much wider in terms of the indicators measured. The number of establishments in manufacturing is 1258; number of persons engaged 87,577; value of output C167 billion; and census value added ("value of output less cost of materials, fuels, supplies and industrial services") C75.7 billion.

It is difficult to analyze the data by subsector of manufacturing as Volume 2 presents indicators only at the level of aggregated subsectors such as food, beverages and tobacco; textiles, clothing and leather; chemicals, petroleum, rubber and plastic; and so on.

Under number of establishments, the top five in terms of rankings are: textiles, clothing and leather (29 per cent); wood and wood products (24); food, beverages and tobacco (15); fabricated metal products (13); and paper products and chemicals, petroleum, rubber and plastic in joint fifth place (7 each).

Under persons engaged, the rankings are: wood and wood products (24 per cent); food, beverages and tobacco (22); textiles, clothing and leather (20); fabricated metal products (9); and chemicals, etc. (8). Under value of gross output, the rankings (after excluding oil refining) are: food and beverages; base metals; wood products; textiles and garments; and chemicals, etc.

Finally, when the subsectors are compared by census value added as a percentage of value of output, the rankings are: first: food, beverages and tobacco; joint second: wood and wood products; and paper products; and joint third: textiles, clothing and leather; and fabricated metal products.

Ranked according to these three indicators, therefore, the four most important sub-groups are: wood and wood products; food, beverages and tobacco; and textiles, clothing and leather; and chemicals.

4.3 CAPACITY UTILIZATION

Current situation

Between 1970 and 1977, industrial production in Ghana began to stagnate and over the following five years slid into a precipitate decline. The utilization of industrial capacity fell to very low levels. By the early 1980s, average capacity utilization in large- and medium-scale enterprises had fallen to some 21 per cent.

After the ERP got underway in 1983 and the supply of inputs began to improve, average capacity utilization rates started to recover - reaching 25 per cent by 1985, 35 per cent by 1987, and 40 per cent by 1988. In 1989 and 1990, however, average capacity utilization rates for large and medium-scale industries declined somewhat to 38 and 37 per cent, respectively. Since total industrial production continued to grow after 1988 it would seem that smaller firms were enjoying better capacity utilization levels than the larger ones. The biggest increases in capacity utilization took place in those industrial subsectors where production was expanding most rapidly, that is, in agro-based industries such as non-metallic mineral products (where the production more than doubled and capacity utilization quadrupled between 1984 and 1989), as well as rubber, wood processing, and beverages (where capacity utilization rates tripled during the same period).

Despite these and other impressive results at the subsector level, however, the fact remains that the average capacity utilization level for large- and medium-scale industries continues to hover around 40 per cent - and indeed, as already noted, registered marginal declines in 1989 and 1990.

Government objectives and policies

The Government is committed to a progressive upgrading of technologies, products and skills required to maintain the competitiveness of manufacturing industry. Implicit in these objectives is a significant improvement in capacity utilization levels.

Problems and constraints

Old and, in many cases, obsolete plant and equipment, outdated technologies, and general uncompetitiveness severely constrain immediate improvement in capacity utilization levels across a broad range of industrial activities. Maintenance of plant and equipment is very poor. There is also huge wastage of some raw materials, especially wood. The small size of the domestic market constrains the exploitation of economies of scale and greater capacity utilization. Another major constraint is shortage of funds to finance rehabilitation within the manufacturing sector. This suggests that further incentives and institutional support will be required at national level in order to foster continued improvements in the investment climate. In addition, support from the international community will be required so as to facilitate both new investments and habilitation of certain existing branches and enterprises.

Proposed actions

- The comprehensive national policy on science and technology needs to be finalized immediately, and, translated into an action programme on the basis of the draft S&T Plan Options;

- a "maintenance culture", a waste management culture, and a culture of sound work practices need to be inculcated into industrial management practices;

- the development of trade links with ECOWAS countries should be strengthened as a means of widening the market and increasing demand and production;

- selected branches and enterprises should be rehabilitated as a matter of urgency. A necessary first step is diagnosis in depth of the problems and constraints presently faced by industry. Such an assessment is necessary for two reasons. First, in order to facilitate appraisal of the general viability of any rehabilitation effort; and second, to identify the precise type of measures, investment studies, market studies, policy and institutional issues, and technical matters which need to be examined in depth as part of the subsequent effort of detailed rehabilitation work at subsector, enterprise, and plant levels. Only with the broad classification of current problems and their causes, with an initial estimation of the appropriateness in economic terms of rehabilitation, can targeted technical assistance projects be designed and launched for selected activities in the manufacturing sector.

4.4 LINKAGES AND INFRASTRUCTURE

One of the major aims of the Government of Ghana is to strengthen and extend both intersectoral and intra-industrial linkages, thereby maximizing the use of domestic resources.

4.4.1 Linkages

Although relatively diversified, the manufacturing sector has weak backward linkages to agriculture, fisheries, and mining. Stronger backward linkages would promote increased substitution of domestic for imported inputs in manufacturing and would also raise the value added of export products through a higher degree of processing of domestic raw materials.

Intra-sectoral forward linkages are especially weak. There are only a few examples of intermediate products in the food processing subsector. They include salt, used as a flavoring and preservative; sugar, used in fruit processing; and starch, made from cassava and used for thickening in a wide range of food preparations.

Although the manufacturing sector still remains heavily dependent on imported inputs, the use of domestic resources is now increasing. Imports have now been replaced by local raw materials in the manufacture of soaps and cosmetics, in the brewing industry, and in textiles. Significant import substitution potential exists in the chemical industry, which could process abundant local resources such as salt for production of caustic soda, agricultural waste for production of fertilizers, local herbs for production of pharmaceuticals, and so on.

Capital goods manufacturing, which needs to have strong linkages with agriculture and other industrial subsectors, is still an infant industry. Most of the enterprises are poorly equipped and remain artisanal. As a result, almost all machinery and equipment is imported.

An important reason for weak backward and forward linkages is insufficient and unreliable supply of domestic raw materials. Proposed actions to strengthen and extend backward and forward linkages of the manufacturing industry are specified in Chapter 4.

4.4.2 Rehabilitation of transport, telecommunications and water infrastructure

A necessary precondition for deepening linkages is further development of infrastructure, including: transport, communications, water and energy. The rehabilitation of infrastructure goes beyond the scope of the present mission but since it has implications for industrial regeneration, some reference to it is appropriate.

Obviously a well-functioning transport system is essential for the timely movement of primary products, intermediate products, and finished goods, both within the country as well as to and from foreign markets. In order to properly fulfill these functions, Ghana's existing transport infrastructure, which includes roads, railways, seaports, and airports, is in need of major rehabilitation. The Government has agreed to a programme with the World Bank (Transport Sector Strategy Note) whereby, with IDA assistance, the transport sector will be rehabilitated on a phased basis. This programme will be comprehensive, linking the rehabilitation of transport infrastructure to the reform of transport policy and institutions.

IDA is also supporting rehabilitation of the telecommunications infrastructure and water supply system. The quality of telecommunications service is very poor and currently with telephones work only intermittently. The rehabilitation programme includes a maintenance element and the provision of spare parts. The water supply system is unreliable due to deterioration of equipment, poor maintenance, shortages of spare parts, and electricity power cuts. The Government's aim is to provide all urban and rural consumers with reliable supplies of safe water. The major objectives of its water sector strategy are maintenance of existing systems at a satisfactory level to prevent further deterioration, and connection of all potential consumers to a water supply system. This strategy also receives overall support from IDA.

4.5 ENERGY

Potentially, Ghana has a relatively diversified range of energy sources. However, a number of them are still undeveloped. Electricity is subject to supply disruptions. This constitutes a major constraint on efficient production.

Ghana's main sources of energy are wood and fuels, petroleum and hydropower (Table 4.1). Wood fuel, the major energy source (80 per cent), is mainly consumed by rural households; petroleum (13 per cent) by transportation, industry and commerce, public institutions, agriculture and fisheries; and electricity (7 per cent) is consumed by industry and domestic users. Some electricity is also exported.

Further development and use of domestic energy resources including hydropower, solar, wind, thermal, petroleum and biomass energy needs to be pursued, in order to eliminate inefficiency and supply disruptions and improve distribution. The Government has programmes in the energy sector estimated to cost US$ 466 million in the 1990-1992 period. These include rural electrification; rehabilitation and expansion of the Akosombo plant; construction and commissioning of a lube oil blending plant in Tema; rehabilitation of the petroleum refinery plant, promotion of use of liquified petroleum gas (LPG); and continued exploration for oil. In addition, the Ministry of Energy has a number of programmes for the efficient exploitation of renewable energy sources. These include efficient and prudent utilization of biomass resources to mitigate environmental problems, and harnessing and using solar and wind energies. Policies, strategies and programmes for the sector are outlined in a document produced by the Ministry of Energy in July 1990.

Table 4.2: Energy supply and consumption by source and sector in 1989
in percentages)

Supply / Consumption	WOOD FUEL	PETROLEUM	HYDRO-POWER	TOTAL
TOTAL	100	100	100	100
1 Residential, Commercial, and Public Institutions	100	23	17	77
2 Transport	-	56	-	9
3 Industry	-	13	15	8
4 Volta Aluminum Company (VALCO)	-	-	55	5
5 Agriculture and Fisheries	-	8	-	1
6 Exports	-	-	10	-
7 Losses	-	-	3	-

Source: GOG, Ministry of Fuel and Power, July 1990, Energy and Ghana's Socio-Economic Development.

Wood fuel is abundantly available but poses environmental hazards which demand intensive programmes of replanting and forest management. Conservation programmes have been initiated including reforestation and efficient use of wood and charcoal. However, waste management programmes need to be initiated in agriculture and in the wood and food industries. Appropriate technologies for biogas, carbonization, and bricketting also need to be introduced as part of an integrated programme in the energy, agriculture, industry, and environmental sectors.

Electricity is produced from two dams at Kpong and Akosombo with combined installed capacity of 1012MW. The unexploited potential for hydropower generation is equivalent to the installed capacity. The domestic usage of electricity is very low amounting to only 15 per cent of the population. The major consumer of electricity, at 55 per cent of the total, is the Volta Aluminum Company (Valco). Programmes of rural electrification are underway but are expensive because of the content of the transmission equipment. The present transmission systems are prone to disruption and voltage fluctuations and maintenance is a continuing problem.

Ghana has had some limited success in its petroleum exploration programmes both inshore and offshore. Existing oil and gas deposits have still to be commercially exploited. Thus, dependence on imported petroleum products exposes the country to the vagaries of the international energy market and the country has been adversely affected by the periodic energy crises of recent decades.

Ghana imported oil worth US$191.6 million, equivalent to 19 per cent of total imports, in 1989. Demand for petroleum products is also high and is met in large part from Tema Oil Refinery. The Tema Lube Oil plant is expected to supply its country's requirements of 15,000 tonnes of lubricants. Capacity for petroleum refining amounts to 1.25 million tonnes of crude oil per year. In the last few years the old plants have been rehabilitated and expanded. Distillation

fractions are normally used but since annual domestic usage of gas amounts to 10,000 tonnes while the refinery produces 20,000 tonnes, most of the gas produced by the refineries is released into the atmosphere. Increased domestic and industrial usage of gas in place of fuel wood needs to be promoted as a matter of urgency.

Problems and constraints

- Dependence on limited sources of energy such as wood fuel, oil, and hydropower;
- lack of appropriate technology for utilization of renewable energy resources such as solar, wind, and biomass;
- environmental degradation caused by consumption of fuel wood and disposal of gas;
- lack of maintenance of equipment and facilities in power generation and distribution resulting in power disruptions and voltage fluctuations;
- dependence on imports for power generation and distribution equipment in a period of severe foreign exchange constraints;
- too many institutions involved in the development of the energy sector with resulting co-ordination problems.

Proposed actions

- Examination of energy sector institutions, their mandates, and inter-relationships with a view to streamlining their activities and improving co-ordination;
- intensification of R&D studies into the harnessing and utilization of renewable energy sources and monitoring of their impact on the environment;
- intensification of replanting and forestry management programmes;
- introduction of waste management programmes in agriculture and in the wood and food processing subsectors;
- price incentives to promote substitution of gas for wood fuel in domestic and industrial use;
- expansion of rural electrification programmes and provision of incentives for increased domestic and industrial use of electricity;
- compilation of an inventory of electricity transmission and generation equipment and of national capacities and capabilities for their manufacture with a view to promoting domestic manufacture where feasible. The Ministry of Energy has already identified manufacture of poles for rural electrification as one such project.

4.6 ENVIRONMENTAL PROTECTION

The cost of environmental degradation in Ghana caused by abuse in agriculture, forestry, hunting, industry and mining has been estimated at C41.7 billion annually, equivalent to 4 per cent of GDP. The magnitude of the losses represents a strong case for taking effective actions. As a result, the Environmental Action Programme was tabled by the Environment Protection Council (EPC). Its objectives include:

- maintenance of ecosystems and ecological processes essential for the functioning of the biosphere;
- sound management of natural resources and the environment;
- protection of humans, animals, plants, and their habitats;
- healthy environmental practices in the process of economic development; and
- integration of environmental considerations into sectoral and socio-economic planning at all levels.

Unfortunately, most incentives facing users of Ghana's environment encourage its exploitation, degradation, and destruction rather than its protection and conservation. The major polluters in Ghana are the textile and food processing industries, as well as petroleum refining and handling, and mineral exploitation and processing. These are, however, localized in the major cities and mining areas. A UNIDO study in 1984 into the main sources of pollution by weight in the zone between Cote d'Ivoire and Benin showed the following comparative data: textiles (30 per cent), food processing (25 per cent), petroleum products (20 per cent), and mineral exploitation (10 per cent).

Contamination of the environment takes several forms such as air, water and coastal pollution, and industrial solids waste.

Air pollution

Major sources of air pollution in Ghana are the aluminum smelter, oil refinery, cement asbestos product plants, steel works, cement works, sawmills and wood processing mills, and vehicle exhaust emissions.

Water pollution

The major pollutants of water in Ghana are derived from the food processing, material processing, cooling and mining industries. Food industries including breweries discharge residues and slops often discharge into surface streams.

Coastal pollution

The major pollutants identified include solid wastes and various types of contaminants. Along the whole coastline, discharges into the environment include largely untreated industrial, mining, agricultural and human wastes. They also include heavy metals and suspended solids transported down the coastal zone through the major drainage catchments. The areas of accumulation are the estuaries, lagoons and lagoonal depressions, the beaches and the open marine environment.

Industrial solid wastes

These include wastes from metals, textiles and garments, paper and printing, rubber and plastics, and food processing. Metal wastes comprise both ferrous, non-ferrous materials and about 30,000 tonnes of scrap per year with no provision for collection. Non-ferrous waste tends to be mixed with ferrous waste, and dross for aluminum processing. Textile and garment industries, comprising 150 medium- to large-scale and about 130 registered small-scale

enterprises, generated floor wastes, waxes, yarns, cotton fluffs, felts, improperly printed fabrics, off-cuts, paper and printing generate cuttings, soiled off-cuts, trimmings, exposed photographic films, etc. Rubber and plastic industries generate unrefinable rubber, defective tyres, and waste synthetic rubber. The plastics industry produces about 70,000 tonnes of waste per year including defective canisters, sachet wrappers, waster plastic as chaff, and damaged containers from manufacturing companies. The food, drink, and tobacco industries, including breweries, canneries, oil palm processing and meat processing factories produce organic wastes including palm oil sludge, peels, pineapple waste, and tobacco waste.

Proposed actions

The maintenance, let alone the enhancement of the environment calls for a number of actions. Given their financial implications, however, these actions would necessitate support from the international community. They include:

- strengthening the institution of environmental impact statements;
- enforcement and refinement of existing environmental legislation;
- the need for the general population to be educated in order to become environmentally aware and environmentally responsible. Special techniques for communication and training should be devised given the low level of literacy;
- a company management training and awareness programme on environment;
- establishme of a data base on clean technologies;
- provision of tax and other incentives to encourage introduction of clean technologies;
- building of a pilot plant for waste recovery;
- establishment of a monitoring system for air, water, and coastal pollution;
- active participation in United Nations environmental agencies.

CHAPTER 5
THE MANUFACTURING SUBSECTORS

According to the various criteria examined in Chapter 3, the three most important subsectors of manufacturing in Ghana are wood products, food (including fish), beverages and tobacco, and textiles and garments. These industries, the agro-based subsector, together with chemicals, and non-metallic minerals, and the key cross-sectoral activity of engineering, form the core activities of the targeted approach recommended by this mission. The first three are all linked to the agro-base of the country. Chemicals are also important although they are much less developed at present. Production of chemicals is based on imported inputs but there is significant potential for substitution of domestic raw materials in some branches of the chemicals subsector. Non-metallic mineral-based industries constitute a surprisingly small subsector despite their strategic importance to the construction industry and the relatively rich resource base available in Ghana.

There are problems and constraints associated with all of them. Rehabilitation, as well as new investments, are necessary. But the resource base, both physical and human, is rich, and if given sufficient support in terms of policies and infrastructure, capital and training, the manufacturing sector can play a key role in promoting growth and restructuring of the Ghanaian economy.

5.1 AGRO-BASED INDUSTRIES

Because of the rich resource base and unsatisfied demand, these industries offer the best opportunities for utilizing renewable domestic resources and providing basic needs for the population. They also have the greatest potential in terms of promoting incomes, employment and non-traditional exports. If appropriate technologies are employed, they also offer opportunities for environmental sustainability.

Agriculture normally contributes about 50 per cent of the value of Ghana's gross domestic product (GDP). Within agriculture and forestry, the principal products are timber, roots and tubers (cassava, cocoyam, yam), fruits and vegetables (pineapples, citrus, tomatoes, banana, plantain), tree crops (cocoa, oil palm, coconut, coffee), industrial crops (cotton, kenaf, tobacco), and cereals (maize, rice, millet and sorghum). The percentage contribution of these various products to agricultural GDP is shown in Table 5.1.

The growth rate of agricultural and forestry output has been picking up since the ERP got underway. In the 10 year period 1979-89, the average annual rate of growth was 5 per cent compared with less than 2 per cent in the previous decade. Thus the supply base for agro-industries has been improving. The government is aware that the achievement of its objectives of food security and increased provision of other basic needs also require that increases in agricultural output be matched by increased investments in storage and distribution and by the promotion of processing and exports in agro-based industries including wood.

5.1.1 Wood processing industry

The timber industry has traditionally been a major foreign exchange earner for the country, ranking third after cocoa and minerals. It employs about 250,000 people and provides a livelihood for about 2 million more. Logging operations have promoted infrastructural development through the provision of access roads and the creation of farms and villages that follow forest roads.

Table 5.1: Percentage contribution of various products to agricultural GDP in 1987

Crop	Contribution (per cent)
Cassava	22
Cocoa	14
Yam	13
Plantain	11
Cocoyam	9
Fish	5
Maize	4
Vegetables	2
Cattle	2
Sorghum/millet	2
Rice	1
Oil palm	1
Poultry	1
Sheep	1
Goats	1
Forestry	11
Total agricutral GDP	100

Source: Ministry of Agriculture, Agriculture in Ghana, Facts and Figures, May 1991.

In common with other sectors, the timber industry suffered severe decline between the late 1970s and the introduction of the ERP in 1983. The timber industry was then targeted for priority rehabilitation and expansion. As a result of the injection of US$ 128 million in bilateral and multilateral loans and credits between 1983-86, the forestry and wood processing sector now accounts for about 5 to 6 per cent of total GDP, equivalent to US$ 97 million in 1988.

Ghana's total land area is about 24 million ha. of which about 8 million ha., or 34 per cent, is a high forest zone. Results of a national forest inventory in 1989 estimated the standing stock of economic species to be 188 million cubic meters and the increment in growth of economic wood species in the nigh forest zone to be 4 m^3 ha. per annum, yielding an annual increment in productive forest of 4.6 million cubic meters. Estimated annual cut for Ghana is 1.25 m^3 ha. This is within the allowable annual cut from productive forests of 1.45 million m^3.

There are 680 tree species in Ghanaian forests but only 40 species are currently considered as commercial, that is, for which local and export markets exist. A second group of 20 are considered as marginally commercial. Research and development efforts are being directed at identifying the usage characteristics of wood species so that emphasis can be placed on functional utility rather than trade names in future. It is hoped that, by focusing on functional utility, more of the lesser known species could be brought into the commercial mainstream as processed products.

Ghana's forest resources have traditionally been well managed and viable institutions now exist for their controlled exploitation and regeneration. These institutions, which include the Forestry Department, Forest Products Research Institute, and the Timber Export Development Board (TEDB) have been strengthened in the course of ERP implementation. The forest resource base, exploited at current levels, can sustain the wood processing industries for a long time to come without adverse effects on the environment.

Historically, the timber industry began as an activity of private expatriate companies exploiting a few well known hardwood species for export as logs to offshore clients. Ghana is still known more for its logs than for its processed wood products. The industry continues to be dominated by private loggers. However, some companies have established small-scale sawmills to process low-grade logs into lumber for the local and regional markets.

There are three categories of operators in the industry classified as primary (logging), secondary (sawmilling, plymilling and veneering), and tertiary (furniture, mouldings, floorings, doors, etc).

Table 5.2: Number of enterprises[1/] and value of exports in the wood and wood processing industry, 1989 and 1990

Type of activity	Number of enterprises	Value of exports 1989 US$	Value of exports 1990 US$
Logging	200	44,653,535	47,482,426
Sawmilling	100	82,076,486	120,864,447
Plymilling	9	563,466	1,064,381
Veneermilling	13	16,883,777	21,075,061
Chipboard	1	-	-
Furniture:	200		
of which medium/large	40	6,881,491	8,771,073
Flooring	4	234,971	1,221,181
Doors	6	-	-
Profile boards	5	446,492	591,261
Toys	2	25,442	-
Treated poles	1	-	557,604

[1/] Enterprises may be involved in more than one activity.

Source: TEDB, Export performance of wood and wood products 1985-90.

There are nine state-owned enterprises in the timber and wood processing subsector and they include some of the biggest integrated firms in the industry, accounting for about one-third of the value of wood exports. Total installed sawmilling capacity is 1.1 million m^3 but current capacity utilization is only 50 per cent. The objective in the 1990-92 period is to achieve 80 per cent sawmilling capacity utilization by improving production management and procedures as well as manpower skills.

The main thrust of development in the timber industry is now directed at restoring and enhancing its foreign exchange earning capacity. The TEDB's immediate objective is to promote exports of sawn lumber and sliced and dimension-peeled veneer which are both in strong demand. Other processed products with good export potential include cladding (ship and panel), furniture blanks (dimension-sawn, including curve-sawn, for finishing in importing countries), and lesser known wood species as building materials for heavy construction and harbour work.

Problems and constraints

- Loggers and secondary processors are accustomed to exporting their products and are reluctant to sell to local tertiary processors. When they do, the processors complain of high lumber prices. Chemicals and spare parts are also expensive and are often in short supply. Maintenance of machinery is poor because of lack of appropriate skills. As a result of these constraints, local production costs are high, making the local processor uncompetitive compared with his Asian and Latin American counterparts;

- the acute need for kiln drying facilities has been identified by the TEDB in order to improve the quality of tertiary wood products;

- poor road, rail, and shipping networks make it difficult to meet delivery deadlines. In order to avoid acquiring a reputation for unreliability, local processors are often forced, at great expense, to maintain high inventories of both raw materials and finished goods;

- the tertiary wood processing industry suffers from a lack of skilled shop floor manpower as well as management expertise in production, accounting, and marketing;

- high import dependence for spare parts of wood-working machinery;

- there is a general lack of information about overseas markets and few linkages between local processors and overseas agents who could market their products and arrange for their attendance at selected trade fairs;

- there is huge wastage of wood at the secondary processing stage;

- drying and seasoning techniques are poor;

- the quality of furniture design is poor, causing huge wastage of wood;

- the quality of workmanship and finish is often poor and inconsistent.

Proposed actions

- A feasibility study into the economics of kiln drying and the optimum siting and selection of kiln drying facilities;

- a detailed study into the economics of waste recovery and further processing of wood now being discarded as waste. The possibility of the high cost of local lumber being reduced by improving the incomes of sawmillers and other processors through the manufacture of joinery blanks, furniture parts, floors etc., which would lead to far less wood wastage, needs to be reviewed;

- establishment of a pilot plant for manufacture of some spare parts for wood-working machinery all of which is currently imported. This pilot plant might be established under the aegis of GRATIS;

- sponsorship of visits by groups of small-scale producers under a TCDC arrangement to enterprises in other countries using higher technologies as a means of promoting transfer of skills and technology and possibly export opportunities;

- promotion of furniture design and furniture production courses in polytechnics and vocational training institutes;

- establishment of a design centre for furniture and other wood products, with donor funding and designers from donor countries.

5.1.2 Food processing industries

It is estimated that the food processing sector accounts for about 13.5 per cent of employment within the formal manufacturing sector and for an ever greater percentage in traditional processing enterprises in the informal sector. The industry spans the whole range of cottage to large-scale enterprises, using both traditional and modern technologies. Capital equipment and inputs used in traditional enterprises are fabricated locally while modern sector equipment and machinery are imported.

The major branches of the food processing subsector are roots and tubers, cereals, fruits and vegetables, nuts and oilseeds, legumes and pulses, dairy products, meats and poultry, cocoa, and fish. The first four branches will be analyzed in some detail because of their importance in the Ghanaian diet and in domestic food security, and also because of their potential for increased processing. Cocoa, the major foreign exchange earner for the economy, has received adequate attention and there are already programmes envisaged for increased processing and for the export of higher value-added processed products.

(i) Roots and tubers

The implicit policy objectives in this branch are the provision of food staples on a sustainable basis through increased primary production, preservation, storage, and efficient processing.

In 1990 the total production of roots and tubers was 4,409,000 tonnes consisting of cassava, yam and cocoyam. Together they account for 42 per cent of the total daily intake of calories.

Processing of tubers is largely still traditional. There are a number of semi-mechanized plants, especially for cassava processing but large-scale processing is hampered by a number of factors. These include differences in varieties, shapes and sizes; low volumes; seasonality; high transportation costs; irregular marketing systems and differing consumer preferences.

There are · › large firms at present processing roots and tubers. The Food Research Institute has set up a mechanized cassava pilot plant at Pokuase for research and demonstration purposes. There is potential for establishing a cassava starch factory which could use cassava chips bought from small rural enterprises under a sub-contracting arrangement. Agronomic research at the Crops Research Institute is currently aiming at production of standardized varieties for processing.

(ii) Cereal and cereal products

The objective in this subsector is to raise primary production through increased hectarage, higher yield, and improved post-harvest technology so as to produce increasing supplies of raw materials for the agro-based subsector. Other objectives include improved efficiency at the processing stage and the production of a growing diversity of cereal-based products. Among the strategies envisaged for achieving the objectives are rehabilitation and renewal of machinery; research and development of various products and inputs including processing machinery and upgrading of traditional technologies; expansion and improvement of storage facilities to reduce post-harvest losses; and incentives to improve access to credit and training of skilled and managerial staff.

Raw material availability for the cereal processing subsector amounted to 845,000 tonnes in 1990, consisting of maize, sorghum, rice and millet. Demand for cereals is higher than production; cereal imports amounted to 115,515 tonnes of wheat and 24,700 tonnes of rice. Projections of demand and production indicate that there will be surpluses of maize in the year 1995 amounting to 167,000 tonnes. Imports of rice, barley, malt and wheat are increasing.

The grain milling industry is characterized by low capacity utilization, obsolete equipment, a mix of traditional and modern technology, and poor storage facilities.

There are no large-scale enterprises milling maize, sorghum and millet and this is a constraint on the production of flour, bran and germ which could be used for further processing of tertiary products such as starch, oil, and animal feeds. Rice is milled in medium-sized and large-scale mills. Total rice milling capacity is 612,400 tonnes which is much higher than the combined total production and imports of the grain.

A number of programmes to promote production and efficient processing of cereals are being implemented. Major increases in cereal yields per hectare are envisaged under the Medium-Term Agricultural Development (MTAD) programme. Rehabilitation and renewal of flour mills are programmed for Tema Food Complex, Irani Brothers and Takoradi Flour Mills. Specific research programmes at the Crop Research Institute are addressing production problems of millet, maize, sorghum and rice through improved breeding at the Nyankpala Agricultural Experimental Station. The Food Research Institute has extensive programmes on storage and processing of sorghum for the brewing industry.

(iii) Fruits and vegetables

Processed dried vegetables, jams, juice concentrates, canned products from pineapples, citrus fruits, and a wide range of vegetables are in demand in export markets. Problems exist in relation to production, storage, processing technology and infrastructure. They need to be addressed in order to reduce post-harvest losses, and the effects of seasonality, and low quality. The subsector lends itself to labour-intensive technology. In order to be competitive, versatility in handling different types of vegetables and fruits needs to be introduced into processing such plants.

(iv) Nuts and oilseeds

The government's objective for the subsector is to attain self-sufficiency in oils and fats for food and related industries. The mechanisms to achieve these objectives include increasing production of the relevant raw materials; improving plant efficiency, productivity, and product quality; establishing more processing facilities; and identifying new export opportunities.

The subsector has backward linkages to agriculture and forward linkages to the soap and animal feed industries. It includes processing of oil palm, palm kernel, groundnuts, coconuts, cotton seeds, and sheanuts into edible oils and fats. Production of various nuts and seeds in 1990 is estimated at 1.2 million tonnes per year and of oil palm at 428,880 tonnes. Total production of oils and fats was estimated at 119,400 tonnes in 1987, compared with a projected demand of 202,000 tonnes in the year 2000.

The branch is characterized by traditional processing; obsolete machinery, especially in the processing of nuts; low capacity utilization; low quality of products; lack of refining capacity; and erratic supply of raw materials.

The rehabilitation and diversification of the crops, initiated by the Ministry of Agriculture, is intended to increase hectarage under palm oil cultivation. It also aims to establish 60 intermediate technology palm oil mills of average capacity of 1 tonne per hour in 60 new locations in addition to the existing large scale milling operations particularly in the Western, Brong Ahafo and Ashanti Regions. It is envisaged that the small-scale mills will improve the exploitation of hitherto neglected small plantations and wild groves so that palm oil can make up for the expected shortfall in domestic supply of oils and fats. Cottonseed processing has been delegated by the government to Crystal Oil Mills, a joint government and private enterprise. The primary mill rehabilitation and the installation of a caustic refining facility were suspended in 1987 and should be re-started as soon as funds are available.

The biggest constraint facing further expansion of palm oil production is the absence of adequate refining facilities. Only two firms refine palm oil by the fractionation and physical refining methods. Physical refining may not be applicable to other crude vegetable oils. There is an obvious need for additional large scale vegetable oil refining and oleochemicals production facilities. A study should be undertaken into the feasibility of rehabilitating existing firms and establishing other vegetable oil refining enterprises by subcontracting rural producers of crude oil.

The current packaging of crude edible palm oil in used metal drums should be discontinued. It is inappropriate for distribution to non-producing domestic regions and to neighbouring countries such as Burkina Faso.

(v) Beverages industries

The beverages industry employs 7.3 per cent of the manufacturing labour force and contributes about 8 per cent to gross manufacturing output. The activities in this subsector include distilling and blending of spirits and production of beer and soft drinks. Beer processing is the major activity in terms of gross output, representing about 6.7 per cent of total manufacturing output. There are four breweries in the country based on imported barley and hops and imported technology. There is significant potential for substitution of locally grown cereals for imported barley in the brewing industry and for the manufacture of other inputs including sugar, bottles and cans.

Problems and constraints of food processing industries

- There is no clear government policy or strategies for the development of the agro-industries subsector enabling them to take advantage of increased agricultural production;
- marketing of agro-industries products within the domestic market is constrained by the absence of a national food and nutrition policy;
- conflicting pricing policies act as constraints on the development of agro-industries;
- involvement by government in agro-industrial production is still excessive due to the slowness of divestiture;
- difficulties of access to credit and high interest rates as well as poor incentives for farmers and processors constrain expansion of production and processing;
- excessive dependence on imported bottles for beverages industry;
- lack of adequate infrastructure for transport and storage of raw material supplies;

- agricultural wastes are not used for further processing;

- inadequate support systems for research and development, quality control, engineering, fabrication and maintenance are reflected in low quality products, dependence on imported technology, obsolete machinery, low capacity utilization, post-harvest losses and lack of adequate storage facilities and packaging materials;

- excessive post-harvest losses in roots, tubers, and cereals;

- inadequate storage facilities.

Proposed actions
General

- Articulation of national food and nutrition policy;

- impromont of price incentives for farmers;

- improvement of raw materials supplies and marketing through infrastructural improvement and R&D to improve storage and packaging structures;

- increase in R&D expenditure on storage and packaging methods;

- application of clean technologies through waste treatment and recycling;

- increased plant versatility and diversification to improve product quality and competitiveness;

- strengthening of industrial extension services;

- establishment of pilot plants for demonstration and commercialization of new products;

- increased domestic manufacture of relevant processing, storage, and packaging machinery;

- upgrading of traditional technologies.

Subsector specific actions

(i) Roots and tubers

- Agronomic research to promote production of roots and tubers that can be processed into food, starch and glucose in large-scale enterprises. The Crop Research Institute programme on roots and tubers needs financial support;

- studies on post-harvest losses of roots, tubers, and cereals to facilitate development of appropriate technologies for storage;

- small-scale plants with storage facilities, mechanized processing systems, and waste treatment should be established through technical assistance and private investment;

- the pilot plant of FRI at Okponglo should be expanded to include chemicals based on agricultural wastes.

(ii) Cereals and cereal products

Many Ghanaians are switching from traditional food to cereals as a staple diet. This switch should be encouraged and MTADP's efforts to increase production of cereals such as sorghum, millet, and maize should be supported.

The demand for a variety of cereal crops is increasing and the manufacturing sector should be encouraged to respond quickly to the challenge. Programmes in need of support include:

- large-scale milling of corn, sorghum and millet, to facilitate vertical integration into ingredients for animal feed, corn oil, and possibly starch and glucose. The promotion of the three cereals will inevitably benefit rural farmers, increase incomes, alleviate poverty, and provide more food for farmer families. An additional benefit is that sorghum and millet are highly resistant to drought;

- a composite flour programme to gradually replace wheat flour in the bakery and brewery industries. The proposal on composite flour milling already submitted by the Grain Milling complex should be examined through feasibility and market studies. Composite flour technology is now well established in a number of countries and Ghana could probably adapt it to suit local conditions. This programme will supplement the efforts of the Food Research Institute (FRI), which is currently screening sorghum varieties for suitability in processing. The follow-up phase should involve establishment of a pilot plant at FRI to process sorghum.

(iii) Fruits and vegetables

- Integrated factories which can handle fruits and vegetables to produce juices, concentrates, pieces and dried products should be promoted as a priority;

- programmes for increasing agricultural production are already being implemented but because of the seasonality of these products, a special programme for storage facilities should be launched;

(iv) Nuts and oilseeds

- Rehabilitation of cashew nut and coconut plantations to promote diversification of the raw material base of the processing industry;

- study to examine the feasibility of processing coconut fibre and shell to produce weaving fibre, activated carbon, and charcoal;

- study to examine the feasibility of processing cashew nuts into products such as roasted nuts, cashewnut shell liquid, cashew "apple" juice, concentrates, and charcoal;

- follow-up actions could include the establishment of two integrated pilot plants for demonstration of coconut and cashew processing in growing areas like the Western Region;

- study to examine feasibility of establishing a large solvent extraction plant for soya beans, cottonseed, cocoa cake, and other non-traditional oilseeds, coupled with a suitable vegetable oil refining facility.

(v) Beverages industry

- Increased substitution of locally-grown cereals for imported barley in the brewing industry;
- study to investigate domestic production of bottles and cans in conjunction with identification of rehabilitation needs of existing bottle plant.

5.1.3 Fish processing

Ghana is the leading fishing nation in West Africa. The country has the highest national production of fish, approaching 400,000 tons per year. It also has the potential to produce over 10,000 tons of aquaculture.

The government's objectives for the fisheries subsector are:

- to improve the productivity in marine artisanal fisheries as a source of low cost protein food and as a means of employment and income for the artisanal communities;
- to promote and modernize the industrial fisheries as a source of food, income, and foreign exchange and as a stimulant to the industrial development of the whole marine sector;
- to encourage the integrated development of inland fisheries regions to provide protein food and boost productivity and incomes of the lake and riverine communities;
- to develop aquaculture in fresh water ponds and lakes as a means of increasing total fish production for both domestic and export markets.

The fishing industry is officially estimated to contribute 2 per cent or less to GDP. This may underestimate its total contribution since the gross value of fisheries is around US$ 300 million; the industry spends around US$ 150 million locally in goods and services, and employs 81,000 full-time and 58,000 part-time in the capture sector and around 10,000 persons in the harvest sector and support industries.

The fish-processing industry has two clear subsectors - the traditional and the industrial. The traditional sector lands around 60 per cent of the total catch of fish for the domestic market. Most of the production is smoked though a small proportion is salted or sun dried. Added value through this processing is around US$100 million. Ghana occasionally needs to import fish off season to maintain its high per capita demand of 23kg.

The export industry is based on tuna and quality demersal fish from deep sea fleets. Most tuna is landed at Abidjan since the Tema factories are currently out of service. This severely restricts the potential foreign exchange earnings from tuna. Rehabilitation of tuna processing in Tema currently underway needs to be completed as quickly as possible in order to increase added value from this resource.

Problems and constraints

For many years Ghana has had a substantial offshore fishing industry which includes a fleet of refrigerated trawlers, tuna seiners and bait boats, and pole and line vessels. The substantial investment in an offshore fishing fleet is mirrored in the provision of port facilities, cold stores, ice plants, and ship repair services. However, due to lack of investment during the period of economic decline, many of the facilities and vessels now require rehabilitation.

The traditional artisanal marine and inland fisheries, while continuing to grow, are also in need of rehabilitation. Marine canoe fishing fleets remain the backbone of the industry but there has been very little investment in canoes, harbours, markets, and shore facilities.

Lack of investment has led to high costs and lengthy down-time in the industrial sector due to inefficiencies in vessels and shore facilities. Much of the fleet and shore equipment is old and in need of rehabilitation.

The processing sector needs to be rehabilitated in order to increase value added. Rehabilitation of equipment would enable export prices to be raised from the current US$ 600 per ton to over US$ 1,100 per ton.

The artisanal processing sector requires more hygienic premises and a secure long-term supply of fuel wood. There is an urgent need to instal storage facilities for smoked fish during the herring season in order to prevent losses through spoilage currently estimated at around 34,000 tons, with a market value of US$ 25-30 million.

Imports need to be regulated so that they fill only the shortfall in domestic supply during the off season. Uncontrolled imports push local fish out of the market and put pressure on the cold stores, leaving little space for local frozen fish when the domestic catch rises again.

There is little control of trawling to prevent harvesting of immature fish. The industry also suffers from having to deal with several ministries and departments such as Agriculture, MIST, Trade, Transport, the Navy, and so on. There is a great need for the establishment of a statutory body to oversee all matters concerned with the fish industry.

Proposed actions

The above mentioned problems and constraints are to a large extent covered by a programme, "Integrated Development of Fisheries Industrial System" prepared with UNIDO's assistance. This comprehensive integrated programme has an investment potential of about US$ 57 million. It also has components of technical assistance and policy advice.

The programme addresses the rehabilitation of ports and processing facilities, development of indigenous capability for manufacturing deck and fishing gear, credit, and export facilities.

In addition to this programme, a study to explore the feasibility in the longer term of indigenous local construction of fishing vessels including modern steel refrigerated trawlers, possibly through joint ventures could be undertaken.

5.1.4 Textiles, garments, and leather

The contribution of the textiles, garments, and leather subsector to manufacturing output is estimated at over 6 per cent. Gross output of the subsector has recovered from 4.0 per cent to 6.3 per cent between 1983 and 1988, but has not yet reached its 1981 level of 7.1 per cent. Capacity utilization rates are still low, although there have been some improvements. Between 1983 and 1987, capacity utilization rates in textiles increased from 16 per cent to 33 per cent; and in garments, from 25 per cent to 35 per cent. On the other hand, capacity utilization in leather decreased from 26 per cent to 20 per cent over the same period. Total employment in textiles and garment firms is estimated at 16,650 persons. Most of the firms in this subsector are small-scale, labour-intensive and privately-owned.

The subsector is highly import dependent. Raw materials, intermediate inputs, and capital goods are largely imported. Domestic production of cotton is increasing steadily and is estimated at 3,000 tonnes of lint cotton annually; projected domestic demand is for 12,000 to 14,000 tonnes per year. A number of industries in this subsector have closed down in the last few years due to the shock of competition brought about by the liberalization programme. The garment industry has been particularly badly affected by uncontrolled dumping of second-hand clothing.

Manufacturing activities in textiles and garments consist of spinning, weaving, finishing, and making-up of various textile products including garments and handicrafts. Production within the formal textile manufacturing subsector is constrained by obsolete machinery and low capacity utilization. Rehabilitation is urgently required in order to increase output and to improve quality. The level of textile design in Ghana is very high but there is very little linkage between the art faculty of UST, where design skills are taught, and the textile industry where the skills should be applied. This weakness should be urgently addressed.

In the leather industry, traditional tanning by small-scale artisans using vegetable tanning is the most widely-used technology. Hides and skins are normally processed to wet, blue, crust, finished leathers and leather goods. Artificial leather manufacturing is not competitive and is declining.

There are three large-scale tanneries and a state-owned manufacturing company. The leather industry is highly import-dependent. Even hides and skins are imported from neighbouring countries. Although livestock production is growing, off-take rates are still very low. Availability of hides and skins is constrained by the use of skins as food and by the scattered location of butcheries. The quality of skins is low.

Both textiles and leather could have a greater impact on the domestic economy if the import content of the industries could be reduced and more backward and forward linkages created. Rubber inputs to the shoe industry could increase if there was an expansion in domestic rubber production.

Export markets are difficult to penetrate but a number of garment enterprises are currently receiving orders from abroad. There is also the possibility of using more leather in the production of traditional handicrafts for export. Although labour costs are relatively low in Ghana, quality is often low and international markets are dominated by countries with more sophisticated capital equipment and highly-skilled designers and technicians.

Problems and constraints

- Unreliable supplies of domestic raw materials;
- high import dependence;
- obsolete plant and equipment;
- shortages of credit and high interest rates;
- low level of production skills;
- lack of commercialization of textile design skills;
- poor management;
- uncontrolled dumping in the garment industry;
- environmental degradation and high cost of effluent treatment.

Proposed actions

- Selected rehabilitation of textiles, garments, leather and shoe industries;
- implementation of maintenance programmes at enterprise level;
- expansion of training programmes in polytechnics and colleges of art in management and design;
- commercialization of design skills by the establishment of a design centre linked directly to the textile and clothing industries;
- expansion of cotton, kenaf, and livestock production through application of improved technology and price and tax incentives;
- feasibility studies on industrial use of pineapple, coconut, and banana fibres;
- immediate implementation of mechanism to control imports of second-hand clothing;
- launch of 'Buy Ghanaian' campaign in textiles, clothing, and leather goods;
- improvement in quality control in textiles and leather.

5.2 CHEMICAL INDUSTRIES

This subsector is one of the least developed in Ghana. Production of fertilizers, pesticides, pharmaceuticals, soaps and detergents is based on imported inputs. Finished products are also imported in bulk form for local packing and distribution.

Table 5.3 shows the structure of the subsector. The two most important branches from the point of view of employment, gross output, value added and utilization of domestic raw materials are soap, detergents and cosmetics, followed by drugs and medicines.

All industrial chemicals (Table 5.3) are imported for direct retailing. There are no export prospects for most of the enterprises in paints and varnishes, cosmetics, and rubber industries. However, some chemical industries have significant potential for growth, especially, those branches that process domestic inputs, including:

- industrial chemicals, and particularly, the production of caustic soda on the basis of abundant salt resources;
- pharmaceuticals, especially traditional drug preparations from local herbs;
- soap and detergents produced from local raw materials such as oils and fats, herbs, spices and essences;
- plastics, which are rapidly replacing wood, paper, glass and metals and which provide important inputs for other industries such as building materials and construction, packaging, electrical, and electronic industries.

Table 5.3: Structure of the chemical industry, 1986

Branch	Employment[1/] (Persons)	Gross output (¢'000)	Net output (¢'000)	Source of inputs domestic	Source of inputs foreign
Industrial chemicals	100	129,260	43,859	--	33,005
Fertilizers and pesticides	168	139,954	45,158	29,957	26,520
Paints and varnishes	254	258,197	97,774	31,397	72,426
Drugs and medicines	1,466	1,401,450	875,606	72,994	319,080
Soaps, cleansers, perfumes and cosmetics	1,169	3,467,864	2,190,846	206,385	267,345
Other chemicals	225	229,600	131,097	9,759	28,224
Rubber & plastics					
Tyres and tubes	697	241,534	63,621	17,167	102,616
Rubber products	518	271,338	110,721	56,895	50,676
Plastics	677	723,929	240,129	4,320	383,557

Source: Statistical service, 1989, industrial statistics 1985-1986.

1/ Enterprises employing 10 or more persons.

Industrial chemicals

There are numerous chemicals imported into the country. There has been no serious attempt to date to develop local substitutes for some of the imports although there are sufficient resources to warrant serious consideration of the manufacture of a number of basic industrial chemicals in the country.

The resource base for the chemical industry includes:

- salt, for processing into caustic soda;
- vegetable oils and fats, particularly palm oil, palm kernel oil, shea butter, cocoa butter, and soya bean oil which could be processed into downstream fatty acids, alkyl methyl esters, fatty alcohols, glycerine, and their derivatives;
- sugar cane, cereals and other biomass which could be converted to ethyl alcohol, which in turn could be further converted to polyvinyl chloride (PVC) and other plastics;
- relatively cheap electricity and energy supplies;

- residual petroleum for further processing to plastics, drugs and intermediate chemicals;
- flora and fauna for the production of herbal medicines, perfumes,and essences;
- natural rubber latex;
- agricultural wastes for production of fertilizers.

The production of some of these industrial chemicals is not as capital intensive as corresponding investments in petroleum-based products. The raw materials are grown or can be grown easily, given the climate and ecology. For some of the agricultural-based materials, such as palm products and maize, downstream processing could provide a new market for the crude oils. Alcohol is already produced locally in crude stills. The products can be tailored to meet domestic and the West African regional demand.

The first priority is increased production of salt. Salt is important as a preservative in agro-industrial processes and it is linked to the production of caustic soda and allied chemicals.

Sea salt production in Ghana is a long-established activity producing about 100,000 to 150,000 tonnes annually for domestic consumption and a surplus for export. There are 18 salt works located mainly along the coast of Great Accra and Central Region. This belt is unique in West Africa, having low rainfall and six months of abundant sunshine. All other parts of the West African coast have a high annual rainfall which militates against sea salt evaporation technology for salt winning. From the point of new ownership, the industry is highly concentrated, with a single entrepreneur owning the two largest mechanized works accounting for 80 per cent of total output. Value added is estimated at between 60 and 70 per cent of sales. The industry has potential to provide increased employment opportunities. In addition to the availability of a cheap domestic resource base (sea water) and cheap technology (solar evaporation), the expansion of the salt industry provides foreign exchange earnings potential through exports to the large Nigerian and other regional markets.

Development of a caustic soda industry should follow expansion of salt production since its basic input is salt. As can be seen from Table 5.4, Ghana's major industrial chemical import is caustic soda, which is used in the production of soaps, cosmetics, pharmaceutical and textiles.

Table 5.4: Imports of basic industrial chemicals, 1986-87
(Cedis million)

Chemical	1986	1987
Caustic soda	88.6	176.7
Soda ash	21.7	-
Ammonium sulphate	99.9	14.7
Phosphate fertilizer	20.3	-
Potassic fertilizer	2.1	43.4
Fertilizers	-	24.9

Source: Sael, L.B., p. 48.

Construction of a caustic soda plant is under consideration. The proposed Korean/Ghanaian joint venture is based on inputs of local salt and the projected output of 20,000 tonnes of caustic soda would meet Ghanaian demand, which is currently around 18,000 tonnes annually. Other products to be produced include hydrochloric acid (10 tonnes per day), and bleaching powder (10 tonnes per day).

Problems and constraints

- The technology level in salt production is very low and in need of upgrading. Purification plant facilities are virtually non-existent;
- productivity of the smaller salt producers is very low and in need of improvement;
- the quality of the salt is low and needs upgrading;
- exports to regional markets are constrained by trade barriers.

Proposed actions

- Investment in machinery to purify crude salt;
- establishment of a joint venture for a caustic soda plant;
- tax and other incentives to encourage entry of more small-scale producers who could produce on a sub-contracting basis for the larger refining facilities that would be integrated into the caustic soda production process;
- promotion of markets and distribution channels for various types of salt for household, industrial, and livestock production uses;
- efforts by ECOWAS countries to reduce trade barriers;
- upgrading of technology;
- improvement of quality control.

Pharmaceuticals

Local activities in the pharmaceutical industry consists of grinding, mixing, and packaging of imported products for retail sale.

In spite of the existence of more than 20 manufacturing enterprises, only 32 items out of a list of 211 national essential drugs are supplied by local producers.

Herbal medicines

Traditional drugs are all derived from wild plants. In Ghana, abundant resources are available for production of good medicines. Even the rare ones can be cultivated easily due to the favourable ecological conditions. The cost of traditional medical preparations can be cheaper than modern drugs. They have proved their worth over the years as cures for asthma, diabetes, and hypertension.

Problems and constraints

- Producers of traditional medicines are not well trained and the methods used for drug preparation are rather primitive and unhygienic;

- the traditional medical preparations lack standardization, formulation in dosage forms, and the dosage prescriptions. Traditional dosage forms are limited to decoctions, dried powders, suspensions, syrups, and emulsions preserved for long periods;

- most traditional drugs lack scientific testing to prove their efficacy.

Proposed actions

- Construction of a pilot plant to produce a selection of the most-used traditional medicines;

- increased testing of traditional medicines so as to establish the scientific efficacy of the formulations. Establishment of linkages with overseas pharmaceutical laboratories through the WHO for verification, international certification, and dissemination of test results of promising herbal drugs and pharmaceuticals;

- development and commercialisation of herbal medicines by the creation of an institutional matrix of researchers, processors, laboratories, and regulatory bodies (Pharmacy Board, Ghana Medical and Dental Association, Standards Board) charged with responsibility for mobilizing resources to bring herbal medicines from shelf to market;

- increased supply of tools and equipment for cultivation of medicinal plants and herbs. This agricultural linkage is essential for standardization of raw materials. (The main requirements are land-clearing and preparation equipment fitted to a tractor, chain-saws, an irrigation sprinkler system, a spraying machine and a tractor trailer);

- promotion of commercialized production of spices, essences and perfumes which have forward linkage to soaps, cosmetics, and food processing. Some of the herbs could be used as raw materials for the preparation of spices, perfumes, and essential oils. A specialist perfumer should be engaged to identify the products with the greatest potential.

Soaps and detergents

The main products under this industrial branch are soaps and detergents, toothpastes, toiletries, and household cleansers. Apart from soap manufacturing, all other products in this branch currently rely heavily on imported raw materials. Local value added is very low.

There are about 20 companies now in operation in the branch, 10 fewer than three years ago. Half of the companies produce toiletries and cosmetics, while the others concentrate on laundry and toilet soaps; Lever Brothers and Ameen Sangari and Appiah-Menkah Complex are the major producers of toilet soaps.

The development of local raw materials such as oils and fats, spices and essences, caustic soda, mineral oils and greases could stimulate major activity in this industry. Lever Brothers is very well endowed with skilled management in production and marketing to exercise leadership in this branch and should be encouraged to diversify further into downstream oleochemicals production to produce intermediates for the producers of cosmetics and toiletries.

Proposed actions

- Tax incentives to vegetable oil producers and refiners to encourage production of oleochemicals;

- feasibility and market studies to assess development potential in this field and to expand capacities to produce crude vegetable oils.

Plastics

Linkages to key sectors in the economy make the plastics industry a priority area for development. The subsector has 30 enterprises located in the Accra and Tema industrial areas. The major products produced in 1987 were woven sacks (10,000 tonnes) linen bags (8,000 tonnes), household goods (7,000 tonnes), industrial plastic containers (5,000 tonnes), and PVC pipes (3,000 tonnes). Capital equipment in the industry consists of medium capacity machines for injection moulding, blow moulding and extruding thermoplastics, looms for weaving bags and sacks of polypropylene, and for cutting, sealing and printing of film products.

Proposed actions

- Feasibility study on the establishment of a petro-chemical industry and/or an oleochemical industry.

5.3 ENGINEERING INDUSTRIES

Up to now, engineering activities in Ghana have been developed on an ad hoc basis, being primarily driven by short-term requirements for servicing and maintenance of machinery such as vehicles, agricultural equipment, and ships. Because of this, "engineering" as such has not been formally recognized as a subsector of industry. A formally structured machinery subsector should be established to include the manufacture of fabricated metal products, machinery and equipment (Annex 3).

The engineering subsector is divided into two main branches, metallurgical/metalworking, and electrical/electronic industries.

Metallurgical / metalworking industries

Compared to other branches of industry, the metallurgical industry in Ghana is relatively under-developed. Iron ore is available but is not yet mined and smelted. Indeed, there is a foundry still in packing cases, as yet unopened. There is also an SOE steel mill working below full capacity. The aluminum plant has potential for expansion and diversification but is subject to marketing and financial constraints. The metalworking branch produces garden tools, cutlery, doors and window frames of aluminum and steel, steel tanks, aluminum cooking utensils, roofing sheets, agricultural implements, and carts and in the past has produced coach bodies and assembled motor vehicles.

Metalworking industries produce only 3.5 per cent of total manufacturing value added. The branch is neither expanding nor making productivity improvements at present although metalworking could be a leading industry within the manufacturing sector. It has a great number of establishments, but they are mainly small-scale and informal, and as such are not capable of acting as an industrial base.

International experience suggests that investment requirements for starting or for expanding activities in this branch are less constrained by minimum plant size and economies of scale than they are in many other branches of industry.

Because of extensive linkages with other manufacturing subsectors, investments in higher engineering technologies can have multiplier effects in terms of major improvements in productivity and quality in other industries. Provision of incentives to attract foreign investment and technology transfer are needed to establish the branch effectively.

Electrical / electronic industries

The electrical/electronic subsector is very small. In 1988, it accounted for only 1.0 per cent of manufacturing production or less than 0.1 per cent of GDP. It is also a very new activity, having started operations since 1986.

Enterprises in the electrical/electronic subsector of manufacturing are involved in production or assembly of air-conditioning units, refrigerators, commercial ovens, reconditioned electric motors, public address systems, radios, television sets, electric irons, batteries, electric wire and cable, light bulbs and lighting fixtures. Value added per employee in this subsector is very low, the poorest performer being electrical appliances. The capacity utilization rate is around 40 per cent.

Problems and constraints

All engineering industries

- Shortage of capital and high cost of credit;
- high import dependence for machinery and raw materials;
- narrow range of products;
- low capacity utilization rates.

Electrical / electronic industries

- Wide variations in quality of products depending upon the involvement of foreign principals in production. Locally designed and manufactured products suffer from poor quality inputs, inadequate design, and production know-how;

- low levels of technology: soldering, one of the key processes, is by hand: flow soldering has yet to be introduced;

- dumping of some imported products, including batteries.

Proposed actions

General

- Compilation of list of products and processes for inclusion in proposed machinery branch;

- identification of priority areas for investment promotion on the basis of detailed feasibility studies;

- audit of educational and skill levels in engineering to assess shortages and provide recommendations on training requirements;

- provision of tax incentives, grants, and depreciation allowances to encourage investment in the engineering subsector;

- identification of product and process areas to be assisted in order to attract potential partners for joint ventures, technology transfer, and reciprocal trade in both engineering and electrical/electronics industries;

- training programmes for senior management;

- expansion of engineering and electronics training courses in polytechnics and vocational schools.

5.4 NON-METALLIC MINERAL-BASED INDUSTRIES

The non-metallic subsector comprises pottery, china, and earthenware; glass and glass products; structural clay products such as bricks; cement, line and plaster; kaolin; non-metallic mineral products; and blocks and concrete products. The strategic importance of this subsector derives from its linkages with the construction industries. The non-metallic minerals subsector is not large. It accounts for about 3 per cent of manufacturing output and considerably less than 1 per cent of GDP. However, it has been growing at around 8 per cent annually in recent years. This is faster than GDP growth but slower than the growth of the manufacturing sector as a whole.

Cement is the most important branch. It accounts for around three-quarters of total non-metallic minerals output. The next largest branches of the subsector are concrete products and brick-making. Cement production is highly import-dependent. However, large deposits of alternative cement raw materials (close to natural marls) have been recently identified in Buipe. Possibilities for industrial exploitation of these deposits using high-carbonate additives available in the oyster shell deposit at Volivo need to be examined. Whereas the largest share of the subsector's value of output is cement, the greatest number of enterprises is in blockmaking and brick-making. In contrast to cement, a rich resource base in the form of clay exists for bricks and pottery production. The pottery industry is dependent on imports for its glazes.

There are large deposits of kaolin in Cape Coast which can be used as an input in many activities including building material additives and medical applications. The product is currently processed by women, using rudimentary methods. Moreover, the size of the resource base and its quality have not yet been assessed. There is potential for expansion of the local market and for exports in some products, such as pottery and terrazzo chippings and industrial ceramics. A sizeable domestic market also exists for packaging the output of the several breweries and bottlers of mineral beverages, distillers and blenders of bottled spirits, pharmaceutical companies, food manufacturers and household goods. This market is now supplied largely by importers.

Problems and constraints

- Low levels of technology, especially in brick-making;
- high import dependence;
- lack of information on resource base;
- lack of linkages between ceramics design in UST and the ceramics industry;
- poor equipment and poor maintenance of equipment in the pottery industry.

Proposed actions

- Identification of new economical deposits and new varieties of stones;
- improving design and quality of terrazzo products;
- supply of new equipment to pottery industry in the form of motors, clay burgers, potters wheels, kilns, and heating equipment;
- supply of low-cost presses to the brick-making industry;
- improvement of linkages;
- improvement of maintenance;
- technical study into the improvement of quality and safety standards in the cement industry, followed by the introduction of a quality awareness programme;

- investment opportunity study on the establishment of a cement factory for industrial exploitation of recently discovered raw materials deposits in Buipe, with possible utilization of additives from the oyster shell deposit at Volivo;

- encouragement of production of floor tiles for both the domestic and the export market;

- production of industrial ceramics should be promoted. There are a number of products, such as insulators for electrical equipment that are in demand locally and which offer scope for export. Actions already proposed by UNIDO, following a study of the subsector, should be implemented without delay.

CHAPTER 6
ENHANCING HUMAN RESOURCES FOR INDUSTRIAL DEVELOPMENT

Ghana will have to upgrade the skill levels of its population in order to take advantage of the opportunities which will present themselves in an increasingly competitive international environment. To this end, there is an urgent need for assessment of its human resource base and the problems and constraints confronting it.

Although Ghana should now take a targeted approach to industrial development, focusing on prioritized sub-sectors, there can be no certainty at this stage as to the precise products in which comparative advantages will be realized. For this reason, while training programmes also need to be targeted at the upgrading of skills in prioritized sub-sectors, the objective should be to equip men and women with the capability to adapt their skills to changing circumstances and changing technologies in an increasingly skill-intensive and knowledge-based international industrial environment.

At the same time, industrial development is not an end in itself but rather a means to raise the general level of living and of human welfare in Ghana. Thus men and women have to be considered in their dual and interdependent roles as both the human resources of industrial development and the human beneficiaries of that development process.

6.1 SOCIO-ECONOMIC GOALS AND OBJECTIVES

The socio-economic goals of government policy are consistent with the dual perspective on people as both the human resources and as the beneficiaries of industrial development. In its policy statements, the government, either explicitly or implicitly, identifies the goals of economic development as including: growth of output and employment; improvement in incomes and the general level of living of the whole population and provision of basic needs for all; a more equitable distribution of the benefits of industrial growth, with particular emphasis on relatively disadvantaged groups such as women and rural populations; and improvement of equality of opportunity for all. More recently, maintenance and even improvement of the physical environment have been included as a necessary condition for sustainable economic development.

Concern with the social consequences of the current restructuring process is evident in the government's PAMSCAD (Programme of Actions to Mitigate the Social Costs of Adjustment) and in the thrust of its 1991 submission to the Consultative Group meeting in Paris, Enhancing the Human Impact of the Adjustment Programme.

In the context of the Mission's targeted approach to industrial development, the government's general socio-economic goals can be translated into the following sector-specific objectives:

- increase in value-added in targeted sub-sectors of agro-based industries (wood-processing, food-processing, textiles garments and leather), engineering, chemicals, and non-metallic mineral based industries;
- increase in employment in the targeted sub-sectors and for targeted groups (SSIs, women, informal sector, rural households);
- reduction in unemployment and underemployment in the targeted sub-sectors and among targeted groups;
- increase in technology acquisition and diffusion in the targeted sub-sectors;
- increase in productivity in the targeted sub-sectors and among the targeted groups;

- increase in opportunities for redeployment to targeted sub-sectors for those affected by productivity improvements and divestiture of SOEs.

In the context of an environment in which comparative advantages are changing, there is a need to have people capable of identifying emerging comparative advantages and of adapting to changing circumstances. The way to ensure this capability is to equip them with the skills necessary for identifying, reacting to, exploiting, and implementing the investment and job opportunities that emerge in these changing circumstances.

6.2 PROBLEMS CONSTRAINING ACHIEVEMENT OF OBJECTIVES

Given the need for people in industry in Ghana to be flexible and adaptable to changing circumstances and to be capable of seizing the investment and job opportunities that will emerge in the increasingly competitive world market in the 1990s, the removal of constraints is a pre-condition for the realization of the objectives of industrial policy. These are:

Weaknesses in terms of human capabilities

- The existing level of entrepreneurship is generally low in both the formal and informal sectors;
- the existing level of management skills is generally inadequate in both the formal and informal sectors;
- existing levels of production skills, supervisory skills, design skills, and maintenance skills among targeted groups and in targeted sub-sectors both formal and informal are inadequate;
- existing productivity levels and existing capacity utilization rates in targeted sub-sectors are generally low;
- the existing level of worker motivation is low in many targeted sub-sectors.

Institutional problems

- The regulatory environment (labour laws, establishment regulations, taxes) that can act as a constraint on SSIs, especially in the informal sector;
- weaknesses in the policy formulation and implementation capabilities of relevant ministries;
- lack of consultation between the social partners (government, Ghana Employers Association, and the TUC) in the establishment and implementation of socio-economic goals and objectives;
- weak institutional linkages between the scientific. technological, university institutions, consultancy services, and the manufacturing sector;
- weak operational linkages between formal and informal enterprises and between small and large enterprises.

Attitudinal constraints

- Ambivalent attitudes toward entrepreneurs and profit-making;
- ambivalent attitudes toward quality assurance and quality improvement;
- lack of enthusiasm for Ghanaian products.

6.3 TRAINING: NEEDS, PROGRAMMES, AND GAPS

Needs assessment

No comprehensive assessment of overall training needs for industrial development has so far been undertaken in Ghana. A recent survey carried out by MDPI and ILO assessed the management training needs of 22 medium to large enterprises. Their management training needs were identified as: corporate planning, financial management, project management, production management, maintenance management, materials management, marketing, human resource development, and management information systems.

There has been no quantification of overall entrepreneurial, management, or production training needs. One consequence of this lack of information on training needs is that many training programmes tend to be driven from the supply side - that is, training institutes aim at getting as full a utilization as possible of their existing staff capabilities and facilities - rather than from the demand side, as would be the case if needs were known.

There is a clear need for several training and consultancy needs assessments to be undertaken - under the headings of entrepreneurship development, management, supervisory, and production skills training, for both the formal and informal sectors. There is also a need for regular and continuous monitoring of the labour market situation in order to have up-to-date information on changing needs as comparative advantages evolve and the manufacturing sector reacts to developments in rapidly changing and increasingly competitive international markets.

Existing training programmes

Entrepreneurship development programmes are provided by EMPRETEC and NBSSI. EMPRETEC trains educated people to establish and develop their own businesses in the formal sector. In this first year of its operations, it has held two training workshops attended by 53 potential or fledgling entrepreneurs. It has also undertaken 77 consulting assignments to improve the capabilities of entrepreneurs to formulate business plans and rationalize their financial and operational systems. NBSSI's entrepreneurship training programmes are geared to the small-scale sector. Over 700 small-scale, potential and fledgling entrepreneurs in light engineering, textiles, chemicals, food processing, wood products, and leather are registered with NBSSI for various services.

Although there is some management training and consultancy included in the entrepreneurship development training programmes of EMPRETEC and NBSSI, management training is provided by the Ghana Institute of Management and Public Administration (GIMPA), Management Development and Productivity Institute (MDPI), the universities, and, to a lesser extent, by the polytechnics. Consultancy services are mainly provided by GIMPA and MDPI.

GIMPA's programmes are targeted toward middle to top management levels in SOEs. Only 6 out of a total of 23 residential courses (with 541 participants) in 1990/91 were relevant to the training needs of manufacturing industry. These courses included finance and accounting, marketing, project management, computer skills, strategic planning, and a course for chief executives. From 1992 onward, GIMPA plans to re-orient its training programmes away from public administration and toward manufacturing industry, both public and private. The programmes will be responding more to demand rather than being supply-driven, as in the past, and it is expected that the biggest demand, especially in relation to consultancy services, will be in the areas of marketing, finance, and accounting.

MDPI's training and consultancy programmes are targeted toward middle to lower management levels in both the private and public sectors. About three-quarters of the courses (700 participants) are conducted at the Institute and the remainder on clients' premises (200

participants). The main topics covered are in the fields of personnel management, marketing, finance, accounting, purchasing, stock control, quality control, and production management. In its consultancy activities (which represent about 20 per cent of its output), over 60 per cent of MDPI's clients are in medium to large enterprises.

Neither GIMPA nor MDPI provides courses in productivity improvement, or in basic operational or executive skills, such as decision-making, goal setting, planning and control, and negotiating, nor do they provide any courses for supervisors or foremen. The training methodologies used in both institutes tend to be academic rather than practical and problem-solving in terms of approach.

In the more academic institutions, management programmes are provided by the School of Administration in the University of Ghana (UG), by the Department of Economics and Industrial Management in the University of Science and Technology (UST), in the three polytechnics, and in the Institute of Professional Studies. Management education in UG is geared in the main to public administration rather than private-sector or manufacturing sector management needs although it is intended to introduce courses in both entrepreneurship development and management of small and medium-sized enterprises in the near future. The courses on offer now have a concentration in the fields of finance and accounting. Management training in UST is rather similar to that in UG, except that the courses have a greater orientation toward economics.

The universities tend to produce graduates who will work in large organizations. They have little or no operational contact with entrepreneurs or managers in the manufacturing sector and their courses give very little attention to development of individual executive and operational skills, decision-making, problem solving, or the development of organizational, supervisory and interpersonal skills at the level of the management team or the organization. The universities have no courses in productivity improvement or maintenance management. The School of Engineering and the Department of Fine Arts in UST also provide courses which could make important contributions to development of the manufacturing sector in terms of design, research, training, and consultancy services. However, although the School of Engineering has now established an Industrial Liaison Office, linkages between UST and manufacturing industry are weak and there has been little attempt to date to assess industrial needs or to orient courses to such needs.

The Institute of Professional Studies prepares students for the external examinations of five professional bodies (in accountancy, corporate secretaryship, and marketing). The programmes of the polytechnics are targeted at the middle level of the professional and management structures - technicians, technologists, development engineers, and technical foremen. Their courses are geared to the needs of industry but resource constraints prevent them from responding to many of the demands for their training and consultancy services.

None of the institutions provides courses for supervisors or foremen.

Technical and vocational training is provided in a very wide range of schools and training centres as well as through in-house training and apprenticeship schemes. At least ten different systems of technical and vocational training operate in the country. The Ministry of Mobilization and Social Welfare (MMSW), the Ministry of Education (ME), the Ghana Education Service, and the National Coordinating Committee on Vocational Education and training (NACVET) are all involved through centres and institutes under their control, as are GRATIS, and the ITTUs. There is a great deal of duplication and confusion about quality standards and certification levels. NACVET is currently addressing these problems and developing a national technical and vocational training strategy.

Employment creation in the formal sector over the next few years will fall far short of the numbers seeking jobs. Many people will have to find employment in the informal sector. At present, five government institutions - ICCES, CSIR, IRI, GRATIS/ITTU, and DRHCI - provide training and consultancy services for the informal sector. ICCES provides vocational level training and consultancy services to producers with little formal schooling in 47 integrated community centres which it helped to establish. Although it aims to increase the number of these centres to 220 (two in each of 110 communities) within the next few years, there will still be a huge

unsatisfied demand for training and consultancy when this is done. CSIR/IRI trains informal producers in both rural and urban areas. It has conducted one-week demonstration and training workshops for producers of agricultural machinery and producers of ceramics and plans others in soap-making, stove production, bio-gas production, insulators, metal fabrication, mould-forging, and safety in machine shops.

GRATIS/ITTU provides vocational and business training to engineering apprentices and technicians. DRHCI provides advisory services on appropriate technology in four sub-sector areas, palm oil processing, pottery, wood carving, and concrete tile roofing.

6.4 PROPOSED ACTIONS

- Carrying out an analytical survey of prevailing and expected critical skills gaps in the industrial sector and conducting training needs assessment studies in various areas including entrepreneurship development, management, supervision, technical and vocational training, and consultancy services;

- strengthening the capability of MIST and MMSW to fulfil their promotional roles through training programmes in economic and social analysis, monitoring, and evaluation;

- instituting a system of tripartite consultation and collaboration between the social partners for the formulation and implementation of industrial policy, particularly with respect to specification of socio-economic goals, training, operational linkages, and improvement in productivity and competitiveness;

- strengthening the statistical information service with respect to relevance and timeliness by instituting consultation between producers and users of statistics regarding definitions and data needs;

- modification of ministries' regulatory policies, tax policies, labour laws, in favour of relatively disadvantaged groups such as women and informal sector entrepreneurs;

- re-orientation of government purchasing practices in favour of producers in the informal sector;

- development of sustainable operational linkages between formal and informal enterprises and between large and small enterprises by establishment of sub-contracting exchanges;

- formation of producer associations in the informal sector to improve provision of services to their members and to represent them in negotiations with government and formal sector enterprises;

- strengthen the capabilities of institutions such as GIMPA, MDPI, EMPRETEC, NBSSI, and the universities and polytechnics, which provide training and consultancy services in entrepreneurial development and management training through re-orientation of courses, revision of training methodologies and training materials, retraining of teaching staff, and hiring of new staff;

- institutionalizing linkages between industry and the universities and polytechnics;

- strengthening the capabilities of institutions such as NACVET/NVTI, and polytechnics that provide training and consultancy services in the technical and vocational fields to the formal sector;

- strengthening the capabilities of institutions such as ICCES, CSIR/IRI, GRATIS/ITTU, and DRHCI that provide training and consultancy services to entrepreneurs and workers in the informal sector;

- incorporate training programmes for supervisors, foremen, and technical instructors into courses provided by NVTI.

CHAPTER 7
INTEGRATION OF WOMEN IN INDUSTRIAL DEVELOPMENT

Women are an integral part of Ghana's human resource base for industrial development and its target group. The preceding chapters of the report have already revealed major constraints to the industrial development of the manufacturing sector and its key subsectors, emphasizing specific needs of women and suggesting corresponding actions.

However, women in Ghana face many specific obstacles and constraints affecting their equal integration into manufacturing industry. This chapter, therefore, aims at the assessment of women-specific needs and identification of actions to enhance women's participation in industrial activities.

7.1 PARTICIPATION OF WOMEN IN INDUSTRY

Women's role in Ghana's economy

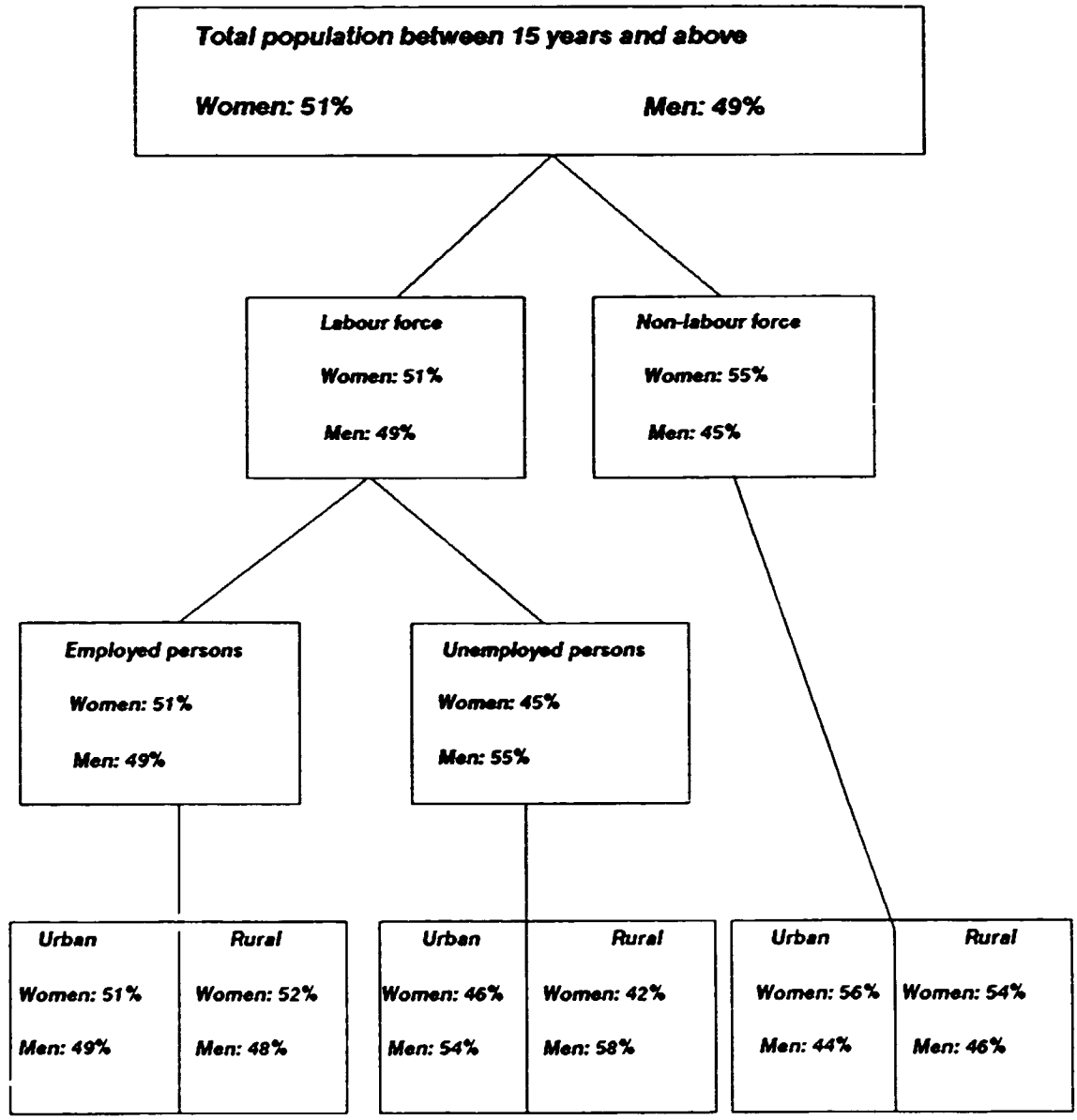
Women make up 51 per cent of Ghana's total population. Their contribution to Ghana's gross domestic product is not easy to determine. However, their participation in the overall development of the economy can be measured by the number of women engaged in the various economic activities in the country. Figure 7.1 shows that women make up 51 per cent of Ghana's labour force and, according to the Ghana Living Standards Survey Report, for every 100 economically active men, there are 109 economically active women. They participate in all economic activities, though they are predominantly present in agriculture, and in wholesale and retail trade, as well as restaurants and hotels, (Figure 7.2).

Women's participation in manufacturing

Women make up about 24 per cent of persons engaged in manufacturing activities. The pattern of their participation in manufacturing, however, has not changed significantly over time. Women work mostly in food processing activities, spinning, weaving, dressmaking, and pottery activities. Their participation is high in activities such as fish preservation, manufacture of bakery products, oil extraction, and manufacture of wearing apparel.

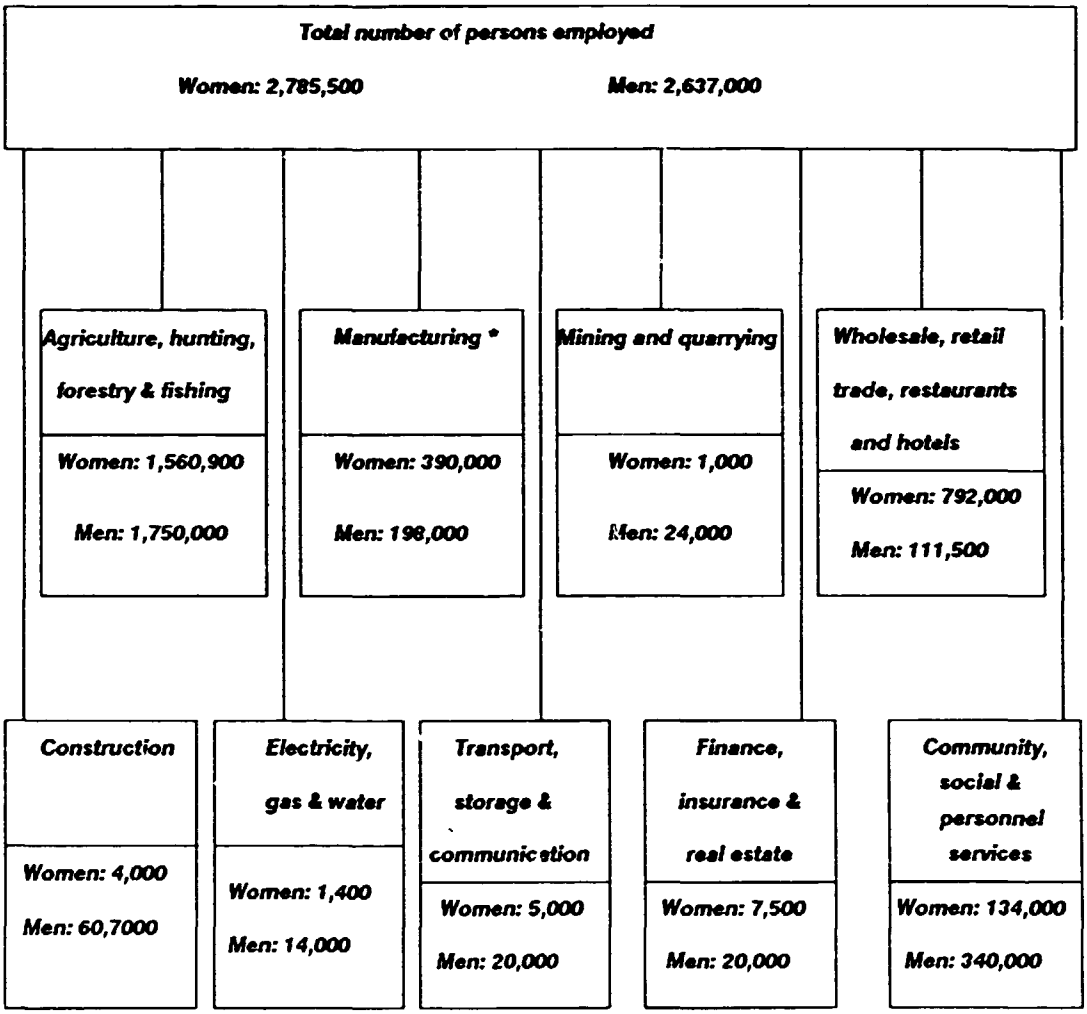
In these industries, the female/male participation ratio is relatively high. In fish preservation, the ratio is 1:3; women's activity in the industry involves fish smoking on an individual, cooperative, or group basis while men are employed in large cold stores. In the oil extraction industry, there are almost as many women as men. However, most of the women in the industry are individual or cooperative producers while the men are mostly employed in large oil mills. Women are also actively engaged in brewing of the local malt beverage (pito). Their brewing activities are concentrated in the Northern Region where the required raw material is abundantly available. Men in the industry, in contrast, are employed in the large breweries. Women make up over 48 per cent of persons engaged in food processing (excluding women who prepare food for immediate consumption in restaurants). Although women are actively engaged in the planting, harvesting, and drying of cocoa in the country, they constitute only 13 per cent of persons working in the cocoa processing factories.

Figure 7.1: Total population, by gender, age group, employment and status, Ghana, 1984



Source: 1984 Ghana Population Census.

Figure 7.2: Persons employed, by gender, age group, (between 15 years and above) and economic activity, Ghana, 1984



Source: 1984 Ghana Population Census.

** Figures include (a) large numbers of persons who prepare local cooked food on a restaurant basis as according to ISIC criteria should be classified under wholesale, retail trade, restaurant and hotels, and (b) those engaged in repair services who should be classified under community, social and personnel services.*

The wood and wood products industry provides employment for about 24 per cent of the manufacturing workforce. Women make up only about 5 per cent of this total and are mainly clerical workers, not operatives. Some women gather at sawmills and use wood waste to burn charcoal but this activity is uncertain as they are subject to expulsion by sawmill owners. In the printing and drug industries, women make up about 26 and 37 per cent respectively of the workforce but they are mostly unskilled workers. The clothing industry is a major source of employment for women with a female/male participation ratio of 3:1. Many girls, after completing their first cycle education (or even after dropping out) are sent into dressmaking apprenticeship. The polytechnics also offer dressmaking courses, as do many other vocational institutions.

Earnings are relatively low in the industries which have high female/male participation ratios. For example, the average worker in gold-mining (which is a predominantly male domain) earned C244,300 in 1987, while the average worker in salt-mining (dominated by women) earned only C35,300. Earnings in most of the food processing industries are below annual mean earnings. Even within the same industry group, earnings in areas with higher concentrations of women are lower compared with areas where males are concentrated. For example, in the textile and wearing apparel division, men tend to be engaged in textile factories where average earnings in 1987 were over 50 per cent higher than earnings in the clothing industry. Similarly, in the non-metallic mineral products sub-sector, women predominate in the pottery industry where average earnings in 1987 were as low as C67,300, compared with average earnings of C251,800 in male-dominated cement production.

7.2 PROBLEMS AND CONSTRAINTS

Education and training

To a large extent, the average Ghanaian woman is disadvantaged in the labour market compared with the average man. There are very few women professionals and managers in industry and most of the skilled women in manufacturing are bakers and dressmakers. Figure 7.3 shows that only 2 per cent of the manufacturing workforce is made up of women professionals and managers. The 2 per cent includes owners of bakery and dressmaking establishments. Another 2 per cent are in the clerical grade; the rest are mainly bakers, dressmakers and their apprentices. In principle, women and men have equal employment opportunities in Ghana. In practice, however, women are at a serious disadvantage due to lack of education and training. Getting a job in manufacturing requires some basic qualification or training which most women do not have. School enrolment data show the number of girls to be about 45 per cent of total primary school enrolment. Drop-out rates for girls get steeper at the higher levels of education. At the family level, when parents cannot afford to support all the children in the family, it is always the girls who drop out of school. It is also the girls who go out and engage in retail trade.

Social factors

Social factors limit women's entry into manufacturing. There are many jobs, such as welding and casting of aluminium pots in industry, which can be performed by both women and men but which are traditionally considered men's domain. The polytechnics admission records show girls mainly take dressmaking, catering, and secretarial studies. There is a limit to the number of dressmakers and caterers the economy can absorb. These are courses which do not easily encourage integration into industry. Courses for boys include auto-mechanics, electrical engineering, furniture-making, and so on, enabling them to move more easily into industry.

Legally, women and men have equal rights in Ghana; equal rights to vote, equal rights to job positions, equal rights to inheritance and so on. Women may, therefore, legally take up any economic activity for which they have the required qualifications. However, religious beliefs and some tribal inhibitions have affected women's education in Ghana and their participation in

economic activities. For example, in areas where the Muslim influence is very strong, women are still not allowed to work outside the home and girls are sent to Arabic schools instead of to the normal primary schools.

Economic and social pressures make it necessary for the average woman in Ghana to generate some income and contribute in some way to the family's income. Sometimes she is the main support for the children. Since most women do not have the requisite training and qualifications to compete effectively in the labour market for the limited job openings, a large proportion of women in Ghana are self-employed in the informal sector. The Ghana Living Standards Survey shows that, out of the sample surveyed, male employees made up around 27 per cent of the labour force while the self-employed accounted for 71 per cent. On the other hand, 91 per cent of the female labour force was recorded as self-employed while less than 8 per cent are employees. In contrast to females, a relatively high percentage of males were found in the organised sector of the economy.

Financial constraints

Not all the women in self-employment are there by choice. Choices, in terms of job opportunities, are limited. A certain minimum amount of capital is needed to start any small-scale business. The main sources of capital are personal or family savings. A study showed that 94 percent of women traders interviewed had not obtained credit facilities from any financial institution. To enter into manufacturing requires even more capital than entry into retail trade. Many women who might do well in manufacturing are in petty trading because of lack of start-up capital. Those already in manufacturing could increase production levels if they had improved access to credit. Moreover, they frequently encounter discrimination when applying for credit through the formal banking sector.

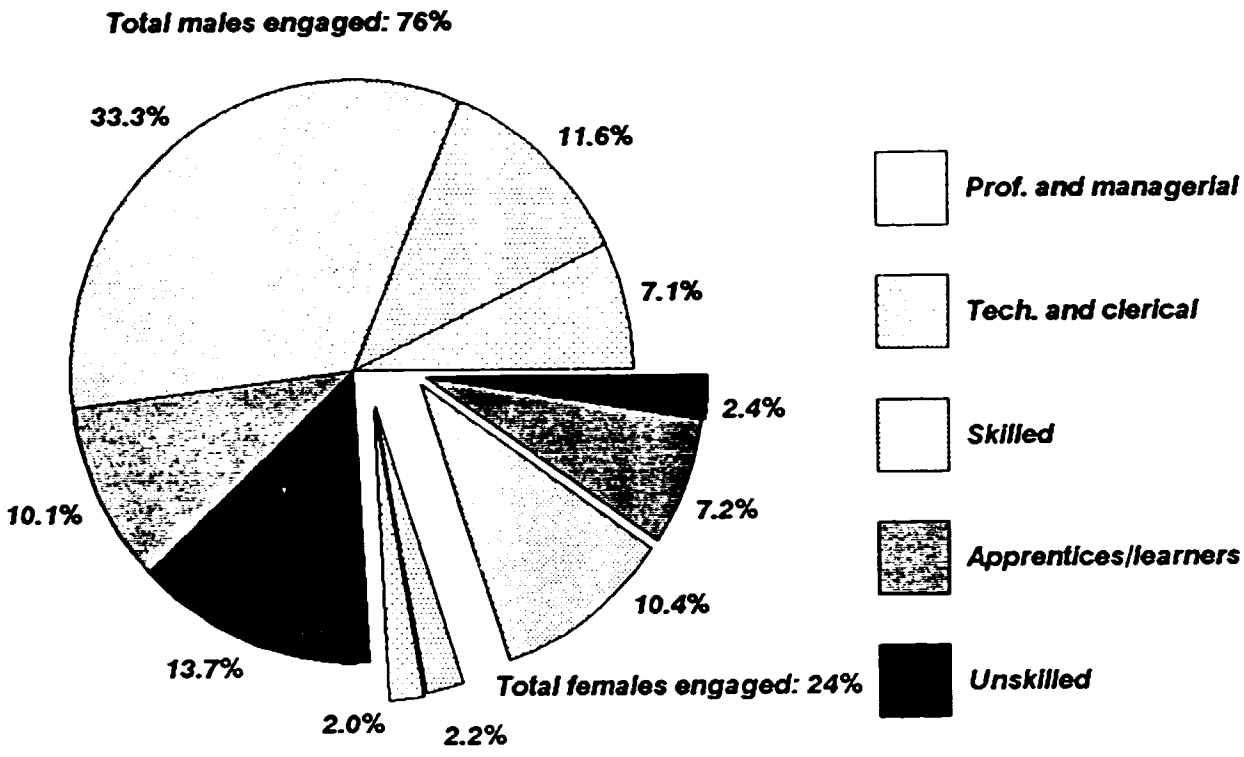
Locational harassment

Individual producers quite often face locational harassment from municipal authorities who drive them into hiding or make them discontinue their activities. For example, a census of industrial establishments was conducted in November 1987. In November 1988, when the follow-up survey was carried out, a large number of the small-scale establishments could not be located. Some were traced to locations different from addresses given previously. Between the two dates, some cities and municipalities had traffic and sanitation programmes which had driven many producers (and traders) into hiding. Most of those affected were women. Official policies on location with respect to activities dominated by women tend to keep them in "buy and sell" instead of "produce and sell" business. When Tema or Kumasi mechanics face municipal harassment, programmes are set in place to resettle them. There are recognised industrial locations for small-scale male producers, such as "Kuma : Magazine" for mechanics, and "Kumasi Anloga" for furniture makers. There is no such arrangement for women in oil extraction, gari-making and so on. These groups of women producers are generally squatters who are subject to harassment and expulsion at any time.

Other constraints

There are other factors which affect nor just women alone but hinder industrial development in general. For example, many industries have in the last few years cut down production or closed down factories because of low demand for products. Operations of some regulatory institutions also discourage producers. In introducing new products, producers sometimes encounter administrative difficulties from institutions such as the Ghana Standards Board and this tends to delay commencement of production.

Figure 7.3: Persons engaged in manufacturing, by gender and level of skill, Ghana, 1987



Source: 1987 Ghana Industrial Census.

7.3 PROSPECTS FOR WOMEN'S INTEGRATION INTO MANUFACTURING

Target groups

As already noted, women constitute the greater proportion of both Ghana's population and its labour force. A very large percentage of the female working population is in the informal sector, working under difficult conditions. They represent only 24 percent of the industrial workforce and are in the poorly-rewarded areas of manufacturing. This is so because a large proportion of them are uneducated and mostly live in the rural areas. A significant proportion, with little or no education or no form of training, work in the cities and urban centres as young market women or street vendors. Another group has some skills. However, there appears to be an over-supply of certain skills in relation to demand for them in manufacturing. It is only by launching targeted training programmes and a policy of directing women into new priority areas that opportunities will increase for women to be integrated into Ghana's industrial development.

Training and re-direction

Some communities like the Chorkor smokers in Mafi-Kumasi have been assisted on an experimental basis to improve their methods of production through training and the provision of simple labour-saving devices. This has helped such communities to raise productivity and increase their earnings. The areas so far assisted include traditional food processing, pottery, and spinning and weaving activities. Extension of these training programmes to more communities and the introduction of new programmes for further upgrading of skills and marketing of products would facilitate the integration of rural women into the large agro-based industrial sector.

Young urban women who are unemployed or already in retail trading should also be targeted for training and skills upgrading and absorption into new activities. The GRATIS project has a women's component and has started training young women in new areas such as welding, and casting of aluminium pots.

The large number of secondary school leavers who cannot enter tertiary institutions is another target group for redirection into specific areas to prevent them drifting into retailing, catering, and so on. An entrepreneur-development workshop, organised by the National Board for Small-Scale Industries (NBSSI) in 1990 for 28 young women included two young women who had first cycle education, two with university education, and 24 with secondary school education, a potential group for skills development.

Counselling programmes

To prevent the polytechnics over-producing dressmakers and caterers, there is a need for girls to be counselled and encouraged to go into new areas that are traditionally not considered. In addition, the tertiary institutions need to introduce new courses that are more relevant to the needs of the industrial sector. When such courses are introduced, girls should be exposed to them through counselling. For example, the University of Science and Technology has recently introduced a course in book production which is a prospective area for integration into the printing and publishing industry. A number of young women are taking this course as well as others in the Faculty of Arts. What is now needed is for these departments to be more closely integrated with industry and the business world.

7.4 POLICIES AND INSTITUTIONAL FRAMEWORK

The National Council on Women and Development

The National Council on Women and Development (NCWD) is responsible for policy formulation on women's issues. The Council was set up in 1975 to ensure that the objectives of the International Women's Year and the UN Decade for Women were achieved. Its functions include advising the Government on all matters relating to women. It serves as the official body to ensure full integration of women into national development.

There are also many non-governmental organizations (NGOs) working to improve the socio-economic life of women in Ghana. All of them in principle have to work under the umbrella of the NCWD. It is NCWD's responsibility to produce a policy framework which would integrate women's development into the broader national development programme and which would serve as a guideline for the operations of the various NGOs. The Council has had difficulties in fulfilling this mandate. It has not defined policies as yet and this has diverted the Council's attention toward projects and activities which could effectively be performed by other women's groups.

For example, the 31st December Women's Movement NGO has, in the last few years, mobilized women in urban and rural communities into effective groups. These groups engage in activities which are geared toward improving their members' productivity and earnings. The Movement has succeeded in making many rural communities aware of the need to help themselves. This has tended to call into question the very existence of the NCWD. It is imperative that the NCWD return to its mandate. It has to become the focal policy formulation organization on women's affairs and leave grassroots projects to the NGOs.

Women's World Banking

Women's World Banking Ghana (WWBG) Ltd. was established in 1983 as an affiliate of Women's World Banking International. It is a non-profit financial organization which provides women with access to credit and technical assistance. The Bank arranges and guarantees credit for small-scale business women who normally cannot gain access to credit because of lack of collateral. The Bank also arranges loans for groups of women and has a development fund which caters for women's groups in rural areas. The Bank has had applications from many individuals and women's groups but so far has been able to service only a few. Of the 27 loans arranged, 19 were for individuals and 8 for groups of women. One of the groups had as many as 173 women members. There are 253 applications pending from one region alone. The WWBG Ltd. needs to raise 25 percent of its back-up capital and this seriously limits its services. Given that access to credit is one of the major constraints affecting self-employed women in industry, WWBG and other similar financial facilities that might be established is a key programme requiring assistance at this time.

Other women's organizations

There are other women's organizations that are working for the advancement of women. For example, the Ghana Business and Professional Women's Association (GBPWA) and Sustainable End of Hunger Foundation (SEHUF) encourage women to set up their own businesses and works closely with the WWBG to arrange credit facilities for individuals and women's groups. Some of them are members of the Association of Ghana Industries. A woman was at one time the president of the AGI.

GRATIS

Ghana Regional Appropriate Technology Industrial Service, has a female component which seeks to enhance the economic conditions of women by creating new patterns of employment through training and provision of appropriate technology. Its programmes for women include development of food supplements, and training of women to use wooden broadlooms and spinning wheels. It has also, on an experimental basis, trained young women in welding and operation of machine tools, a prospective job area for women. Extension of its programmes would facilitate vocational training for more women.

NBSSI

In its entrepreneurial development programme, the NBSSI provides systematic training and professional counselling for potential entrepreneurs and motivates them to set up small-scale businesses. Records from five workshops organised for 150 participants showed only 18 per cent of the participants to be women. However, with the assistance of the NCWD, the Board was able to run a workshop for 28 women at a time. The NCWD could co-ordinate the activities of the many women's groups and assist the Board in organizing more workshops for women in industry.

7.5 PROPOSED ACTIONS

Because of their determination and adaptability the women of Ghana have potential to make a significant contribution to the country's industrial development. Despite social, educational and other constraints, their contribution in the informal sector of manufacturing is increasing. There are women in Ghana, who started their businesses on a "backyard basis" but with hard work and encouragement from relatives have developed them into viable manufacturing establishments. Thus, a systematic promotion of women's activities and upgrading of their methods of production would further increase their participation in both the informal and formal sectors of manufacturing.

Policies and strategies

The national constitution, presently under consideration, strongly protects the rights of women. The NCWD as the umbrella women's organization needs to formulate the policy framework and develop strategies that would ensure women's interests are represented in all national plans. The structure of the Council needs to be reviewed to enable it to coordinate the activities of all women's organizations, and thus avoid undue overlapping of their various operations.

The Council should also provide the conditions and environment that would facilitate the operations of the various organizations. In addressing some of the problems that women face, the Council had, in the past, commissioned research on specific topics. The Council should not be involved in implementing recommendations itself but should provide facilities and commission other organizations to implement the identified projects.

Training programmes

In addition to the polytechnics, there are many private and religious organizations which run vocational training for girls. Almost all of them train girls in catering, dressmaking, and housekeeping. The NCWD could set up a committee to review and examine the curricula of vocational schools and the training programmes of institutions such as GRATIS and NBSSI to identify new training needs and programmes.

Many women group themselves in a single location and engage in individual economic activities such as charcoal burning, oil extraction, preparation of kaolin, and others. As a result, these women do not belong to categories that can benefit from training programmes organized by the NBSSI and other institutions. It is recommended that a mobile training programme be established which could work in conjunction with the Non-Formal Education Unit to train women where they are located and equip them with basic machinery.

Advisory centres

Some Ghanaian women are running prosperous commercial enterprises and can mobilise resources to enter into production. It is recommended that a business advisory centre be established that would advise such women on viable areas of investment and motivate them to go into manufacturing.

Counselling centres

The NCWD should liaise with schools and universities to set up counselling centres that would advise girls on the selection of their subjects and guide them in the choice of careers. The centres could run seminars and workshops which would expose girls to new and prospective areas in industry.

Finance and location

The NCWD needs to help WWBG solve its problem of back-up capital to enable the Bank expand its services. The Bank's mutual assistance "susu" programme provides a framework for integrating formal banking with traditional informal methods of saving. Many women are involved in the informal method of saving whereby two or more women decide to contribute fixed amounts on a regular basis to provide themselves with capital and take it in turn to borrow from the common pool. The NCWD should commission studies to identify effective ways of organizing susu groups and ensuring their operations benefit more members. Sites could also be acquired and provided with basic infrastructure for the many women in small-scale industries currently subject to harassment who could benefit from such facilities.

CHAPTER 8
FINDINGS AND RECOMMENDATIONS: PROPOSED FRAMEWORK FOR TECHNICAL ASSISTANCE FOR INDUSTRIAL DEVELOPMENT

The ultimate objective of the Mission was to outline industry related areas requiring technical assistance for the next UNDP Country Programme Cycle, 1992-1996, focusing on critical industrial development needs. This chapter, therefore, sets the findings and recommendations of the previous sections into a framework for technical assistance. In this context, the mission has identified priority technical assistance requirements and addressed them in terms of corresponding programmes.

In order to synchronize the proposed areas for technical assistance with the priorities of the Government and multilateral and bilateral aid agencies, it is necessary to review their past, on-going and pipeline programmes and priorities.

8.1 OVERVIEW OF TECHNICAL CO-OPERATION PRIORITIES AND PROGRAMMES

The Government of Ghana views technical cooperation (TC) as an important supplement to its domestic capacity for restructuring the economy to achieve sustainable growth. A number of priority areas for TC have been identified by the government in consultation with multilateral and bilateral donors in order to guide the delivery of technical assistance to the economy. These priority areas are:

Strengthening economic management

- Because the economic crisis of the 1970s and 1980s led to attrition in the public sector, the management of national economic recovery and development has been seriously impaired by institutional weaknesses. Thus, there is significant emphasis on directing technical assistance toward the strengthening of national institutions for economic management.

Human resources development

- The Government would prefer TA to be directed toward helping national institutions to improve and expand their teaching capabilities by providing them with additional expertise and equipment. Within this overall heading, the government's preference is for TC to be directed toward institutions concerned with economic and financial management at all levels - macro-economic, sectoral and individual enterprises - and to the technical skills required for production, such as agronomy, agro-industry, chemistry and engineering, as well as marketing skills.

Divestiture and management of public enterprises

- Government has committed itself to divesting out of directly productive activities in favour of concentration on infrastructural development and the creation of a macro-economic environment conducive to investment by the private sector and the overall development of the private sector. Efforts are also envisaged to ensure efficiency in the remaining state-owned enterprises. Because of weaknesses in terms of capabilities relating to divestiture and privatization as well as rehabilitation of selected enterprises, the Government wishes to attract increased amounts of relevant TC into those institutions and activities that can strengthen these capabilities.

Strengthening national consultancy capacity

Ghana is relatively well-endowed with institutions and personnel who could provide consultancy services. However, in most cases the institutions have not fully utilized their consultancy potential. Further institution-building is required under this heading. Government places priority on increased utilization of national consultants on TC projects and programmes. Realization of this objective would be expedited by a strengthening of the consultancy capabilities of teaching and research institutions in the country. These priorities are also being promoted by policy measures to ensure effective programming and management of TC. The UNDP-sponsored NaTCAP exercise is currently providing support for the establishment of the required institutional framework and operational procedures for effective TC management.

Aid flows in 1989

According to UNDP data, total inflows of official development assistance (ODA), in 1989 amounted to US $461 million. Of this total, 85 per cent was disbursed in the economic sectors. Almost 50 per cent of total aid was directed toward the strengthening of economic management (macro-economic and monetary policy and planning) for the country's economic recovery and structural adjustment programmes. The other economic areas assisted were agriculture, forestry and fisheries (10.6 per cent of total aid), energy (8 per cent), transport (7.5 per cent), and development administration (4.6 per cent). Human resources development received US $19.7 million, or 4.3 per cent of total aid.

Technical co-operation in 1989

Of the total ODA inflows of US$ 461 million, technical assistance (TA) accounted for nearly US$ 104 million or 23 per cent. $37.03 million (35 per cent) was contributed by multilateral donors (of which $35.19 million (33.5 per cent) by the UN system), $63.92 million (60.81 per cent) was from bilateral donors and the balance of $4.15 million (3.95 per cent) from non-governmental bilateral organizations. Among the major multilateral donors of TC during 1989 were IDA, which disbursed $23.6 million, UNDP ($9.1) and the EC ($1.5 million). Significant donors of bilateral TA during the year were the UK's ODA ($14.6 million), GTZ ($11.6 million), CIDA ($8.7 million), SIDA ($7.4 million), and USAID ($7.3 million).

The sectoral distribution of TC is shown in Table 8.1

Table 8.1: Sectoral distribution of technical co-operation to Ghana in 1989 (US $ million and percentage)

Sector	US $ million	Per cent of total TA
Agriculture, forestry, fisheries	30.49	29.0
Human resource development	19.74	19.0
Transport	10.91	10.0
Social development	8.97	9.0
Health	8.56	8.0
Industry	8.19	8.0
Development administration	6.92	7.0
Energy	6.67	7.0
Area development	3.53	3.0
Others	-	-
Total TC	103.98	100.0

Source: UNDP, Accra.

Another way of analyzing the ODA inflows is by client beneficiaries. The major recipients of free-standing TC were the Ministry of Education (US $13.3 million), CSIR (US $7.6 million), and the Ministry of Health (US $4.3 million). Recipients of large amounts of investment-related TA included the Ministry of Roads and Highways (US $8.7 million), Ministry of Agriculture *US $5.5 million), Ministry of Transport and Communications (US $1.6 million), and Accra Metropolitan Authority (US $1.2 million).

The distribution of total aid (including TC) by major donors in the country in 1989 is shown in Table 8.2.

Table 8.2: Sectoral coverage of total aid by selected donors

Donors	Major sectors and share of total annual disbursement
IBRD	Economic Management (53.5%), Transport (15.7%), Energy (10.9%)
UNDP	Development Administration (35.9%), Agriculture (26.5%), Health (8.8%), Transport (6.1 %), Area Development (6.0%)
UNPFA	Health (44.3%), Human Resources Development (22.9%), Agriculture (18.4%)
EC	Development Administration (31.5%), Agriculture (25.4%), Industry (22.6%), Transport (19.8%)
CIDA	Development Administration (32.6%), Humanitarian Aid (19.3%), Human Resources Development (15.9%), Agriculture (13.4%), Area Development (6.8%)
France	Economic Management (53.6%), Industry (20.6%), Human Resources Development (15.1%)

The data show that total ODA, as well as TC flows, are consistent with the Government's present development priorities, being directed in the main toward agriculture and human resource development, health, administration and management, and infrastructure. The revealed preferences of the donors, both multilateral and bilateral, are also directed toward these areas.

The industrial sector receives only a small proportion of both total ODA and TC. Of course, industry - like agriculture - receives indirect assistance through the ODA and TC that flows to infrastructure, energy, transport, and human resource development. However, the data are not now presented in such a way as to allow estimation of what that contribution might be to industrial development.

8.2 PROPOSED AREAS FOR TECHNICAL ASSISTANCE

This UNIDO/ILO Mission has taken place at a difficult transition period in Ghana's economic reform programme and, particularly in its structural adjustment programme. In order to achieve the long-term goals set for the industrial sector, the policy efforts of the Government need to be supported by external assistance in areas where the country does not have the requisite local resources, skills and expertise.

In this context, the following major issues should be accentuated in the Fifth UNDP Country Programme 1992-1996:

- according priority to the manufacturing sector and recognizing its key role in economic development;

- supporting the private sector by creating an enabling environment for its further development and, in particular, by enhancing investment and export opportunities.

The Mission has developed a framework for technical assistance to industry by classifying and grouping proposed actions in all preceding chapters into focal areas or clusters of programmes.

These closely interlinked areas are aimed at the solution of major problems such as poverty eradication and grass-roots participation in development, environmental sustainability, increased utilization of domestic resources, development of human potential, expansion of the industrial base, and integration of women into industry.

Upon approval of focal areas and programme elements by the Government, it is recommended that the following activities are undertaken:

- identification of specific needs within each area and/or programme, as well as resource requirements in terms of human, material, and financial resources;

- design of a work programme to be carried out within an established time frame;

- formulation of project documents and identification of sources of funds;

- identification of donors interested in contributing to the implementation of programmes/projects and assessment of the size of their contributions;

- co-ordination of activities at the national level with those of various bilateral and multilateral agencies in order to ensure efficient use of all assistance attracted.

It can also be recommended to support the above-mentioned activities by specific action programmes. These could be developed on the basis of UNIDO's "Strategic Management Approach" (Annex 5).

The key areas/programmes presented below are complementary and cross-sectoral thereby ensuring an integrated programme approach which offers the maximum multiplier effect for technical assistance on the industrial development process. Each programme subdivides into inter-related sub-programmes. Each of these sub-programmes contributes in a consistent way to the attainment of the major objective of the programme. Taking into account the relevant importance of individual programmes/sub-programmes to industrial development, the mission has classified them according to short or medium-term priority.

I. REHABILITATION, DIVERSIFICATION AND UPGRADING OF INDUSTRIAL STRUCTURES

Problems to be addressed

Many enterprises in Ghana, in the public and private sectors, are performing inefficiently at low levels of installed capacity. They are highly dependent on imports, have small domestic markets, little or no exports, worn out and obsolete equipment, and weak management (for detail see Chapters 4 and 5).

Under-utilization of industrial production capacities is one of the major factors hindering industrial development in Ghana. Greater utilization of installed capacity and improved productivity, therefore, would be the most efficient means of increasing domestic value added and strengthening backward and forward linkages.

Objectives

To improve the performance of industry, particularly agro-based industry in Ghana, by identifying the major causes for and features of the deficiency in this subsector and proposing remedial actions at the plant, subsector, sector, and national level.

Programme/Sub-programme	Priority	
	short term	medium term
1. Rehabilitation of manufacturing industries	■	
(i) Identification of rehabilitation needs and resource requirements as well as direct on-the-spot assistance to selected enterprises;	■	
(ii) Establishment of rehabilitation advisory services agency (RASA);		■
(iii) Promotion and implementation of industrial rehabilitation projects identified by sub-programmes (i).		■
2. Diversification of food-processing industry		■
(i) Exploration of possibilities to establish and/or strengthen branches of the food-processing industry such as:		■
a) palm oil, cottonseed oil and coconut oil processing;		
b) cassava processing plant to produce starch, glucose and dextrins;		
c) cereals processing (maize, sorghum, millet) into composite flours for bakeries and animal feed industries;		

	d) coconuts and cashew nut processing;		
	e) expansion of vegetables and fruits processing to mitigate problems of seasonality and reduce losses.		
3.	**Integrated development of fisheries industrial system**	■	
4.	**Diversification of chemical industries**	■	
(i)	Establishment of a pilot plant for herbal medicines and allied products;	■	
(ii)	Upgrading technology of salt winning through increased purification;	■	
(iii)	Establishment of caustic soda production;		■
(iv)	Expansion of existing oils and fats processing facilities to produce oleochemicals from palm oil and other oils and fats surpluses (see programme 3, sub-programme (i) a);		■
(v)	Expansion of the domestic resource base (building materials) for the construction industry, including:		■
	a) rehabilitation of the pottery industry; b) support to the brick-making industry; c) quality control programme in the cement industry; d) possibilities for the establishment of a new cement factory on the basis of raw material deposits in Buipe with possible utilization of additive from the oyster shell deposit at Volivo; e) promotion of industrial ceramics production; f) exploration of possibilities for floor and roof tiles production for both the domestic and export markets.		
5.	**Establishment of engineering subsector**		■
(i)	Identification of requirements for the establishment of a machinery sector (see Section 4.3 and Annex 3);		■
(ii)	Identification of requirements for the development of electrical/electronic industries to attract external assistance;		■
(iii)	Formulation of special training programme for engineering industries.		■

II. PRIVATE SECTOR DEVELOPMENT AND INVESTMENT PROMOTION

Problems to be addressed

The private sector has been assigned the lead role in promoting growth in the manufacturing sector. Moreover, the Government has begun divesting itself of manufacturing enterprises and privatizing some of them. Investment is still much lower than the levels needed to maintain the rates of growth experienced since the ERP was launched or to absorb the expanding labour force at higher levels of productivity. As capacity utilization rates rise, substantial increases in new investment will be needed to sustain growth.

The investment climate needs further improvement in order to attract and hold the confidence of the private sector, both domestic and foreign. Problems and constraints include: the regulatory framework; lack of co-ordination between government ministries and agencies and the private sector; weaknesses in the public and private institutions associated with investment promotion and development of the private sector; the slow pace of divestiture of the SOEs; and continued reluctance of the banks to lend to private sector manufacturers.

Since most private entrepreneurs in Ghana operate small-scale businesses, it is imperative to provide support and assistance to SSIs and the informal sector.

SSIs tend to experience many of the same kinds of problems and constraints as do the larger enterprises in the manufacturing sector - but usually with greater intensity. Shortage of credit and its high cost impose very severe constraints on SSIs, especially the micros, since banks are particularly reluctant to advance loans without collateral. Very often, there are special problems for women in this regard. Translating concepts into bankable projects is very difficult without the skills needed to prepare basic feasibility studies for the banks.

Objectives

To improve the investment climate, and strengthen public and private organizations associated with the promotion of private sector investment. To speed up the process of divestiture and privatization, improve efficiency in SOEs, and reduce the drain on the public finances from SOE losses. To encourage wide share ownership and promote growth of capital markets. To promote skill and entrepreneurship development through training of SSIs and informal sector operators, especially women, and to improve support services.

III. ENHANCING HUMAN RESOURCES IN INDUSTRIAL DEVELOPMENT

Problems to be addressed

The draft of the Government's industrial policy statement emphasizes the importance of human resources as a key element in industrial development in Ghana. Chapter 6 of this report particularly identified, among numerous problems constraining enhancement of human potential, the low level of managerial and entrepreneurial skills as well as inadequate production, design, and maintenance skills of the labour force in the manufacturing industry.

Special attention needs to be paid to problems specifically related to integration of women in industry since women in Ghana are disadvantaged in terms of access to education, income level, access to credit and so on.

Programme/Subprogramme		Priority short term	Priority medium term
1.	**Improvement of investment climate through strengthening the project appraisal and monitoring capabilities of the banks**	■	
2.	**Identification, formulation and promotion of investment projects**	■	
(i)	Identification of industrial investment projects;	■	
(ii)	Organization of investment promotion forum;	■	
(iii)	Strengthening the capabilities of GIC and AGI to appraise and monitor implementation.	■	
3.	**Establishment of a business advisory and information service for the private sector**		■
4.	**Exploration of possibilities to set up an ODA- supported fund for private sector industrial development**		■
5.	**Assistance to SSIs and informal sector**	■	
(i)	Improvement of support services;	■	
(ii)	Identification of training requirements in SSIs and the informal sector and formulation of training programmes.	■	

Objectives

To improve industrial skills, promote entrepreneurship development and upgrade managerial and technical capabilities, in order to contribute to the reduction of unemployment and underemployment, an increase in incomes, as well as promote increased participation of women in industry.

Programme/Sub-programme		Priority: short term	Priority: medium term
1.	**Strengthening the capabilities of institutions providing training and consultancy services in the following field:**	■	
(i)	Assessment of critical skills and gaps for industry;	■	
(ii)	Entrepreneurship and management (GIMPA, MDPI, EMPRETEC, NBSSI);	■	
(iii)	Technical and vocational training to the formal sector (NACVET/NVTI, Polytechnics);		■
(iv)	Research, science and technology (UST's School of Engineering, CSIR and IRI);	■	
(v)	Education (universities and polytechnics).		■
2.	**Generation of employment and the reduction of unemployment and underemployment**	■	
(i)	Improvement of information base;	■	
(ii)	Identification of job creation opportunities in industry:		■
3.	**Strengthening of co-operative and producer associations in the informal sector**		■
4.	**Promotion of women's integration in industry**		■
(i)	Establishment of a mobile training programme for women in rural areas;		■
(ii)	Establishment of a business advisory centre		■

IV. STRENGTHENING OF GOVERNMENT CAPABILITIES TO FORMULATE AND TO IMPLEMENT INDUSTRIAL POLICIES

Problems to be addressed

This area of technical assistance is expected to address the following problems:

- weak organizational and institutional structures of the principal bodies involved in the promotion of industry;
- weak capabilities of key institutions to undertake economic analysis and policy formulation;
- lack of equipment and facilities for the efficient functioning of governmental and non-governmental organizations.

Objectives

Development of national capabilities for policy formulation, analysis and implementation.

Programme/Sub-programme	Priority: short term	Priority: medium term
1. **Strengthening of key government institutions including:**	■	
(i) Ministry of Industries, Science and Technology, and its agencies;	■	
(ii) Ministry of Mobilization and Social Welfare;	■	
(iii) NBSSI;	■	
(iv) Ghana Export Promotion Council;	■	
(v) NPART, DIC, SEC.	■	
2. **Support to non-governmental organizations (AGI and GCC)**	■	
3. **Regular exposure to international policy experience and trends through seminars**	■	

V. STRENGTHENING LINKAGES BETWEEN RESEARCH, SCIENCE AND TECHNOLOGY AND INDUSTRY

Problems to be addressed

The Government is keen to improve the access of industrial enterprises to the results of national research, science and technology as well as to foreign technological transfer. However, progress in this direction is slow because of the following problems:

- weaknesses in the administration of research, science and technology;
- lack of research and development facilities and capabilities in industry;
- poor standardization and quality control;
- low level of commercialization of research results;
- poor information services, especially for SSI and informal sector.

Objectives

To strengthen linkages between research, science and technology in order to improve the efficiency and competitiveness of local industries.

Programme/Sub-programme	Priority short term	Priority medium term
Specific programmes/subprogrammes within this area include:		
1. **Strengthening of commercialization capacities of research bureaux and Industrial Liaison Offices in universities**		■
2. **Assistance to universities and research institutions in setting up consultancy units**		■

VI. ENVIRONMENTAL PROTECTION

Problems to be addressed

The magnitude of the losses from environmental degradation in Ghana has resulted in the recognition by the Government of the necessity to undertake effective action to tackle environmental problems in a systematic and consistent way. These problems particularly include:

- lack of awareness programmes designed specifically for the illiterate rural population;
- non-utilization of industrial wastes;
- obsolete and, therefore, polluting equipment and technology in almost all industries;
- lack of systematic monitoring of air, water and coastal pollution.

Objectives

To ensure efficient management of natural resources and the environment, to establish efficient mechanisms to prevent environmental degradation, to promote wider use of clean and waste recovery technologies and to disseminate relevant information on environmental conservation, on a regular basis, among all industrial operators.

Programme/Sub-programme	Priority: short term	Priority: medium term
The introduction of new clean technologies and waste utilization and recovery are addressed by programmes/subprogrammes in Area I. The specific proposed technical assistance programmes include:		
1. **Assistance in environment impact assessment training**	■	
2. **Establishment of an environmental monitoring system**		■
3. **Assessment of training needs and the formulation of special training programmes for industrial managers at all levels**		■

VII. IMPROVEMENT OF SUPPORT SERVICES

Problems to be addressed

A well functioning industrial infrastructure and support services are necessary preconditions for deepening intra- and intersectoral linkages. Taking into account that transport, telecommunications and water infrastructure has already been receiving IDA, which is expected to expand in the years to come, the Mission includes in this area of assistance the following components:

Energy

The problems are dependence on a few sources of energy, lack of maintenance, obsolete equipment, dependence on imports for power generation and distribution equipment.

Standardization and quality control

Almost all industrial subsectors suffer from the lack of established standards and quality control systems with extremely negative effects on quality control of goods makeing them internationally uncompetitive.

Export promotion

Ghana has relied heavily for its earnings of foreign exchange on exports of traditional primary products such as cocoa and timber. The price of cocoa has fallen on world markets and the medium-term outlook is not buoyant. Exports of round logs are to be banned as before! Thus, the promotion of non-traditional exports from the primary sector, but most especially from the manufacturing sector, is essential in order to increase foreign exchange earnings.

There are a number of problems constraining expansion of non-traditional exports. Production constraints include: inadequate inputs; obsolete machinery and equipment; shortage and high cost of credit; poor design and poor quality of products; poor quality of packaging. Marketing constraints include: lack of market information; lack of export marketing skills; poor publicity materials; poor costing and pricing procedures thus reducing competitiveness. Special

problems constraining exports to ECOWAS countries including: lack of complementarity in structures of production among ECOWAS countries; inadequate transport and telecommunications; trade barriers including tariffs, lengthy administrative procedures, and differences in standards and regulations; inadequate regional payments system.

Objectives

Energy

To develop hydro-power and non-conventional energy resources in order to ensure reliable power supply to both urban and rural areas and to combat current over-exploitation of forests as a source of household energy.

Standardization and quality control

To improve quality control in manufacturing industry.

Export promotion

To increase exports of non-traditional exports by both existing and potential exporters; to strengthen export promotion agencies.

Programme/Sub-programme	Priority	
	short term	medium term
Energy		
1. Assistance in the development of renewable sources of energy such as solar, wind, biomass and so on		■
2. Strengthening of the energy audit programme of the Ministry of Energy		■
3. Establishment of mini hydro-power plants	■	
Standardization and quality control		
1. Strengthening of the GBS	■	
2. Identification of quality control requirements in manufacturing industry and the formulation of a quality control programme		■

Export promotion		
1.	**Improvement of cold storage facilities**	■
2.	**Establishment of a packaging industry**	■
3.	**Establishment of a design centre on the basis of UST's School of Arts**	■
4.	**Promotion of trade with ECOWAS countries**	■
5.	**Exploration of possibilities to establish Export Processing Zone on the coast**	■

VIII. IMPROVEMENT OF THE REGIONAL DISTRIBUTION OF MANUFACTURING INDUSTRIES

Forty-five per cent of industrial establishments are located in the Greater Accra area and almost 20 per cent in Kumasi. Only around six per cent are located in each of the less-developed regions. The overall current spatial distribution is not considered satisfactory. If left to the market, concentration will tend to increase and large sections of the population would be excluded from participation in industry unless they migrate to the larger urban areas.

Most manufacturing enterprises are small: this is especially the case in small centres. There are also very few linkages and sub-contracting arrangements between small and large enterprises; the existence of such linkages increases the chances of small and informal enterprises being sustainable in the long term.

The government is committed to achieving an equitable distribution of the benefits of economic development throughout Ghana. Decentralization of industrial activity is seen as a mechanism for promoting rural development and industrialization. Its approach is to promote small-scale industry in small centres especially district capitals.

This approach will not reduce the tendency toward concentration of industry in the two largest centres because of the operation of the underlying determinants of industrial location. Industrial activities tend to be pulled powerfully toward other industrial activities by the force of two kinds of external economies: localization economies which lead to the clustering together of enterprises in the same branch so as to benefit from a labour pool trained in skills appropriate to that branch, as well as common services; and urbanization economies which attract industrial activities to large urban centres because of good infrastructure, a labour pool with a wide variety of skills, a wide range of supporting services including training facilities, a large market, and the social amenities of an urban area which is helpful in attracting high calibre personnel.

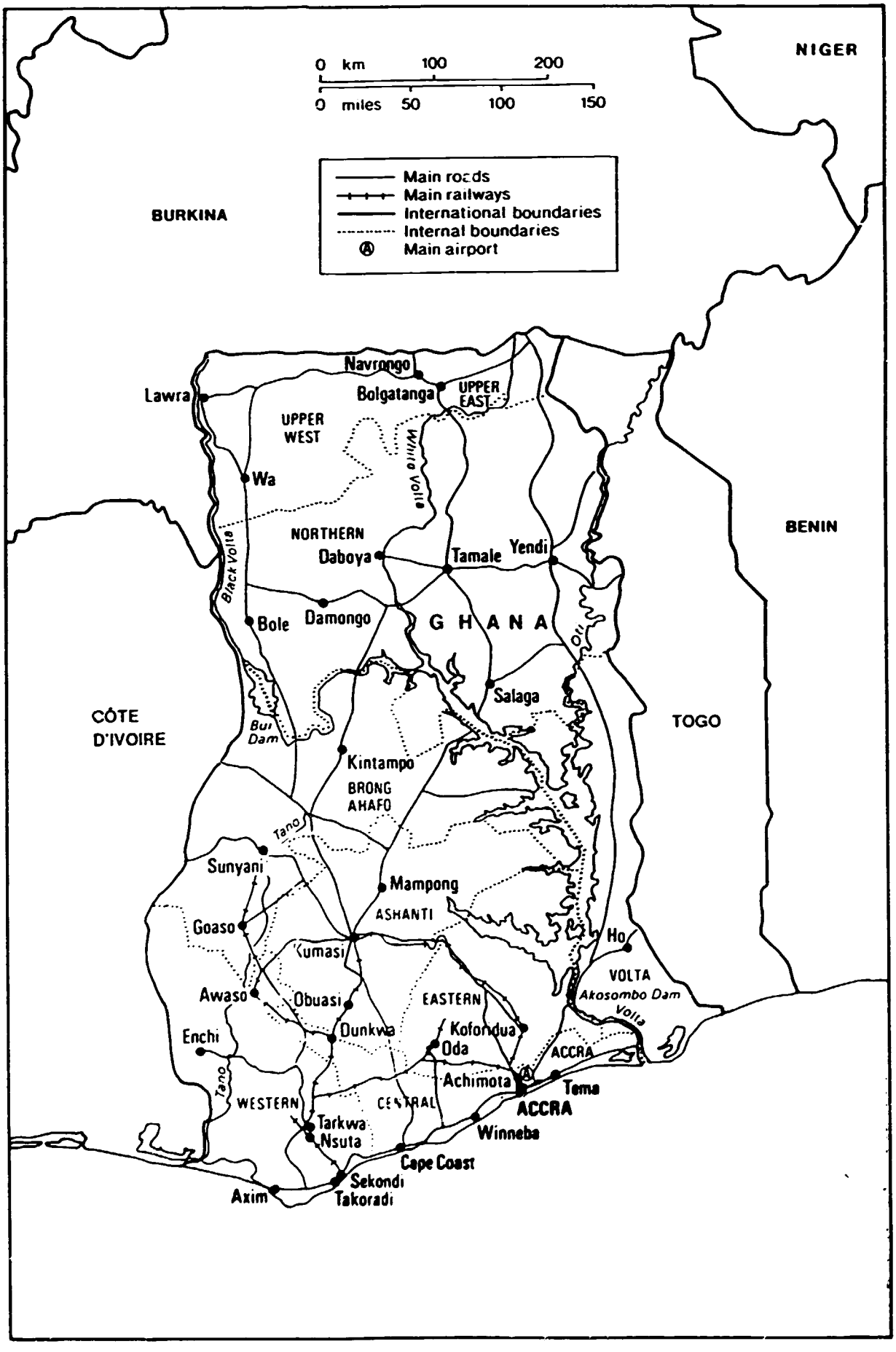
In order to attract relatively large manufacturing enterprises to areas outside the main cities - a necessary precondition for creating sub-contracting linkages for SSIs - a relatively small number of such larger urban areas, or growth poles, would need to be actively promoted, perhaps one in each of the less-industrialized regions.

Objectives

To provide sustainable manufacturing employment and income-generating opportunities in less-developed regions; to improve the regional distribution of manufacturing enterprises and of economic and social amenities; to establish sub-contracting linkages between small and large enterprises in less-developed regions; and to minimize transportation costs for inputs and outputs in the regions.

Programme/Sub-programme	Priority	
	short term	medium term
Decentralization		
1. **Exploration of possibilities for the establishment of regional growth poles**		■
2. **Institution building at the regional level**		■
(i) Establishment of regional offices of GIC, GEPC and other agencies;		■
(ii) Establishment of regional sub-contracting exchanges to create linkages between formal and informal sectors, between small and large enterprises and so on.		■

Annex 1
MAP OF GHANA



Annex 2
GHANA
BASIC INFORMATION

GEOGRAPHY

Size:	239,000 km^2 (about 0.79 per cent of African continent).
Location:	Western African region between longitudes 1° East and 3° West and latitudes 4° and 11° North. Common borders: Togo, Burkina Faso, Côte d'Ivoire.
Climate:	Tropical, above 680 mm annual rainfall.

POPULATION

Size:	15.2 million (1990).
Composition:	51.3 per cent female; 48.7 per cent male.
Density:	63.6 persons per km^2.
Urbanization:	35 per cent urban.
Population growth rate:	3.1 per cent.
Literacy rate:	32.5 per cent (1989).
Life expectancy:	55 years (1987)

ECONOMY

GDP (current prices):	US$5,249 million (1989), US$6,324 (1990, preliminary).
GNP per head:	US$345 (1989).
Inflation:	31.5 per cent per year (1986-1990); 25.2 per cent (1989); 37.0 (1990).
Merchandise exports:	US$807 million (f.o.b., 1989); $940 million (f.o.b. 1990).
Merchandise imports:	US$1,108 million, (c.i.f., 1989); US$1,250 million (c.i.f. 1990).
External debt:	US$3,078 million (end 1989).
Exchange rate:	¢270 = US$1 (1989); ¢326 = US$1 (1990).

Annex 3
DEVELOPMENT OF THE MANUFACTURE OF FABRICATED METAL PRODUCTS, MACHINERY AND EQUIPMENT (MACHINERY SUBSECTOR)

Following an analysis of these branches carried out during this mission, it is recommended that the future development interests of engineering, particularly in the capital goods area, may be better served if all manufactured engineering products and their associated processes were formally grouped to become a new machinery subsector. The rationale for developing this recommendation derives from common linkages identified between products serving the multiple needs of industries, particularly agriculture and food processing. Formal recognition of the proposed engineering sector in Ghana will enable a structured approach to be made for development, in line with other developing countries. The linkages between the machinery sector activities and other subsectors are illustrated in Fig. 1.

This proposal is in response to the Government industrialization policy to strengthen the national capacity for the transfer, utilization and development of technology, with particular reference to the capital goods sector. To implement such a programme, it is suggested that it is first necessary to outline the need for formally identifying what constitutes a machinery subsector in Ghana in order that individual activities and resources may be targeted and strengthened to meet the government's stated objectives for industry.

Following an analysis of the linkages between the respective activities in the metallurgical, engineering, electrical/electronic industries, it has been concluded that the future success of the proposed industrial expansion programme will be critically dependent on mechanization and associated machinery. The vast majority of machinery and capital equipment for mechanization is currently imported to a value approximating 40 per cent of total imports.

In forming this recommendation, the role of science and technology has been studied in detail, together with proposals for possible re-structuring. Science and technology activities are seen to be a service to the ultimate goals of self-sufficiency in capital goods, mechanizing of agriculture and/or improving existing mechanization and process installations. It is therefore implicit that specific finance needs to be formally identified for appropriate action. The outputs of a science and technology programme are seen to be only one of the activities necessary to succeed in achieving the goal of self sufficiency in engineering.[2]

Figure 1 illustrates the role of core industries such as machine tools, metalworking machinery, woodworking machinery and plastic product machinery.

Definitions

Engineering products and processes are fundamental to industrial growth and history shows that those countries who invest in formally structured engineering programmes are more successful in export markets than those who do not. The proposed machinery subsector is seen to comprise a range of products, capital goods and manufacturing processes and it is important to distinguish between products and processes. Products may include, but are not necessarily restricted to, hand tools and machine tools, instruments and medical equipment, agricultural implements, tractors, vehicles of all types, earth moving machinery, internal combustion engines, irrigation equipment, water distribution equipment such as pumps and valves, printing and textile machinery, electrical and electronic equipment including computers together with wood scaffolding, windows and doors for the construction industry. Processes include castings, forgings, machining such as turning and milling, toolmaking, sheet metalworking, welding, brazing, heat treatment, metal finishing, together with capability for the design and manufacture of printed circuit boards for electronic products.

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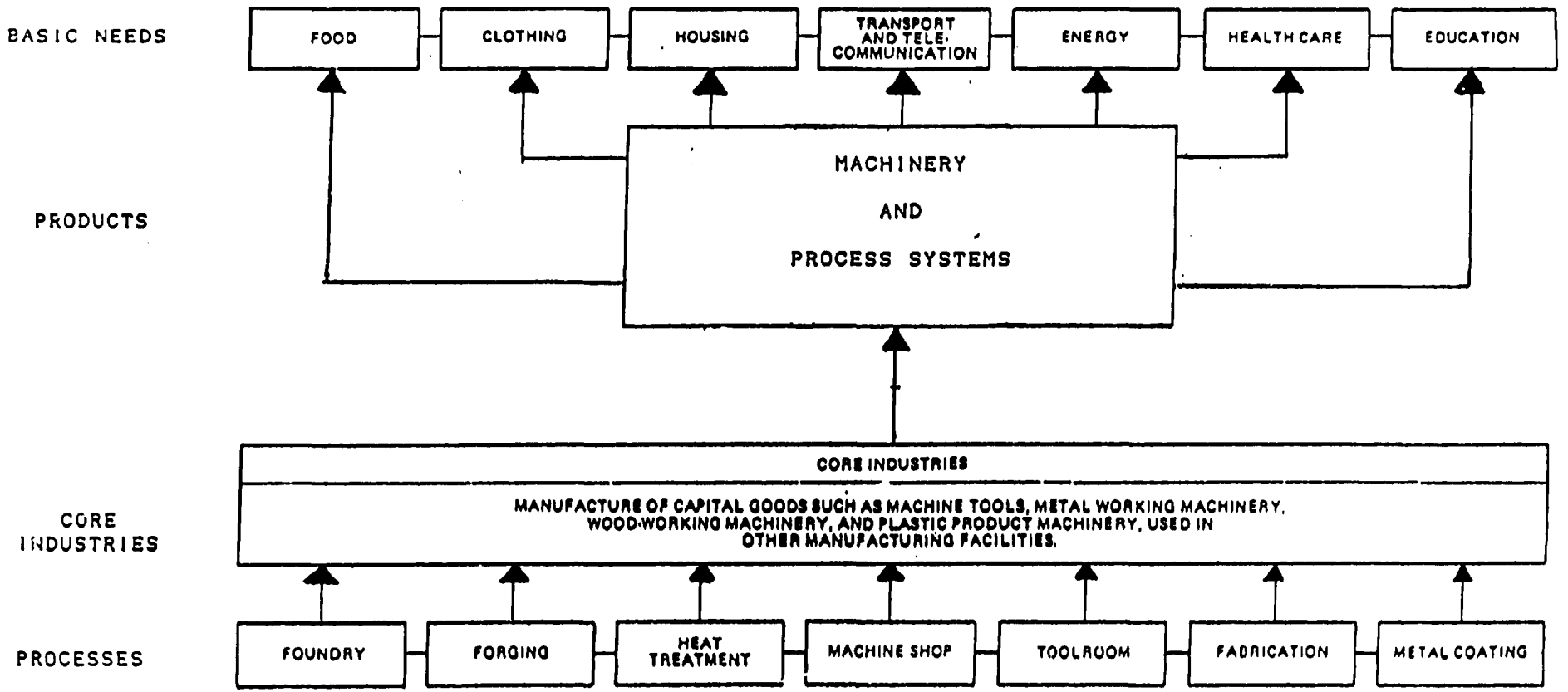
2 To date the engineering activities in Ghana have been developed on an "ad hoc" basis, being primarily driven by short-term requirements to service and maintain capital goods such as vehicles, agriculture equipment and ships. In consequence of this, "engineering" as such, has not been formally structured as a subsector of industry to satisfy the product and manufacturing process needs of capital goods serving agro-based, chemical, textile, minerals, ship-building and transport.

Figure A1: Subsectoral development of the machinery sector in Ghana



SUBSECTORAL DEVELOPMENT OF THE MACHINERY SECTOR IN GHANA

From the above distinction between products and processes it follows that the latter form linkages between the various product groups and lend themselves to the establishment of a range of small and medium sized companies for providing engineering services.

The purpose of these proposals is to indicate what steps should be taken, possibly with UNIDO assistance, to compile a comprehensive programme for the development of the proposed machinery subsector. It is envisaged that such a programme would include a co-ordinated approach, embracing all aspects from manpower development, priorities for technology transfer, market considerations, fiscal measures and promotional privileges for capital investment and export promotion which may be needed to contribute to a productive implementation programme for self sufficiency and reduction in imports of capital equipment.

Human Factors

Since the development of the proposed machinery subsector is highly dependant on human resources, the following observations are tabled for consideration. An in-depth analysis of education and training needs is outlined in Chapter 6 "Human Resources" and Chapter 7 "Women in Industrial Development".

The engineering profession as a career, is not readily identifiable as such in Ghana and has not been formally recognized to date for a number of reasons, not least the fragmented classification of goods and services between various commodity sectors. It is understood that the majority of graduates for example are currently employed by the public sector in non productive administration or emigrate to work in industry overseas.

Related experience of developing countries has exposed the dependency for growth in industry on being able to call on all types of engineers (engineering design, production and maintenance), particularly, in the metalworking and process industries, to ensure independence from foreign suppliers, with consequential savings in imports of equipment and labour. This is because of the technical linkages which exist between mechanical and electrical elements comprising any engineering equipment and/or products and their dependency on engineers who understand such inter-relationships. The popular misconception that Universities satisfy the needs of industry with adequate supplies of qualified graduates has been shown to be woefully inadequate in a competitive commercial environment.

Experience world wide shows that the lack of an abundant supply of technically qualified and industrially trained engineers has been (and still is), a real impediment to increasing productivity of all sectors of industry. From the long term point of view of developing countries wishing to expand their industrial base, potential foreign investors are discouraged from starting up new ventures on account of the shortage of suitably qualified staff in all aspects of engineering, from design, manufacture, quality assurance, engineering management, finance and marketing.

The alternative approach to solving the manpower shortage, that of importing trained staff, clearly has disadvantages, both for the investor and the potential industrial partner in the recipient country. These disadvantages range from fundamental resentment to expatriate labour by the local labour force, to the high premium paid to attract expatriate staff and/or Ghanaians trained abroad to return home. Both of these factors contribute to the consequential reduction in profitability of the enterprise. The use of short term consultants is one device which offers a temporary solution but is costly if sustained for a long period.

A co-ordinated manpower planning programme embracing all levels from primary school to post graduate training is seen to be fundamental to the success of the proposed venture. Another need is for some form of "bridging operation" between post graduate training and industry is a pre-requisite for achieving the necessary outputs of engineers. An example of this is the UNIDO proposal for a Manufacturing Technology Center.

Annex 4
RESEARCH, SCIENCE AND TECHNOLOGY INSTITUTIONS

A. Institutions under MIST

1. CSIR Institutions
   - Animal Research Institute
   - Building and Road Research Institute
   - Crops Research Institute
   - Food Research Institute
   - Ghana National Atlas Project
   - Herbs of Ghana Project
   - Industriai Research Institute
   - Institute of Aquatic Biology
   - Oil Palm Research Centre
   - Scientific Instruments Centre
   - Soil Research Institute
   - Technology Transfer Centre
   - Water Resources Research Institute

2. **Other Institutions**

   Ghana Regional Appropriate Technology Transfer Services (GRATIS) with regional Intermediate Technology Transfer Units (ITTU)
   Development and Application of Intermediate Technology Project (DAPIT)
   Ghana Standards Board (GSB)

B. Institutions in Different Ministries

Technology Consultancy Centre (TTC)
National Board for Small-scale Industries (NBSSI)
Department for Rural Housing and Cottage Industries
Registrar General's Department
Ghana Investment Centre
Minerals Commission
National Energy Board
Atomic Energy Commission

Departments for veterinary, meteorology, survey, statistics, health laboratory and forensic science

Universities
Polytechnics
Technical Institutes
Cocoa Research Institute
Fisheries Research Unit
Forest Products Research Institute
Central Bureau of Statistics
Curriculum Research Unit
National Nuclear Research Institute

C. Private Institutions

Laboratories in industries
Consultancy organizations
Scientific associations

Annex 5
STRATEGIC MANAGEMENT APPROACH TO SUPPORT THE INDUSTRIALIZATION PROCESS

Like in other African countries, the Structural Adjustment Programme being pursued in Ghana, has serious implications for industry. New legislations and policies, tariffs, policies, changes in bureaucracy and so on have been introduced. The expectation is that this so called open end competitive framework will promote an effective and competitive industrial sector. Recent studies by UNIDO, however, clearly indicate that liberalization policies alone cannot lead to industrial growth and development. They must for various established reasons be supported by specific action programmes which will enable industries to become more efficient and more competitive. There must be room for a comprehensive and active dialogue between the administration and the business community. Therefore, as an alternative framework for industrial planning, UNIDO is now promoting the concept of strategic management to the industrialization process.

The strategic management approach provides the platform for close co-operation among the economic agent, it makes for a clear definition of their roles in the industrialization process and the elaboration of consolidated strategies and action programmes toward that goal. Indeed, it is apparent that an increasingly complex environment, marked by rapid technological change and keen competition, liberalization policies should be supported by specific measures. In certain instances, proper guidance and intervention by the state is still needed.

The strategic management of industrial development (SMID) is an action-oriented approach to formulate and manage strategies and support programmes to develop a competitive and efficient industrial systems. SMID, it should be pointed out, is already in progress in some Africa countries including Nigeria, Cameroon, Senegal, Madagascar, Zaire and Niger. In Cote d'Ivoire and Cameroon it has led to the elaboration of Industrial Master Plan.

It is strongly suggested that Ghana institutes with the assistance of UNIDO, the strategic management approach to industrial development as a way of complementing SAP measures. Though SMID, the private sector and other economic agents will be brought into the mainstream of economic planning and execution. It will ensure the promotion of those industries where Ghana has comparative advantage. It will certainly promote institutionalized and fruitful consultations. Details of suggested action programme, organizational framework, nature of technical support and information system, methodology and sub-system can be worked out.

Annex 6
LIST OF INSTITUTIONS, AGENCIES AND PERSONS CONTACTED

1. Government institutions and agencies

Council for Scientific and Industrial Research (CSIR)	Dr. M.N. B. Ayiku, Co-ordinator, Technology Transfer Committee (TIC)
Developing Rural Cottage Enterprises Project	Mr. M.M. Ansah, Acting Director
Divestiture Implementation Committee (DIC)	Mr. Kweku Osae-Brenu, Legal Consultant Ms. Helen Obeng, Legal Secretary
Environmental Protection Council	Prof. C. Dorm-Adzobu, Director of Programme Dr. Christina Amoako-Nuama, Senior Programme Officer (Natural Resources) Mr. Kwame Omari, Programme Officer Mr. Emmanuel Dzorkah, Accountant
Ghana Investment Centre (GIC)	Dr. K.G. Erbyrnn, Chief Executive Mr. N.T. Apo'si, Deputy Chief Executive Mr. E.Y. Bonso, Director, Project Processing Mr. E.M. Gyasi, Director, Project Developmentand Promotion Division
Ghana Export Promotion Council (GEPC)	Mr. Kwesi Ahwoi, Executive Secretary Mr. K. Owusu-Adjei, Junior, Director, Finance and Administration Ms. Constance M. Quacoe, Director, Research, Planning and Development Division Mr. Tawia Akyea, Director, Trade Information, Public Relationnnnns and Export Services Mr. Henry Oko Okai, Director, Marketing Mrs. Martina Addo, Senior. Export Development Officer, Research, Planning and Development Division Mr. S. Kulatunga, Project Co-ordinator, UNCTAD/GATT
Ghana National Scientific and Technological Information Network (GHASINET)	Mr. K.M. B. Hevi, Scientific Information Officer Ms. A. Acquah, Assistant Librarian
Industrial Research Institute	Mrs. Amoako-Mensah, Director Mr. Fred Djokoto, Head, Engineering Division, Mechanical Engineering
ITTU, Tema	Mr. Robert Buatsi, Head, Socio-economic and Communications Division Mr. Patrick Nimo, Publicity and Publications Officer Mr. Daniel Numo, Manager

Ministry of Agriculture (MOA)	Commodore Steve Obimpeh, PNDC Secretary Mr. V.N. Dowuona, Acting Chief Director Mr. Henry Wood, Assistant Director
Ministry of Energy	Dr. Charles Y. Wereko-Brobby, Energy Policy Adviser
Ministry of Finance and Economic Planning (MFEP)	Mr. George Cann, Director, International Economic Relations Mr. Charles Abakah, Chief Economist (Multi-laterals), International Economic Relations Mrs. Margarete Clarke-Kwesie, Principal Economist (UN Desk, International Economic Relations)
Ministry of Industries, Science and Technology	Captain C. Butah, PNDC Secretary Dr. Kwabena Adjei, PNDC Deputy Secretary Mr. D.K. Ayayee, Agriculture Chief Director Dr. E.A. Osafo, Director (Technical) Dr. J.K.B.A. Ata, Director (Science and Technology) Mrs. Alice Menkah, Deputy Chief Industrial Promotion Officer Mr. J.K. Appiah, Deputy Chief Industrial Promotion Officer Mr. A.Y. Nawurah, Principal Industrial Promotion Officer Mr. Adu Frimpong, Principal Industrial Promotion Officer Mr. R. Dadzie-Bonney, Senior Industrial Promotion Officer Mr. Francis Addo, Senior Industrial Promotion Officer Mr. Kwadwo Brobbey, Senior Industrial Promotion Officer Mr. A. Obiri-Yeboah, Industrial Promotion Officer Mr. Issah Nikabs, Industrial Promotion Officer Mr. K.A.I. Nuhu, Industrial Promotion Officer Mr. Robert Tandoh, Industrial Promotion Officer Mr. S.K. Dzakpasu, Assistant Industrial Promotion Officer Miss Julia Anokye, Assistant Industrial Promotion Officer
Ministry of Mobilization and Social Welfare (MMSW)	Mr. D.S. Boateng. PNDC Secretary Rev. D.K. Essandoh, Acting Chief Director Mr. P. Obeng Fosu, Acting Chief Labour Officer Mr. Charles Atiemo, Director Mr. Charles Abban, Acting Director, NVII Mr. Kodwoe Yankson, Legal Adviser
MIST-Inter-Ministerial Group	Dr. K. Adjei, PNDC Deputy Secretary, MIST Mr. D.K. Ayayee, Acting Chief Director, MIST

MIST-inter-Ministerial Group *(continued)*	Dr. E.A. Osafo, Director (Technical), MIST Dr. J.K.B. Ata, Director (Science & Technology), MIST Mr. P. Obeng Fosue, Acting Chief Labour Officer, MMSW Mr. I.K. Mintah, Programme Officer, Ministry of Energy Mr. Aggrey-Fynn, Assistance Director, MOA Dr. A. Appiah-Koranteng, NSP, NDPC Mr. K. Asante-Frimpong, Co-ordinator,EDP, NBSSI Dr. A.M. Goka. Primay Research Officer, CSIR Mr. S.E. Addo, Deputy Chief Industrial Promotion Officer, MIST
Ministry of Trade and Tourism (MOTT)	Mr. R. Tandoh, Industrial Promotion Officer Mr. Benjamin Heh, Industrial Promotion Officer
NVTI	Mr. Abloh, Director ICCES
National Board for Small-scale Industries (NBSSI)	Dr. E.K. Abaka, Executive Director Mr. P.K.A. Akomaning, Deputy Executive Director Mr. Kofi Asante-Frimpong, Training Co-ordinator, EDP
National Co-ordinating Committee for Technical and Vocational Education and Training	Mr. Charles K. Abban, National Co-ordinator
National Council on Women & Development	Ms. Atawa Akyea, Administrative Secretary
National Development Planning Commission (NDPC)	Dr. F.O. Tay, Director, Economic Policy Division Dr. J.K. Kwakye, Department Director Mr. D.S. Pearson, Chief Technical Adviser, UNDP Mr. M. Bawa Amadu, NPP Dr. A. Appiah-Koranteng, NSP
Non-Performing Assets Recovery Trust (NPART)	Dr. A. Mohammed, Chief Administrator Mr. Marcelo Bueno, Principal Adviser Mr. Rashid Bawa, Secretary
State Enterprises Commission (SEC)	Mr. William A. Adda, Executive Chairman Mr. E.N.A. Thompson, Executive Director Mr. Rex Bruce, Legal Secretary

2. Non-governmental institutions

Association of Ghana Industries (AGI)	Mr. J. Richardson, President Mr. Eddie Imbeah-Amoakuh, Executive Secretary Mr. E. Adu-Gyamfi, Chairman, Metals and Building Sector Mr. Peter Appiah, Regional Chairman, E.R. Mrs. Lucia Quachey, Chairperson, Garments & Knitting Section Dr. A.A. Ouausu, Chairman, Food, Drinks and Tobacco Section Mr. Nana Kojo Bi-Anyensu I, Member, Managing Director, Kings Shoe Factory, Accra Mr. E.K. Acquah, Member, Managing Director, Vougas Industries Ltd., Accra Dr. T.E. Buomah, Member, Managing Director, Pro-Bio Lab. Ltd., Accra Mr. Edwin A. Bonatoa, Businessman
BEHOM Consulting Firm	Ben Owusu-Mensah, Managing Consultant
EMPRETEC	Dr. Alan Kyeremanteng, Director Mr. F. Acquah, Director
Ghana Employers Association (GEA)	Mr. E. Ato Williams, Executive Director
Ghana National Chamber of Commerce (GNCC)	Mr. Alex Awuku, First Vice President Mr. John B.K. Amanfu, Executive Secretary Dr. N.D. Wadhwa, Member of Executive Committee Mrs. Soma Goouetilleke, Chief Technical Adviser, ITC/UNDP
Price Waterhouse	Mr. John Klinogo, Accounting and Management Consultants
Technoserve	Mr. Paul Warmka, Country Director Mr. Augustus Chinebuah, Project Assistant
Trade Union Congress (TUC)	Mr. Augustus K. Yankey, Secretary-General Mr. S.O. Nunoo-Quaye, Head, International Department

3. Banking institutions

Bank of Ghana	Mr. K. Bervell, Director, Development Finance Department Mr. S.P.D. Kotey, Assistant Director, Development Finance Department Mr. A.M. Amoah, Manager, ECGD, Development Finance Department Mr. B.K. Bentsil, Manager, ISAC-IDA, Development Finance Department Mr. S.A. Ameyaw, Department Chief, Research Department

National Investment Bank	Mr. Steve Dadzie, Department Managing Director Mr. E. Otchere, Special Director, Development Banking Mr. S. Sekyere-Abankwa, Special Director, Commercial Banking
Women's World Banking (Ghana) Ltd.	Mrs. Sarah Ampah Nunoo, Manager

4. University and training institutions

Ghana Institute of Management and Public Administration (GIMPA), Box 50 Achimota	Dr. T. Wereko, Director Mr. Amoa, Deputy Director (Training) Mr. Hagan Deputy Director (Consultancy) Mr. Awuah, Deputy Director (Research) Mr. Ben Eghah, Senior Lecturer
IYCB (Improve your construction business)	Mr. John Ward
Management Development and Productivity Institute (MDPI)	Dr. H. Aknoko-Fripong, Agriculture Director
School of Administration	Mr. Sam Woode, Director
Strengthening Population HRD Planning	Mr. Quist-Therson Mr. A. Okorafoh
University of Ghana, Legon	Prof. Akilakpa Sawyerr, Vice Chancellor Dr. G.K. Tetteh, Head, Department of Physics Dr. M.K. Mensah, Head, Department of Geology Dr. M. Osei-Kwasi, Agriculture Director, NMIMR Dr. B.K. Ahunu, Dean, Faculty of Agriculture Dr. J. Auquanda, Agriculture Dean, Faculty of Social Studies Dr. S.I.K. Odoom, Agriculture Dean, Faculty of Science Mr.A.A. Mensah, Agriculture Director, Institute of Performing Arts Dr. K.A. Ninsin, Head, Department of Political Science Dr. P.A.V. Ansah, Director, Institute of Communication Studies Dr. P.W.K. Yankson, Lecturer, Department of Geography Prof. George Benneh, Head, Department of Geography Dr. Nii Kwaku Sowa, Agriculture Head, Department of Economics Ms. Mavis Acquaye-Barthelemy, Assistant Registrar
University of Science and Technology (UST), Kumasi, College of Art	Mr. J.K. Amoa, Vice Dean, Ceramics Mr. J.A. Omari, Textiles Mr. K.K. Broni, Ceramics

5. Multilateral, bilateral agencies and Embassies, UNDP

Caisse Centrale de Cooperation Economique	Mr. Yves Malpel, Senior Project Officer
Canadian High Commission	Mr. Gerald R. Chauvet, First Secretary (Development)
Embassy of the Federal Republic of Germany	Mr. E. Pohl, First Secretary
European Community Delegation	Mr. H. Okorn, Engineering Adviser Mr. K. Schmidt, Economic Adviser
ODA British High Commission	Ms. Rosemary Stevenson, First Secretary (Aid)
World Bank	Mr. Nick Bennett, Ag. Resident Representative Mr. Kofi Tsikata, Research Assistant
UN Centre for Human Settlement (Habitat)	Mr. Brian Roberts, Chief Technical Adviser (Urban Planning and Development Programme) Mr. Erhetu Abebe, Urban Economist, Planner
UNDP, Accra	Ms. Lyn Wallis, Resident Representative Mr. Francis Fitz, Principal Economist Mr. Cornelius Adablah, Economist Mr. T. Bernklau, JPO
USAID	Mr. Joseph B. Goodwin, Aid Representative

Annex 7
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