Chapter II
Research Methodology and Review of Literature

Research Methodology

2.1 Objective of Study:

The following are the major objectives of the study:

1) To study the problem of unemployment in Jalna and Aurangabad District.
2) To study the role of DIC center in employment generating.
3) To suggest the measures for generation of employment.
4) To evaluate the areas of employment generation under D.I.C.
5) To suggest the measure for proper implementation of various schemes of D.I.C.

Research Question

Lack of coordination between “DIC & other employment generation Institution is depriving youth of employment opportunities in Jalna & Aurangabad District”

Reference period

This study is confined to period 2008-2014

2.2 Research Methodology:

The detailed study of Jalna and Aurangabad district in Marathwada region in the field of unemployment, DIC Center...
their polices employment generation methods and results in various sectors of industry under the purview of D.I.C..

2.2.1 DATA Collection:
The data is collected from various reports of D.I.C. official website of different organization, journal and then it is analyzed.

2.2.2 Tools of Analysis:
The data collected is analyzed by using the averages, percentage change and the increased and decreased percentages.

2.2.3 Scope of Study:
The study is primarily related to employment generation opportunities and there is further scope for study related to areas such as
a) Study of employment generation through Micro, Medium and Small Industries.
b) Study of employment generation in the agro based industries in Marathwada & Maharashtra etc.

2.3 Chapter Scheme:
Chapter I- Introduction.
Chapter II- Research Methodology & Review of Literature.
Chapter III-District Industries centers & its schemes.
Chapter V- Summary, Conclusion and Suggestions.
  • Bibliography
Review of Literature

1. **Hassan, Moshood Ayinde**, February 2012 | Developing Small Business Entrepreneurs through Assistance Institutions: The Role of Industrial Development Centre, Osogbo, Nigeria | International Journal of Business and Management Vol. 6, No. 2; The purpose of this study is to determine how assistance institutions are contributing to the development of small and medium enterprises (SMEs) in Nigeria, with special reference to Industrial Development Centre (IDC), Osogbo, Nigeria. Survey research was used in order to carry out the study. Three hundred and forty (340) respondents from university students, trade union congress and private entrepreneurs in Nigeria were sampled.

Four research questions were generated from the literature review, questionnaire on developing small business entrepreneurs through assistance institutions, and the responses elicited from respondents were numerically quantified, tabulated and analyzed using the Likert Scale. The analysis showed that assistance institutions in Nigeria, especially IDC, have really contributed immensely to the promotion of small and medium enterprises as well as entrepreneurship development generally. The paper also looked into some problems confronting SMEs in the developing nations like Nigeria. Based on the findings, it is recommended that efforts should be made to commercialize the products of IDC so as to meet the demand of the people, and special fund should
be set aside to encourage entrepreneurs who may be financially handicapped after training on SMEs development.

Conclusion: The benefits derivable from small and medium enterprises in developing economies are enormous. The strategic role of the entrepreneur as an agent of economic transformation in society is visible in employment and wealth generation, stimulation of indigenous entrepreneurship and promotion of entrepreneurial culture. Small and Medium Enterprises serves as a linchpin between invention, innovation, and introduction of new products and services in the marketplace and also enables entrepreneurs to act as engines of growth in the economy. Therefore, its promotion should be rigorously pursued for better economic growth and productivity.

3. **A report by UNESCO | 2012 | Understanding Creative Industries**

Cultural statistics for public-policy making| Cultural statistics for public-policy making| The recent emergence of the creative industries as a distinct area of interest for economists, statisticians, cultural specialists and public-policy makers reflects a growing awareness of their economic potential and their role in fostering cultural diversity through the market. The concept of creative industries for the purpose of public policy making remains very young and not all governments are convinced of the need to address this sector with targeted initiatives.

With the advent of new technologies in the last 20 years such as the internet, e-commerce and electronic files that make sharing,
trading and consuming cultural goods and services easier than ever before, globalisation has had a profound impact on the creative industries.

Statistical methodologies, which are so important to provide officials with the information they need to develop suitable policy to support the creative industries, have yet to catch up with this reality. In order to harness the opportunities offered by the creative industries, governments first need to undertake thorough mapping and statistical research to better understand them. UNESCO, as the world’s only inter-governmental body dedicated to culture, with a its own specialised Institute for Statistics, has a vital role to play to furnish guidance, best practice

4. **V.Mallika** | December 2012| The role of small scale industry in reduction of poverty in India| indiastat.com| After implementation of 1991 new industrial policy resolution, there was a threat for the very survival of small scale industry in India during the post reform periods. The government apart from encouraging high rate of foreign investment in the Indian industries it has been also liberal in extending relatively more number of foreign good is available everywhere in India at cheaper rate. Small scale industrial sector to contribute to increase of industrial productivity, rise of exports, generate more employment opportunity and also contribute very impressive of the GDP. In view of this, the government of India has rightly recognised small scale industries as the engine of growth in the present
millennium. For sustainable higher growth of the small scale industrial sector, top priority should be given to financial support. State and central government should facilitate the growth of small scale industry mainly through creating conducive environment for producing and marketing of products and services of small scale sectors.

5. **A report** | December 2012| *The World Bank and industrial policy: Hands off or hands on?*| Carlos Fortin, Institute for Development Studies| The report goes on to distinguish between "light touch" initiatives, such as those involving network-thickening, and "high intensity" initiatives, like coordinating investments and picking winners. The latter are not ruled out, but are subject to strict conditions. A basic condition for high-intensity initiatives to be successful is institutional capability: "strong administrative capability, commitment mechanisms that credibly restrain arbitrary government action, the ability to respond flexibly to surprises, a competitive business environment, and a record of public-private partnership." Furthermore, and most importantly in the Bank's view, "a country's strategy for industrial development has to be guided by its evolving comparative advantage ... Some proponents of activist measures have favored efforts to nurture a nascent comparative advantage by encouraging firms to risk more on a new market than they might otherwise have been willing to invest. Very few, however, would support wholesale leapfrogging." *The World Bank is known as a leading critic of industrial policy because it favours a limited role for the state in*
development policy, preferring well-functioning markets. Former
deputy secretary general of UNCTAD Carlos Fortin, now at the
Institute of Development Studies, examines the Bank’s record
on industrial policy over the last 20 years and shows that the
Bank’s position on the role of the state is more nuanced.

6. C.P. Chandrasekhar | March 2012 | Development Banks: Their
role and importance for development| the author concluded with;
Thus, over a significantly long period of time, countries
embarking on a process of development within the framework of
mixed, capitalist economies have sought to use the developing
banking function, embedded in available or specially created
institutions, to further their development goals. The role of these
institutions in the development trajectories of late industrialising,
developing countries cannot be overemphasised. However, as
noted above, with financial liberalisation of the neoliberal variety
transforming financial structures, some countries are doing away
with specialised development banking institutions on the
grounds that equity and bond markets would do the job. This is
bound to lead to a shortfall in finance for long-term investments,
especially for medium and small enterprises. Fortunately, there
are some countries such as Brazil that have thus far not opted
for this trajectory.

7. Mohamed Shihab | January 2011 | Economic Development in
the UAE| the researcher has concluded that The UAE is a very
wealthy country, mainly due to its modest population base and
huge oil resources. The large budget surpluses achieved have
enabled the UAE to accumulate a sizeable current account balance, held mainly by the governments of the individual emirates and partly by other private establishments. Progress has been favourable in social and economic development. The successful implementation of human development policy in the UAE, hand in hand with industrialization, urbanization and modernization, is one of the rare examples of a country which has successfully used income from its huge natural resources for its long-term development over a very short period (from the early 1970s to late 1990s). It is clear that the UAE has achieved impressive improvements in many social and economic development indicators during the past three decades. This chapter emphasizes the high levels of human development in UAE, together with a relatively good record on human rights. These are goals which must still be borne in mind in attempts to sustain national development.

8. **Keijiro Otsuka, Tetsushi Sonobe** | June 2011| A Cluster-Based Industrial Development Policy for Low-Income Countries| The World Bank Development Economics | The need to construct an effective strategy for industrial development in low-income countries has been largely ignored by development economists because industrial policies have failed in many developing countries. This does not imply, however, that industrial development cannot be promoted. This paper attempts to synthesize the conventional wisdom in development economics with recent advancements in various fields of economics (such as theories of endogenous growth and
agglomeration economies) to provide a useful framework to design a strategy for industrial development, which consists of investments in managerial human capital followed by the provision of credit and the construction of industrial zones.

9. **Dende Gbolagade Adejumo** [March 2011] An Assessment of the Impact of Industrial Development Centers (IDCS) On Generation of Employment by Small Scale Businesses in Nigeria | Journal of Sustainable Development | ISSN 1913-9063 | Vol 4, No 3 | The study assessed the impact of Industrial Development Centers (IDCs) on employment generation by small-scale businesses in Nigeria. The study was designed primarily to determine whether or not the generation of employment of small-scale businesses beneficiaries of the IDCs increased significantly after obtaining IDCs’ services. The study indicated that the services offered by many (66.7%) of the IDCs led to significant increase in employment generation by large number of beneficiary small-scale businesses at 1% level but at 5% level the services offered by many (66.7%) IDCs did not lead to significant increase in employment generation by large number of small-scale businesses beneficiaries. The study also indicated that there were significant differences among the IDCs regarding changes in employment generated by their beneficiary small-scale businesses after receiving services.
10. **Dende Gbolagade Adejumo | May 2011| An Assessment of the Impact of Industrial Development Centers (IDCS) On Generation of Employment by Small –Scale Businesses in Nigeria | Journal of Sustainable Development Vol. 4, No. 3;| ISSN 1913-9063 E-ISSN 1913 -9071| The study assessed the impact of Industrial Development Centers (IDCs) on employment generation by small-scale businesses in Nigeria. The study was designed primarily to determine whether or not the generation of employment of small-scale businesses beneficiaries of the IDCs increased significantly after obtaining IDCs’ services. The study indicated that the services offered by many (66.7%) of the IDCs led to significant increase in employment generation by large number of beneficiary small- scale businesses at 1% level but at 5% level the services offered by many (66.7%) IDCs did not lead to significant increase in employment generation by large number of small-scale businesses beneficiaries. The study also indicated that there were significant differences among the IDCs regarding changes in employment generated by their beneficiary small-scale businesses after receiving services. The researcher further summered that in the foregoing an attempt has been made at assessing the impact of Industrial Development Centres (IDCs) on generation of employment of small- scale businesses in Nigeria. Three hundred beneficiary small –businesses of twelve (54.54%) of the twenty two IDCs in Nigeria were the focus of the study. The study indicated that the services offered by many (66.7%) of the IDCs led to significant increase in employment generation of large number of beneficiary small-scale businesses at 1% level. The study however indicated that
the services offered by many (66.7%) of the IDCs did not lead to significant increase in the employment generation by large number of beneficiary small-scale businesses at 5% level. The study also indicated that there were significant differences among the IDCs regarding changes in employment generated by their beneficiary small-scale businesses after receiving services. Based on the above findings, it is concluded that at 1% level, the services offered by many of the IDCs had positive impact at 1% level, but at 5% level had no positive impact on small-scale businesses regarding employment generated.


Breaking In and Moving Up: New Industrial Challenges for the Bottom Billion and the Middle-Income Countries| ISBN: 978-92-1-106445-2 | *Developed countries could do more to promote industrialization in developing countries for three reasons. Firstly, it serves their own interest. The influx of cheap manufactured products from developing countries has been the foundation of an unprecedented period of prosperity in developed countries. Secondly, the income gap between developed and developing countries, which widened during the past two centuries but has at last begun to narrow, still remains unacceptably wide, and industrial development is an indispensable driver of poverty-reducing economic growth. Thirdly, it unites ethical imperatives in a single priority to pump-prime the process of industrialization in the poorest countries in the world. Industrialization is lumpy in geographical space, in product space and in time. It is the lumpiness in time that is*
critical: once an economy crosses over the threshold of competitiveness, its industrial expansion can be explosive, as demonstrated by China. Yet below that threshold the outcome is most likely to lead to industrial stagnation. The existence of such a threshold implies that, for countries below it, marginal efforts to improve competitiveness are likely to fail. What is needed is a concerted and coordinated effort to raise countries of the bottom billion above the threshold. However, the most astonishing implication is that this effort need only be temporary.

12. **José L. Bolívar Fresneda** | 2008| The Development Bank And The Initial Failure Of The Industrial Program In Puerto Rico, 1942-1948 | Centro Journal, vol. XX, pp. 127-147| ISSN: 1538-6279 | The Development Bank and the Development Company were meant to be the two pillars of the industrialization effort implemented in Puerto Rico at the start of the Second World War. It was hoped that this effort would lift the island out of its severe economic and social crisis. The Development Bank was created to take risks and finance industrial loans. However, deeming them too speculative, it concentrated its effort on building its wealth by investing in risk-adverse governmental backed bonds and similar obligations, as well as issuing bonds for infrastructure projects. It therefore ignored or sidetracked the reason for its creation. Over the following sixty years, its successor, the Government Development Bank, continued on this path, shedding its responsibility for promoting industrial loans and development, and instead, concentrating on serving as a governmental bank. This paper examines the origins of the
Development Bank and explores the reasons it sidetracked its development functions. The Second World War, and the disastrous economic and social conditions in Puerto Rico prior to the war, motivated the U.S. government to assist in the Island’s economic recovery. It was thought that implementing an industrial program would lift Puerto Rico out of its misery. The Development Company and the Development Bank were to become the pillars of this program. Unfortunately, internal squabbling squandered this opportunity. The Development Bank functioned more like a governmental institution dedicated toward issuing and selling bonds, and ignored its other important function, that of approving loans deemed too risky by the commercial banking sector. Neither did it function as the policy instrument envisioned by Governor Tugwell, assuming risks that the private commercial banks refused to support. Buscaglia was given full authority to run the bank as he saw fit. In spite of what the law said about the bank’s objectives and in spite of Governor Tugwell’s view that the bank was an institution that would take risks not covered by the private sector, this did not happen. Buscaglia was able to twist and turn through the political structure, confront accusations by Moscoso’s Development Company and by the PRMA, and still hold his ground. His legacy continues. The Development Bank, the precursor of the Governmental Development Bank (GDB), concentrated its efforts on providing governmental services and bond issues, and abandoned its efforts to provide industrial or commercial loans. Its successor, the GDB, continued those policies.

GSSP is a research, communication, and capacity-strengthening program to build the capabilities of researchers, administrators, policymakers, and members of civil society in Ghana to develop and implement agricultural and rural development strategies. With core funding from the U.S. Agency for International Development (USAID)/Ghana and a mandate to develop a multi-donor-funded Program, IFPRI launched GSSP as a partnership between Ghana and its development partners.

IFPRI is working with these stakeholders to generate information, improve dialogue, and sharpen decision making processes essential for effective formulation and implementation of development strategies. GSSP informs stakeholders on the role of agriculture and rural development in the broader economic and policy context in line with the emphasis placed on agriculture in Ghana’s Growth and Poverty Reduction Strategy. GSSP supports the development and implementation of a system to monitor and evaluate progress toward achieving Ghana’s growth and poverty reduction targets and the Millennium Development Goals.


Small medium enterprises (SME’s) in Ghana face a host of problems
and constraints. These must be overcome if they are to be sustainable and move into the mainstream of the economy. The role of SME’s in employment generation and development in Ghana is explored in this paper. In particular, the paper looks at the Garment and Textile manufacturing industry in Ghana as one of the industries targeted as key to reducing poverty, promoting growth and generating employment. The impact of the president’s special initiative (PSI) as an intervention to boost production and growth in this sector is assessed. As an exploratory study, this paper identifies some of the constraints faced by SME’s in this industry and discusses key interventions for successful development of the garment and textile manufacturing sector in particular.

15. Jodie Keane and Dirk Willem te Velde | May 2008 | The role of textile and clothing industries in growth and development strategies | Investment and Growth Programme Overseas Development Institute | the research paper examines the role of textile and clothing (T&C) industries in growth and development strategies in developing countries. It suggests that textiles and clothing industries are important in economic and social terms, in the short-run by providing incomes, jobs, especially for women, and foreign currency receipts and in the long-run by providing countries the opportunity for sustained economic development in those countries with appropriate policies and institutions to enhance the dynamic effects of textiles and clothing. The potential of the textile and clothing industries to contribute to long-run growth and development will depend not
only on the attributes (desirable or otherwise) of the investors, but also on the quality and effectiveness of government policies and institutions in developing countries to build on this investment.

16. **Banji Oyelaran-Oyeyinka** | 2007 | ICTs and Industrial Development: Transformation and Employment Generation | *African economic Research Consortium (AERC)* | This framework paper presents a state of the art review of the role of Information and Communications Technologies (ICTs) on industrial development, structural transformation and employment generation. The paper focuses on how ICTs influence the nexus of economic development and industrial structure. There is increasing evidence of the connection of structural characteristics and industry-specific factors on the intensity of ICTs adoption in business applications (Oyelaran-Oyeyinka and Lal, 2004; OECD, 2006; OECD, 2002). The rate and ease with which ICTs are adopted is influenced not only by industry-specific factors, but also by the level of the country’s economic development. The reason countries at different levels of technological and economic development access and participate in the ICT revolution differentially is determined by three set of factors namely: the nature of institutions (formal and informal rules that provide incentives), the policies of the government including and particularly telecommunication regulation and the nature and knowledge base of key actors (individuals and organizations that populate sector and
countries). For instance, universities are key actors that have traditionally been the ‘gate keepers’ of technological knowledge and in most countries have been at the vanguard of ICT adoption. Another set of agents are industrial enterprises although these are a highly segregated group separated in terms of size structure (small, medium, large), ownership (Multinationals, and locally owned), and sector specificity (traditionally and so-called ‘hitech’).

17. **Carlos Magariños** | *December 2003* | *The Role of Industrial Development in the Achievement of the Millennium Development Goals* | *Industrial Development Forum and Associated Round Vienna* | In his intervention, the researcher pointed out that the MDGs consist of a number of quantitative goals agreed by the international community to relieve extreme suffering and deprivation. He argued that, although the task is huge, the major obstacle for this to happen is not financial or technological but has largely to do with political will. As a response to this challenge, he proposed three lines of action for the international community, including more development funding, UN reform and a renewed development agenda to articulate better the political dimension with the social and economic policy dimensions. He held that, for this to happen, policies designed to tackle urgent basic needs have to be integrated with policies aimed at building up the capacity to prevent recurrent emergencies through sustainable productivity growth. He regarded the work on both levels – the linking of the
political and the economic reform agendas, and of the economic and social agendas – as fundamental.

The researcher has highlighted the importance of UNIDO’s work on private sector development for capacity building and productivity growth. He argued that while the MDGs provide an opportunity to deal with the two-way interaction between breaking poverty traps and getting into a sustainable development track, the Poverty Reduction Strategy Papers (PRSPs) are one of the key national policy strategies to leverage the necessary resources. In this context, he argued that private sector participation in the PRSPs needs to be strengthened, stressing that it is essential for the LDCs to overcome this serious oversight if they are to succeed in stabilizing their economies, create jobs, develop exports, increase productivity and ensure social progress.

18. **Arcot Ramachandran** | January 2006| Improving Income and Housing: Employment Generation in Low-Income Settlements| Report of United Nation center for human settlement (UNCHS)| ISBN 92-1-131110-0| Institutional bottle-necks are in many cases a significant constraint to the implementation of the enabling approach suggested in this publication and proposed in the Global Strategy for Shelter to the Year 2000. Having a clear and well-defined strategy is not necessarily sufficient to ensure the right kind of institutional support. Changes in attitudes are required and this is very much more difficult to bring about. A further problem is that implementation requires numerous and
diverse agencies and individuals wholeheartedly to adopt the same supportive approach, and to co-operate in its implementation. It is very common for supportive policies not to be implemented at the local level. A major reason for this is the attitude of local administrators charged with implementation. There is reluctance among administrators to forgo standards and to relinquish their conventional regulatory role. They have not previously been expected to perform a catalytic role in support of local economic development and are likely to find it difficult to change their approach.

At the same time, communities rarely take it upon themselves to demand support and to identify ways of obtaining it. Community-initiated efforts to overcome constraints such as access to land, infrastructure and credit, are usually small-scale and experimental, as indicated by most of the examples in the previous chapters. Few have ever been adapted on a large scale or adapted as general policy.

To change this situation will take time. It will be necessary for politicians, professionals, technicians and administrators, in both the public and the private sectors, and at every level, to re-think their roles. This will not be an easy task. Many of the administrators and civil servants now in positions of responsibility were educated at a time when government's role was regulatory rather than enabling. They continue to perform essentially the same role and programmes will therefore be required to assist them to understand the implications of current
realities and their potential contribution in responding to them. The Global Strategy states that: "The bulk of new shelter demand, between now and the end of the century will be in the urban settlements of the developing countries. In addition to this, these cities will need to manage the regularization and improvement of large informally built settlements. This is a tremendous challenge and, at the same time, a tremendous opportunity. The processes will be largely guided by urban infrastructure and transport development policy which will need to be the highest priority on the agenda of urban managers."

Equally, if not more important, than these priorities, is the development of programmes aimed at improving the income-earning capacity of the urban poor combined with measures to increase their opportunities for economic activity.

19. A Report of United Nations Industrial Development Organization (UNIDO) 2006 |Creative Industries and Micro & Small Scale Enterprise Development A Contribution to Poverty Alleviation| Project XP/RAS/05/002, As a Joint Initiative by UNIDO and UNESCO Private Sector Development Branch Programme Development and Technical Cooperation Division| The three case studies presented in this document demonstrate the interest of the three countries for the Creative Industry (CI) concept, and indicate why and how these are establishing, or are interested in establishing Creative Industries projects that reflect and emphasize the traditions and characteristics of the country, and contribute to the improvement of the welfare of the communities. Also demonstrated is that governments must
recognize that an ample and rich cultural heritage is insufficient, and that left to itself this will not produce the hoped-for effects on socio-economic development. The institutional infrastructure must be deliberately marshalled to support the development of these industries. The education system and its values are to be strengthened and oriented to give a special emphasis to culture and creative activities, and encourage gifted children and adults to consider following the profession of artisan – all this finally providing support to the Cultural Industries concept as a source of national pride and identity, and of economic growth. To this must be added that the policies and strategies should be such as to lead to stronger private and public institutional support to MSEs. In Thailand the Royal family has been the initiator of the promotion of the value of heritage and as such has indirectly encouraged the formulation and implementation of policies that promote CI as a mechanism for rural industrialization, and thus economic and social progress.

20. Joanna Lewis and Ryan Wiser| November 2005 | Fostering a Renewable Energy Technology Industry: An International Comparison of Wind Industry Policy Support Mechanisms| Ernest Orlando Lawrence Berkeley National Laboratory| LBNL-59116| This article examines the importance of national and sub-national policies in supporting the development of successful global wind turbine manufacturing companies. We explore the motivations behind establishing a local wind power industry, and the paths that different countries have taken to develop indigenous large wind turbine manufacturing industries.
within their borders. This is done through a cross-country comparison of the policy support mechanisms that have been employed to directly and indirectly promote wind technology manufacturing in twelve countries. We find that in many instances there is a clear relationship between a manufacturer’s success in its home country market and its eventual success in the global wind power market. Whether new wind turbine manufacturing entrants are able to succeed will likely depend in part on the utilization of their turbines in their own domestic market, which in turn will be influenced by the annual size and stability of that market. Consequently, policies that support a sizable, stable market for wind power, in conjunction with policies that specifically provide incentives for wind power technology to be manufactured locally, are most likely to result in the establishment of an internationally competitive wind industry.

21. **Irma Adelman** | 1999 | a working paper | The Role of Government In Economic Development | California Agricultural Experiment Station
Giannini Foundation of Agricultural Economics | No area of economics has experienced as many abrupt changes in leading paradigm during the post World War II era as has economic development. These changes have had profound implications for the way the role of government has been viewed by development practitioners and their advisers in international organizations. There have been three phases in the dominant view concerning the optimal role of government in development. The Government as Prime Mover Phase: In the first phase,
lasting from 1940 to 1979, government was assigned a primary, entrepreneurial role. The intellectual roots of this view can be found in the writings of the pre-Marshallian classical economists and in their immediate post World War II followers, W.Arthur Lewis, Rosenstein Rodan, Nurkse, Singer, Prebish, Hirshman and Leibenstein. They viewed economic development as a growth process that requires the systematic reallocation of factors of production from a low-productivity, traditional technology, decreasing returns, mostly primary sector to a high-productivity, modern, increasing returns, mostly industrial sector. But, unlike the later neo-classical development economists who assume that there are few technological and institutional impediments to the requisite resource-reallocation, classical development economists assume that the resource reallocation process is hampered by rigidities, which are both technological and institutional in nature. Investment lumpiness, inadequate infrastructure, imperfect foresight, and missing markets impede smooth resource transfers among sectors in response to individual profit maximization and provide the bases for classical, structuralist approaches to economic development. Technological external economies in infrastructural and "basic" industrial projects would lead to coordination failures that would cause private agents to under invest in them.

22. **Jayant Sathaye and Ashok Gadgil | June 1999|** Role of Development Banks in Promoting Industrial Energy Efficiency: India Case Studies| Ernest Orlando Lawrence Berkeley National Laboratory| LBNL-43191| The Industrial Development Bank of
India (IDBI) is the premier institution in India purveying financial assistance to the industrial-sector projects. Its annual lending amounts to $6 billion. Recognizing the need to increase lending for energy efficiency and environmental management (ee/em) projects, the Asian Development Bank (ADB) provided a $150 million line of credit to IDBI. These funds were lent to cement, steel, paper, sugar and other industries. Accompanying the line of credit, ADB also provided funds for technical assistance to strengthen IDBI’s capability for the assessment of projects related to energy efficiency and environmental management (ee/em). The technical assistance (TA) focused on IDBI’s institutional capability, the procedures it follows for lending in this area, studies of ten energy-intensive sectors, and training and data needs to improve its lending. The findings of the TA reveal a need to (1) use ee/em indicators during IDBI’s appraisal, approval, and monitoring of projects, (2) increase the ee/em information resource base in-house and out-house ee/em experts, handbooks, computerized data bases – that IDBI staff can access, and (3) increase awareness of ee/em components among industrial borrowers. The sector studies show that there is at least a 20% lag compared to best practice for energy use, and that a significant potential, $1.0 billion, exists for investment in ee/em activities. These activities include (a) housekeeping measures such as improved lighting, variable-speed motors/drives, improving power factor, etc., (b) installing cogeneration and captive power generation units, and (c) changing manufacturing processes to more efficient and less polluting ones. Training and data needs were also identified which would
improve IDBI’s lending for energy efficiency and environmental management. This technical assistance project identified the potential for improving energy efficiency in ten industrial sectors of the Indian economy. It examined the barriers to improving energy efficiency and suggested ways by which IDBI could increase and improve its lending for energy efficiency projects. The study identified technical options that were common to all sectors, such as efficient lighting, high efficiency electric motors, pumps, compressors and drives, computerized process controls, waste heat utilization, and installation of captive power plants. In addition, it identified options that were process-oriented and thus specific to each type of industry.