4.1 Review of Past Experiences:

The developing countries of Asia, Africa and Latin America remained agrarian under the colonial rule. After attaining independence they embarked on industrialisation, to manufacture the goods they were importing. They imported machinery, semi-finished raw materials and components. The fiscal policies were modified to help this activity. Since they did not have the requisite skills, even the technicians came from abroad. The industries were started in metropolitan towns to take advantage of the existing infrastructure.

Instead of reducing dependence, this approach increased it as the equipments, raw materials and skills were imported. The fiscal policies helped to increase consumption of luxury goods produced locally, resulting in worsening of trade balance. Since the industries were concentrated in the metropolitan and port towns, the regional disparities increased and there was migration of labour from rural to metropolitan areas. Even the goods produced were of a lower quality and sold at higher prices causing smuggling of imported goods. The industries did not have the necessary research and development support for generating a self-sustainable growth and improvement. As a result there was no spread effect, as the industries were designed to use only the imported components. Among the countries studied China was the lone exception. It planned industries on a regional basis and
the objective of industrialisation was to support the primary sector. The industries in China provided employment to a large labour force and thus created an environment where both industry and agriculture grew together, supporting each other in raw materials, services and employment.

Nigeria having known the mistakes of embarking on import based industrialisation has continued it. Although Nigeria has a higher growth rate and higher per capita income (attributed to natural resources endowment in terms of oil), the disparities are rising. The Latin American countries despite having a favorable land-man ratio, and a high growth rate of GDP have serious problems of regional disparity and unemployment.

The experience of developed countries who have been trying to reduce regional imbalances by industrialisation has not been very different. The backward areas in these countries suffer form relative poverty and unemployment. The employment situation has not improved though these countries are spending large sums of money to give incentives and subsidies to attract industries. The broad conclusion that can be drawn from the international experience is that industrialisation as a tool for removing regional disparities has not succeeded.

India after attaining independence adopted planning approach to development. Planners became aware of regional differences from the second plan onwards.

The policies pursued by the state and the centre do not seem to have produced the desired result in spite of more than forty-five
years of planned effort. The developed states have grown faster than the backward regions even in the same states. Jobs have not been created to meet the employment needs of the fast growing population. Unemployment is increasing and so is the urban-rural disparity.

The development programmes in the country could be broadly classified into two approaches:

(a) Target group, and

(b) Area specific.

The target group programmes like small farmers development programme, employment generation programme were designed for the entire country and hence not meant for reducing regional differences. Evaluation studies have shown that these programmes tend to benefit better off persons amongst the target groups. Moreover, these programmes are operated in selected blocks in the states and recently an attempt is being made to integrate the various programmes under IRDP and spread it to all blocks. But the coverage in the blocks is inadequate.

The area specific programmes were operated in selected areas and the objective was to bring these areas on par with the rest of the country. The most important among the area specific programmes is the programmes for development of industries in backward areas. The programme started in early 60's as Rural Industries Programme in selected blocks. It has undergone several changes but the focus has always been on subsidies and incentives for promotion of industries in backward areas.
The backward areas have been identified for deciding for the eligibility of backward districts and large industries are established in selected locations where infrastructure is provided. The concept is that the large industries will open up opportunities for ancillaries and these will provide employment to the local people and the whole area will ultimately get the benefit. Expert committees were appointed and consultancy organisations were commissioned to suggest suitable industries and the possible ancillaries. The industries are not necessarily relevant to the district as most of the industries suggested are not based either on local resources or local entrepreneurship/skills. Further, the scope for ancillaries are very limited. The study revealed that the anticipated employment generation through the suggested industrialisation strategy is very small both in the main and the ancillary industries.

Though the studies were conducted for only four countries, the phenomena of industry, urbanisation, migration, unemployment are universal occurrences in almost all the developing countries. The differences are only in degrees. The countries which paid attention to regional planning and rural development had the minimum adverse side effects.

Hence one broad conclusion that can be drawn from the international and Indian experiences is that industrialisation, particularly the creation of large industry complexes do not solve the problems of the backward areas. Industry offers the solution only in those areas where the area is industrially backward, but has a good agriculture and rural development base.
Such areas barring a few exceptions are already industrialised with agro industries and other foot loose industries.

The study of the Indian and the other developing countries experiences has also revealed the following:

i) The categorisation of areas or disparity based on comparison with state averages, does not help in removing the disparity between different states. Likewise the classification of backward areas into A, B, C categories based on the level of investment in industry, to make backward areas eligible for highest level of subsidy, tends to attract the most capital intensive highly specialised industries, that has very little local linkages.

ii) Most of the subsidies and incentives that are in vogue, directly or indirectly tend to promote capital investment. The labour laws and the level of security and other benefits designed by the government for the welfare of labour tend to add expense and liability to the entrepreneurs and subsidies do not take care of these expenses. In addition to the capital subsidy each state has its own subsidies. The developed or advance states have more attractive subsidies and incentives and an efficient administrative machinery than the backward states. The state subsidies more or less ten to increase the import of central subsidies to reduce regional disparity. The developed states offer more concessions and this results in greater disparities between backward and relatively advanced states and districts.
(iii) The broad objective and goal for regional planning and development is to reduce the regional differences and bring the regions to approximately same level. Experience of both developing and developed countries has shown that this goal is unattainable, as it is not possible to reduce the growth of developed regions. For operational purposes it is necessary that the developed regions continue to grow faster than the undeveloped regions.

(iv) The developing countries need to redefine their regional development objectives and then develop suitable policy and strategy instruments to attain the objectives. Some of the objectives for regional development for developing countries could be employment generation and use of renewable energy, agriculture and rural development, development of rural industries, education and skill development. Large industries can only benefit the area if the area is otherwise developed and people have the necessary skills to get employment. Starting industries and industrialisation cannot be the main objective. Whether it is the right instrument for all conditions is rightly questionable.

Hence there is an urgent need for an alternative approach to the local area development and planning. An alternative framework is suggested in the next section.
4.2 An Alternative Approach:

After the identification of backward districts by the use of economic indicators, it is necessary to make an in-depth study of the resources and people's needs to develop suitable strategies. It may be mentioned here that the districts were carved for administrative purposes and not for development purposes. Many developed districts have pockets of backward areas and vice-versa. Even the backward district like Bankura has many backward areas where people rely on hunting for food, while in other areas agriculture is in the subsistence level. If the objective is to improve the living condition of the people in those areas then it would be necessary to have tailor-made development strategies for each area. The present approach of subsidy oriented industrialisation of backward areas neither benefits the local people nor the country as it involves investment and production at high cost. India along with other countries in Asia have an unfavourable land-man ratio. The focus of regional planning in the early stages of industrial development has to be on maximising use of the land and water resources, development of forest, cultivation of fallow and waste lands and generation of energy from bio-mass, wind, solar etc. An alternative strategy based on maximising the use of wastelands must be prepared. The case studies prepared for Bankura show that though the district is classified as a backward area and as 'No Industry District', the strategies needed to be used are different since different regions are at different levels of development of agriculture and also the skill formation of the people are different.
If schematic approaches and budgets are not suitable, then there is need to develop skills at the district and state levels to prepare realistic plan for each district or area and to prepare programmes and budgets for implementation. The plan has to be a long term plan of 5 to 15 years depending on the level of development in the area. Flexible approach in allocating funds has to be adopted. In the next section we discuss an outline of a framework for an alternate strategy for the development of backward areas. It also discusses the adaptation of the model for areas which are at different levels of development.

4.3 Towards an Alternative strategy:

We have observed in previous sections that many of the development strategies adopted have widened regional and interpersonal disparities. The basic objective of the alternative strategy that is explored here is to ensure economic growth and equitable distribution of the gains of economic growth amongst various sections of the population in the area. Such an objective for backward-area development has been widely endorsed by experts. An alternative strategy to fulfill the above objective may have to conform to the following desirable criteria:

(a) efficient resource utilisation
(b) harmonious development (spatial/sectoral/functional)
(c) self-reliance (local skill and resources)
(d) effectiveness
(e) dynamic adaptiveness.

121
To design a successful strategy, attention to both social and economic factors is needed. The desirable criteria problem as outlined is embedded in Social, Technological, Economic and Political (STEP) factors (see Figure 4.1).

Traditional resource allocation models of economics are largely guided by considerations of economic benefits as reflected through the market mechanisms, whereas a broader approach would enable us to evaluate resource allocation from both economic and social standpoints. Certain aspects can be taken as constraints. Such an approach takes into account the social benefits and cost of various alternatives within the framework of an integrative model which tries to encompass social, cultural, economic and political parameters. Solution available from the model should be responsive to the specific socio-cultural environment of the area, and should consciously recognize the availability of raw materials and skills, and the physical conditions of the specific backward area. This would mean the economic conditions must include physical factors like availability of resources and raw materials.

Given a set of inputs, the choice of outputs predetermines the optimal technology. Depending on the ultimate use of the output, if the characteristics of a product are changed, the new product can be economically produced locally with locally available resources, and the economic condition of the community will be improved.
FIGURE 4.1. INTER-RELATIONSHIPS OF MAIN FACTORS OF DEVELOPMENT.
For example, in the case of construction activities, if steel fibers and bamboo can be used as reinforcing materials instead of steel bars, then the change in product can reduce the pressure of steel demand. Production of these alternative products may be possible on a small scale locally, thereby benefiting the local people.

Thus by selecting the products, the technology can be influenced. Similarly, through technology, the nature of the product, the resource use and the spread of the benefits to the local community are influenced. The process is depicted in Figure 4.2.

In rural and backward areas, there is a need to promote energy use and a higher level of technology use in a gradual and phased manners so that the local community is prepared to accept such changes. As problem choice of technology becomes a sub-problem of the overall problem of selection of industrialisation and locational strategies. The problem of choice of relevant technology can be stated as follows:

(a) Given a product 'P', to select a technology 't' from the available technology package 'T' so as to make the production process efficient.

(b) Given a product set 'P' and a resource vector 'R', to design a technology 't' which is efficient and effective; 't' may be within 'T' or outside it.

At present, whenever the question of selection of technology is raised, it is normally from the available set of technologies.
FIGURE: 4.2 SELECTION OF TECHNOLOGY.

- Selection of New Technology
  - Examination of the End Use of the Critical Products
  - Selection of Technology
    - Use of Local Resources
      - Decentralised Localised Production (Small Scale)
        - Improvements of Economic Conditions of Rural Communities & Backward Areas
          - Increase in Receptiveness, Skill Formation in Community
            - Appropriate Conditions for Next Stage of Production

Regional Research in Science & Technology

Use or Local Resources

Decentralised Localised Production (Small Scale)

Improvements of Economic Conditions of Rural Communities & Backward Areas

Increase in Receptiveness, Skill Formation in Community

Appropriate Conditions for Next Stage of Production

Regional Research in Science & Technology
This selection process conforms to the statement of the choice problem as described in (a) above.

Of course, it can be argued in the case of (a) that the non-availability of resources at the local level and the consequent higher prices of non-local resources may ultimately lead to the choice of technology as defined in (b). But there is a fundamental difference between (a) and (b). In case (a), choice is confined within the available technology, whereas in case (b), the technology package is not fixed and new technologies may have to be explored and designed before the choice process is completed. It is often felt that the rejected technologies of the West are being dumped in developing countries.

There is a need for designing optimal technology in a given situation through research in science and technology if we accept the form (b) above.

In designing the appropriate strategy, we have to identify new products, explore new technologies and develop infrastructure of the area, and then decide suitable locations of production and service units. Given these requirements, it is highly unlikely that a backward area can be transformed into an economically developed region in one planning period of 5 years. Many of the development processes are linked sequentially, and therefore the entire strategy of development has to be completed in stages, and should, in our view, have the following seven components. Most of the components have to be performed in states which are sequential in time. However, some can be attempted concurrently.
(In our model, the components are phased over time in three distinct phases, each one taking approximately 5 years).

### 4.4 Components of the alternative strategy:

The following are the components of the alternative development strategy:

(i) **Increasing the bio-mass and agricultural production:**

Generally the backward areas (especially tribal areas) are also agriculturally backward, consisting of wasteland and water-scarce areas. It may be necessary in the initial stages of development to provide vegetation cover to retain soil moisture and to stop erosion of the top soil before serious attention can be given to improvement of traditional agriculture.

Thus, in the initial phase, increasing bio-mass production should receive priority attention. This can be achieved through the following: increasing agricultural production by improving use of water and waste land development; better use of other resources; increased supply of bio-fertilizers (by recycling waste and wasteland utilisation); and the introduction of social forestry and 'food gardening'.

However, this does not preclude taking appropriate steps in relatively better pockets of the underdeveloped regions to improve agricultural productivity through better agronomic practices and even by changing cropping patterns. Watershed development, wherever possible, can be undertaken at this
stage. In this strategy two crucial variables are land (quality of land) and availability of water. In designing a planning system these aspects need to be tackled most effectively by utilising latest tools available for analysis and design.

(ii) Small scale energy and chemical production using bio-conversion process:

This would apply the new technology of converting wood cellulose to a wide range of materials, and converting bio-mass into useful products by ‘pyrolyses’. The development in bio-technology would follow once the bio-mass availability was increased by step (1). A technological forecasting exercise has been undertaken in this area to determine the future possibilities of bio-technology development.

(iii) Development of physical infrastructure:

This is to be achieved by using energy saving materials technology for constructing infrastructure. This technology will include fabricating equipment for the energy industry, bio-conversion processes, recycling of wastes, pollution control, transportation equipment and creation of facilities for food drying packaging and storage.

(iv) Efficient production and local distribution of energy:

This is done by developing solar/thermal co-generation processes concurrently with an improved transportation system for gases and liquid fuels through pipelines (we are here
talking of small-scale distribution pipelines within the village). Low-cost solar technologies are not yet available in usable form for extensive application.

(v) **Dispersed industrialisation:**

This will be based on energy-saving materials technology, improved transportation and use of renewable energy along with creation of new towns/settlements in dispersed locations. This will facilitate development of better communications and spread of the beneficial effects of individual growth. An (LP) energy allocation model attempted in one district shows that the local sources of energy (particularly renewable sources) must be significantly enhanced for achieving the development targets in the region. Estimation of energy demand and the optimal manner of providing the needed energy also received attention.

(vi) **Exploitation of renewable source of energy wherever possible:**

This will be achieved by overcoming constraints through use of low-cost energy saving technologies for exploitation of wind-wave-tidal energy and hydropower resources. (This of course will be only applicable in special areas, and as such will be of limited use). Basically the idea is to use/exploit as far as possible all renewable energy sources.

(vii) **Development of health, education, drinking water and other facilities:**

This requires the equitable distribution of infrastructure facilities for health and education. It is necessary also to
improve the quality of services through better management practices, participation of the beneficiaries and use of modern information and communication technologies. Here location of facilities will be crucial in optimal utilisation of facilities available and in maximising access and use of facilities for the community as a whole.

These components can be sequenced in phases. These phases are interrelated. There has to be matching between phases and components consistent with the overall objectives of development of target area and group. Development of bio-mass production, generation of alternative renewable energy sources and water management for better agriculture should be priorities in the initial phase. Infrastructure development, including health and education (skill generation), should receive priority in the second phase.

The sequence of phases need not be considered very rigidly. Thus, though education and infrastructural development have been included in the second phase, some form of educational activities may receive attention in the first phase. Similarly, training for imparting primary skills in agro-factory and programmes having basic emphasis on nutrition and primary health can also be stressed. However, secondary and higher education and development of well-equipped health facilities may be stressed in the second phase. Thus there may be certain activities which can be initiated in parallel.
Industrialisation and modernisation of technology and production based on the gains of the first two phases will thus form the last phase in the alternative development strategy. This alternative strategy is phased in such a manner that the local poor people will be made ready to absorb the benefits of industrialisation and modernisation and will then generate a self-sustained development of the area.

Further, it may be clearly noted that this strategy does not exclude the establishment of mother industries (large-scale mother industries in backward areas based on the conventional development strategy). However, it is our view that such industries will not help the local area development significantly.

The comprehensive framework of backward area development incorporating the above ideas is developed in Figure 4.3. It may be noted that areas where different parts are in different levels of skill and local resource availability, the strategy of development has to be suitably modified.

When a district consists of distinct segments, differential strategies for different segments should be adopted. As an illustration let us take the case of a district having three distinctly identifiable segments as follows:

(a) areas with forest and significant concentration of tribal population;

(b) areas having craftsmen and local artisan with good native skills; and

(c) areas with large number of small and marginal farmers.
WATER-SHED DEVELOPMENT

CHANGE IN CROPPING PATTERN

ENERGY CROSS PLANTATION

BIOMASS PRODUCTION

DEVELOPMENT OF COAL TRANSPORTATION NETWORK

DEVELOPMENT OF SOLAR THERMAL GENERATION TECHNOLOGY

GROUND WATER RESOURCES DEVELOPMENT

PROCESSING OF BIOMASS

DEVELOPING FEEDSTOCKS AND INTERMEDIATES

DISPERSED SMALL SCALE INDUSTRIES

GENERATION OF DEMAND FOR AGRICULTURAL PRODUCTS

MAXIMISATION OF EMPLOYMENT IN AGRICULTURE

ENERGY SAVING MATERIAL TECHNOLOGY

DEVELOPMENT OF INFRASTRUCTURE

RENEWABLE SOURCES OF ENERGY

(HIGH PERFORMANCE POLYMERS / CHEMICALS FOR TREATMENT AND FABRICATION OF BIOMASS)

USE OF INDUSTRIAL WASTE (FLYASH AND GYPSUM)

DEVELOPMENT OF TRANSPORT NETWORK AND ENERGY SOURCES FOR SOLAR THERMAL GENERATION

COAL BASED FURNACES DESIGNED FOR SUBSEQUENT CONVERSION TO CO-GENERATION, PROCESSED SILICA PRODUCTS AND GLASS FIBRE/CERAMICS

SKILL UPGRADATION

INDUSTRIAL DEVELOPMENT: MODERNISATION (SILICA PRODUCTS/GLASS FIBRES/OPTICAL FIBRES/POLYCRYSTALISED SILICA AND OTHER PROJECTS)

SELF SUSTAINED DESIRED DEVELOPMENT PROFILE OF THE DISTRICT

FIGURE 4.3: SCHEMATIC OF AN ALTERNATIVE DEVELOPMENT STRATEGY FOR BANKURA DISTRICT

132
For areas having local artisans and indigenous skills, it is necessary to strengthen the skill base by upgrading the skill level through modernisation of equipments and tools, so that productivity of the local craftsmen is increased and the marketability of the goods produced is also improved. This will generate more surplus value and would improve the overall economic condition of this segment.

In respect of areas where there are more small/ marginal farmers and land-less labourers without any skill or craft knowledge it is necessary to create conditions of self employment through dairy, poultry and other non-farm based activities. Marketing support must be provided for the outputs of these activities. The distinct strategies are mutually supportive and these can be further backed up by creation of small scale industry based growth centre at a suitable location (locations). These should have adequate backward and forward linkages. The modified framework based on Figure 4.3 is shown in Figure 4.4.

To illustrate the utility of the above mentioned 7 step strategy, in the next Chapter an attempt is made to briefly present action programmes for the districts of Bankura and Purulia in West Bengal. These districts are relatively backward in the state and have significant proportions of SC/ST population. Due to paucity of data elaborate plans could not be prepared. However, the Chapter 5 provides sufficient details in terms of the translation of the alternative strategy as delineated above into a feasible action programme. Further details can be worked out once the strategy is accepted in principle.
FIGURE 4.4
MODIFIED FRAMEWORK FOR STRATEGY OF DEVELOPMENT FOR A DISTRICT

AREA 'A'
FOREST BASED

AREA 'B'
CRAFT BASED

AREA 'C'
UNSKILLED FARMERS

MODERNISATION OF SMALL CRAFT BASED INDUSTRIES; IMPROVED MARKET FOR PRODUCTS

SELF-EMPLOYMENT; NON-FARM ACTIVITIES

MARKETING SUPPORT DESIGN AND SUPPLY OF INPUTS.

CREATION OF GROWTH CENTRES IF FEASIBLE ALONG WITH FORWARD & BACKWARD LINKAGES

-134-