CHAPTER \textbf{XI}

\textsc{Perspectives}

- Nomadism
- Indian Artisans
- Urban Anthropology and Third World
  urban eco-social systems.
- Development Theories: Perceptions and
  Implications.
  - Post Colonial Third World Development
  - An Analysis of Theoretical Trends
    - Unilinear Theories
    - Modernisation Theories
    - Dependency Theories
- Systems Design for Micro-level Development Planning
  - The Need
  - Concept and definitions
  - Characteristics of a System
  - Utility of Systems Approach
  - Systems Design
    - Systems Analysis
    - Systems Synthesis
- Components of Systems Design for
  Microlevel Development Planning
CHAPTER - IX
PERSPECTIVES

The present study is an attempt to use available knowledge towards developing framework of an appropriate design for integrated development planning of fringe communities in Third World cities. For illustrative purposes, we have chosen Gaduliya Lohars - an ex-nomadic sedentarizing artisan community squatting on Delhi's roads for a number of decades.

In view of our specific empirical focus, a synoptic conceptual overview of 'nomadism', 'artisans', urban anthropology and development theories becomes imperative so that knowledge accumulated in these areas of social science knowledge can possibly be integrated to contribute to the analytic and synthetic concerns of this study.

NOMADISM

Nomadism has provided anthropology with a convenient 'prototype' of the traditional and the exotic for a long time. The spatial mobility of the pastoralists, not restricted by culturally defined permanent habitat, has fascinated a number of anthropologists in their pursuit for understanding non-western ways of life, resulting in a number of reputed ethnographic monographs (R. Dyson-Hudson 1972 provides a fairly adequate review of some such studies). But the bulk of nomadic studies have been concerned primarily with pastoral nomads to the
extent that nomadism has tended to be regarded as a synonym of 'pastoralism'. The study of non-pastoral nomads continues to be a relatively neglected area of anthropological research, an exception being some good work on European Gypsies. The content analysis of Nomadic peoples, a journal exclusively devoted to nomadism, reinforces such an impression.

The permanent influence of Eastern African cattle complex on anthropological studies of nomadism (e.g. Evans-Pritchard 1940, Southall 1976, Schilling 1961) has resulted in what is now-a-days known as the 'classical view' on nomadism.

"The classical view rested on several analytical elements:

1) The nomadism and pastoralism largely converged in these societies, (ii) the societies were largely static in form and impervious to history, (iii) as social systems they were largely autonomous and closed, (iv) they could be characterized by a collectivist and egalitarian ideology largely manifested in practice, (v) their attitudes towards production and exchange of livestock were marked by values borne outside of the economic domain; (vi) they represented a degree of equilibration which reasserted itself following disruptions of various sorts" (Galaty 1981) (enumeration added).

Underlying such classical view of nomadic social systems has been the implicit assumption that nomadism as a way of life precedes settled agrarian mode of living. The classic portrayals, in their descriptions of autonomous equilibrium systems,
generally excluded the interactions of nomadic people with settled communities from their analysis. A notable exception to such a trend was Dean Lettimo's works (1955, 1962) on Mongolian nomads. To Lettimo, "nomadism is not a primitive form of society but a rather late evolution. Farming and city-building peoples have always looked down on nomads as 'primitive', it is true; but this does not mean that nomads have reciprocated by looking up to the city and the farm. Far from it, there is a strong tradition among the nomads that they are people who have made themselves free from the drudgery of the peasant and the shut-in-life of the city dweller. They have good historical arguments on their side. Sheep and goats, cows and yaks, horses and asses and even the camel were all domesticated by men who already knew about farming—and not by primitive hunters who had thought things over and decided to breed animals instead of hunting them. The ancestors of the nomads—Arabs as well as Turks and Mongols—were men who decided to use these animals in order to break away from poverty-stricken farming into a more secure life as herdsman" (Lettimo 1962: 34-36). Lettimo further comments, for Mongol nomads: "alteration between the more and the less mobile phases—(and) the corresponding alternation between elite, aristocratic, heavy armed cavalry in small numbers and the light cavalry of mounted archers who represented a total mobilisation of the manpower of a tribe or people, as in the times of Chingis Khan, .... agriculture and trade with agricultural countries were now eliminated from nomadic life" (ibid., 39-41).
Academic anthropologists continued with their historical equilibrium worldview of nomadism till the widespread African drought and famine (late 60s to early 70s) which seriously affected East African nomads resulting in 'decisive break from past perceptions' (Swift 1977). Even though there was a general agreement on the magnitude of the problem created by the drought, viz., massive emigration from famine-stricken areas and death of livestock, the experts (social scientists) were sharply divided in their diagnosis of the problem. In one view, nomadic pastoralists were viewed as victims of their own indigenous traditions (Fossey 1972, Krasnecki 1975). According to another view, pastoral societies were seen as victims of national and international forces of change (e.g. Bourgois 1981, Copene 1975, Dahlin and Jort 1979).

Despite these explicit differences in analysing issues of pastoral nomadic development problems, there has started emerging a general agreement to incorporate ecological dimensions and the modes of interaction between the nomadic socio-cultural systems with their eco-systems into analyses of nomadic social systems. Influenced by the notions of dependency theories to a great extent, the new studies are now focusing upon interactions between economic processes, market mechanisms and the state apparatus to delineate nomadic socio-cultural dynamic processes and dynamics of change and development (see for instance, Balicki 1981, Calaby 1980, 1981, Herowitz 1972 Rigby 1979 and Salaman 1980). Furthermore, there is also a growing interest in the processes of sedentarisation of nomadic peoples (Arneson 1980, Salaman 1980, 1981).
The scholarship in Indian anthropology and sociology has, however, failed to adequately exploit the field of nomadism to enrich its information and theoretical knowledge pool. Such a situation of apathy to nomadic studies is really surprising as (i) existence of atleast two fairly rich ethnographic laboratories, viz. Indo-Tibetan border highlands and Rajasthan (that provide a varied diversity of nomadic groups both in terms of occupational specialisation, cognitive and cultural systems as also in their ecological nexus); (ii) availability of sufficient funds for research in this area; and (iii) state priorities for development of these groups, all indicate a continuing favourable environment for facilitating researches in Indian nomadic communities. Noteworthy exceptions are researches by K.L. Mishra on Kondhwalas, a non-pastoral nomadic community of Maharashtra and reports by P.K. Mishra and S.P. Ruhela on nomadic Gaduliya Lohars of Rajasthan. The overemphasis on ethnographic empiricism in most of these studies has not helped much by way of development of a theoretical-methodological approach to the study of nomadism in the Indian sub-continent.

**INDIAN ARTISANS**

The European scholar's interest in the study of Indian arts and crafts dates back to early years of East Indian Company in India. The magnificence of Indian arts and craftsmanship continued to attract a number of art historians that produced an impressive collection of books and articles in this area. To cite a few, J.P. Newton's (1886) report on
textile manufacture of India published by India Office, London, Duncan's (1896) monograph on dyeing and dying of Assam, Thurston's (1897) report on cotton fabric industry of Madras Presidency, Andrews's (1905) work on Indian carpet designs, Latimer's (1916) on carpet making in Punjab, Gupta's (1984) work on Thana silks, Kipling's (1901, 1906) articles on rustic ornamentation of Tete, Kipling's, Havel (1900) and Ellis (1902) books on ivory carving and Birdwood's (1880) works on Indian arts and craft all point out towards an immensely rich tradition of traditional Indian craftsmanship. In the area of non-ornamental industrial arts, the works are relatively few during the colonial period. Coomaraswamy's works (1907, 1913, 1914), however, provide us with a fairly adequate synoptic view of India's industrial crafts.

The social and cultural aspects of India's crafts were completely ignored in these accounts which focussed primarily upon artistic and technological aspects. The worsening plight of Indian artisans under the impact of British colonial economic policies and systematic destruction of Indian craft manufacture were made known to the west not by academic art historians but by a few of their own social critics like Marx and Engels.

In post-colonial India, India's crafts and craftsmen have formed the focus of social research by individual scholars as well as by the Registrar-General of India and other concerned official agencies like Khadi and Village
Industries Corporation (KVIC) and All India Handicrafts Board.

The works of H.K. Doss (1965) on importance of crafts in tribal economy, B.K. Behura (1964), B.N. Saraswati (1964), and Saraswati and Behura (1966) on India’s pottery industry; K.P. Chatterjee (1963), B.N. Roy (1957) on basket making and Jan Bronner (1978) on sandalwood carvers all delve upon social and cultural aspects of Indian crafts. The works by B.K. Roy Banerjee, D.K. Roy and S.K. Banerjee have been concerned with the problems of economic development of Indian handicrafts. As regards studies by the registrar-general of India, Saraswati notes, "the census organisation collected, in each state, only those arts and crafts which had a commercial potential or sales value" (Saraswati 1972).

Inspite of incorporating social and cultural aspects into their descriptions and analysis, those post-colonial anthropological studies of Indian crafts and artisans suffer from (a) reified boundaries of their micro-units of study, (b) neglect of temporal and spatial macro-context of micro-social systems, (c) dogmatic belief in postulates of cultural relativism and (d) neglect of penetration of capitalist market forces into the specific eco-systems of artisan groups which regulated dynamics of their subsistence and survival strategies. The recommendation for micro-level development were also mere reflections of macro-level policy rhetoric and were not systematically based upon series micro-macro dynamic interplay analyses of the specific condi-
of systemic relations between the urban-based heavy industrial organisations and artisan communities has left Indian social sciences with a legacy of unexplained worsening plight (to the level of extinction) of quite a few artisan communities and their crafts. Many of these groups, like Ramgarhias of Punjab, however, have been able to successfully upgrade their skills and have integrated their activities with modern industrial sectors; some others like silk weavers are now catering to the luxury needs of urban upper middle classes and export markets. And many others are either entering the growing reservoir of agricultural labourers or are entering the informal unorganised sectors of urban economy as unskilled/skilled wage workers. Only a few, like Gudaliya Lohars of Delhi, seem to be fortunate enough to somehow adapt independently to the rapidly changing techno-economic conditions (See Bhatia 1989 for a study of Delhi’s potters).

**URBAN ANTHROPOLOGY AND THIRD WORLD URBAN ECO-SOCIAL SYSTEMS:**

Anthropology is a fairly recent arrival on the urban scene. Having specialised in the study of relatively isolated small-scale social systems, the techniques, methodology and modes of analytical cognition which were developed for such studies are increasingly cognised to be not adequate enough for the understanding of urban social systems. The continuing efforts to adopt/modify anthropological methods to the study of urban areas has led anthropologists to look beyond its disciplinary barriers into domains of history, sociology, geography,
economic and political economy. The peculiar features of post-colonial third world urbanisation is increasingly indicating the inadequacy of inferences of other urban social sciences derived from the western experiences, in as far as these could provide a valid basis for a methodology and corpus of theory in urban anthropology.

The present situation in urban anthropology, therefore, is characterised by a common understanding among anthropologists that "cities are important research locales" (Fox 1977:1) but beyond such "agreement lie several different urban anthropologies, each accentuating certain characteristic features of anthropology and denying others" (Ibid: 1-2). The continuing developments in urban sociology, geography and political dynamics are all contributing to such a situation of flux in the urban anthropology with sharply divided camps.

The perceptions as to what constitutes the legitimate field of urban research in anthropology as also the methodology for conducting such researches are quite varied among urban anthropologists. At the profound risk of oversimplification, one may categorise these studies into:

1. Those focussing upon 'urbanisation as it is experienced by ethnic or tribal groups' (Cf. Robin, 1979: 115). Such an approach derived from Rofield's (1941) work on Incan society which identified 'folk-urban continuum' as a holistic and cross-cultural model for such investigations.
One may cite example of such early studies in Panton (1957), Mitchell (1956), Little (1963), Mayer (1962), Bruner (1959), Lewis (1951) and Hanpin (1950). These studies had other influences too. The influence of sociological perspectives on urbanism by Mith (1936), Yark et al. (1925) and others of 'Chicago school' is clearly discernible in these early studies.

(ii) Those focussing upon 'total urban systems'. These studies tend to be dominated by archaeologists and geographers. Such researches focusing upon the study of trade networks and locales of ceremonial centres in contributing to urbanisation can be exemplified in the archaeological studies by Ammon (1972) and Flannery (1975) and views of geographers like Christaller, Perry (1961), Coe (1961), Skinner (1964) and Blanton (1978).

(iii) An arena in which anthropologists entered with plenty of self-confidence is the field of urban ethnography. Even though the conventional anthropological methods for collection of qualitative data proved quite amenable in the area of such research, its theoretical repertoire was found to be quite inadequate in understanding urban micro-socio-cultural systems. The major thrust in academic urban anthropology continues to be in this field.
(iv) The urban anthropological studies in third world countries recently have shown increasing concern with the problem of urban poverty. Triggered by the 'culture of poverty' concept of Lewis (1968), such studies have rapidly moved out of cognitive cultural domains into systems analysis, ecology and political economy of urbanisation in third world countries (e.g. Safa 1973, 1982). The growing corpus of ethnographic studies of urban informal sectors is contributing impressively towards an holistic understanding of urban poverty which is emerging as one of the crucial areas for applied and policy-oriented social researches in the third world. The influence of dependency theories is quite marked in these studies which tend to primarily view urban poverty as a consequence of macro-national and international forces. The analytical restriction of dependency theories in their limitation to relate internal dynamics with macro-structures, however, continues to be a major obstacle for development of a really satisfactory theoretical perspective for understanding urban poverty.

(v) Another area of urban anthropological concern is the study of urbanisation involving physical movement of rural peoples to cities.

As in the study of urban poverty, this area of research is also characterized by sharply divided perceptions of legitimate goals of anthropological research. The
conventional academic anthropologists have been concerned with the micro-analytic processes of adaptation of these immigrants to the new urban environments emphasizing the altered social structures, ethnic and tribal identities and affective/associational ties of these urbanising peasants (see for example, Cohen 1969, Little 1985, Mitchell 1966, Leeds 1960). On the other hand, radical studies emphasize upon conditions under which sub-urban-directed migrations take place as also the failure of such migration decisions to mitigate the problems of poverty and quality of life for these urbanwards migrants.

Notwithstanding apparent differences in approaches and inferences, the data generated by these two types of urbanisation studies can be treated as complimentary, one providing the cognitive-cultural consequences of each urbanisation and the other focussing upon structural conditions as are facilitating such urbanisation. A valid theoretical synthesis of these two approaches (structural and cognitive) has the potential for not only accelerating our academic understanding of the third world urbanisation but can also provide us with valid premises for appropriate urban policy decisions.

(vi) Another area of research which has not greatly interested urban anthropologists is the study of urban social movements (Castells 1982). The conditions of political and economic flux in the third world cities are likely to generate more frequent organized expressions of mass
discontent, and which are sure to attract the attention of urban anthropologists. The well-developed sociological and anthropological analytical perspectives in the analysis of non-urban 'social movements' are likely to facilitate such studies.

It is hoped that a syncretic combination of micro-level cognitive-cultural-relational parameters and politico-economic structural conditions at macro level will result in relevant, valid and adequately integrated holistic analytic cognition of third world urban socio-social systems. This kind of analysis may also provide the basis for an appropriate macro-policy framework, for the third world urban systems, badly needed to improve quality of life for the majority of their inhabitants.

DEVELOPMENT STRATEGIES, PRESCRIPTIONS AND IMPLICATIONS

The understanding of various development models is crucial both for formulating plans for development of any socio-ecological unit as also for understanding and analysis of micro-level social reality of which the particular unit is a part of. Moreover, the unit as well as its macro-environment is likely to have already been modified by certain planned politico-economic developments, analysis of development models and approaches can help in placing the specific system in context. Therefore, a brief discussion of main trends in development models, theories, underlying postulates and their implications is desirable before attempting to formulate valid paradigmatic considerations for
integrated development planning of fringe communities in metropolitan areas in Third World Countries – the focus of this study.

POST COLONIAL, THIRD WORLD DEVELOPMENT

Even after the doom of political colonialism on this planet through nationalistic struggles, the plight of the vast majority of the human race has further deteriorated in terms of subsistence levels, environmental degeneration, political and social oppression and, in some cases, even barbaric forms of ethnocide and genocide. The efforts towards economic development in the new nation-states in Latin America, Asia and Africa have further aggravated the problems of the bulk of population so victimised in accentuation of perpetual poverty, exploitation and oppression at least in relative terms, if not also in absolute terms.

The creation of small islands of affluence has not been able to mitigate the problems of vast oceans of poverty and oppression as the anticipated 'trickle down effect' appears nowhere in sight. Rather, these islands of affluence have tended to suck in the resources of their neighbourhoods in a systematic fashion.

Such a phenomenon at macro-level in varying degrees of intensity is witnessed in most ex-colonial developing countries in spite of considerable human and material inputs
already injected into respective socio-economic matrices. The obvious reason for this is the choice of faulty development prescriptions by these societies. Intellectuals, planners as well as policy makers are increasingly becoming aware of the problem created by their chosen development paths which, instead of ameliorating the plight of humanity in these countries, have achieved the contrary.

AN ANALYSIS OF THEORETICAL ERTAS

The domain of development theories has tended to be largely dominated by macro-level models of development due to strong influence of social sciences concerned with macro-societal phenomena. Primordial influence of western economic postulates coupled with highly selective borrowings from social psychology, political science and sociology have tended to dominate development prescriptions in developing countries. Micro-level development efforts have tended to be neglected as micro-societal level social sciences, like anthropology, have tended to shy away from value considerations which are essential for any development efforts.

The multiplicity of views and theories of development and under-development render these difficult to be classified into simplified categories. Various elements of diverse theories and convergences/divergence of their implications cross-cuts each other quite often. However, one can broadly (at cost of over simplification) divide them into three streams, viz.,

(i) Unilinear Theories, (ii) Modernisation Theories, and (iii) Dependency Theories.
(1) Unilinear Theories: The linear theory of development assumes an implicit ethnocentricity that the least advanced countries will pass through the same route of the developed ones. The proponents of some of these theories have been Rostow (1960) and ironically also Marx. This view raised questions pertaining to nature, causes and objectives of development. It tended to focus on constraints and obstacles to development, particularly lack of capital, the removal of which will accelerate the natural path of development towards higher stages of growth. The implication of such an approach was the under-developed countries seeking these 'missing components' from developed countries. This doctrine, therefore, provided rationale for international aid, technical assistance, trade and private foreign investment.

The linear (or stages of growth) theories, sometimes also known as 'Industrial Revolution' approach, has been criticised on logical, moral, political, historical and economic grounds. The key argument against linear theories has been that the coexistence of more or less advanced countries is bound to make a crucial difference to the development efforts and prospects of the less advanced. The development efforts of less developed countries by adopting the strategy of international cooperation and regional specialisation of activities has been stultified both at national levels as well as micro-societal levels as the gains of such development (achieved at the cost of disintegration of traditional subsistence economies) have been in favour of multinational corporations to a great
content and a small portion to strengthen the local capitalist interests. As far as majority of people are concerned, the net gain seems to have been negative in respect of aggregate quality of life, control over forces of production as well as political-economic dependency to international and national capitalist interests.

The consequence of adopting such an approach to development has been the "moulding of patent solution to basic human needs and converting us to the belief that man's needs were shaped by the Creator as demands for the products we have invented.... Giving rise to under-development as a state of mind when mass needs are converted to the demand for new brands of packaged solutions which are forever beyond the reach of the majority. The ruling groups in these countries build up services which have been designed for an affluent culture. Once they have monopolised demand in this way, they can never satisfy these needs" (Illich 1988).

The long-term institutional implication of such a course of development has been the hardening of the perception of real needs into the demand for mass-manufactured products which most of people in less developed countries cannot afford. The translation of thirst into desire for soft drinks (Coca or Pepsi), need of locomotion into desire for private cars or motor bikes, hunger into desire for mass-produced noodles (Nissin), education for custodial care in form of a formal school system, health...
into demand of expensive curative system in shape of hospitals, 
vacation into white-collar underpaid jobs, entertainement into 
malodrous at cinemas or television and so on. Such a mental 
enslavement of common man by industrial capitalism of course 
also in directing their attention away from the basic necessi-
ties of human existence like adequate shelter, hygienic environ-
ment, clean drinking water, minimal preventive health measures, 
adequate nutrients in food, functional socialisation of the 
young and minimal effective relations in the family and social 
domains etc, most important of all, engagement in economically 
productive activities for all persons seeking employment, there-
by imparting them capability to meet their basic needs.

(ii) Modernisation Theories: Another set of theories which 
have tended to reinforce and complement the stages of growth 
linear views of development have been what has come to be 
known as 'modernisation theories' developed in the mainstream 
of western macro-sociological traditions.

In sociology, what has come to be known as sociology 
of development derives its roots from structural functional 
theories of society. The spread of these sociological theories 
to many Third World countries was a by-product of North 
American cultural, educational and economic influence during 
60s and 70s (pushed into Indian intellectual mainstream by 
Dr. 480 Funda). The basis of American sociological theories 
of development is Parsonsian structural functionalism, and in 
particular Parsons's pattern variables. The linear theory
places Third World countries on a continuum of development
whereby each stage can be measured according to various indices.
The modernization thesis takes the form that there are various
traits inherent in capitalism which are essential for modern-
ization to occur. Even though Parsons' influence has provided
impetus to these theories, the original ideas owe their origin
to Max Weber's theory of capitalist development which viewed
Protestant values as crucial facilitator for growth of
industrial capitalism in Europe.

The most familiar explanations during the 1960s and 70s
for continuing poverty, injustices and sufferings in the Third
World tended to revolve around the argument that the traditional
values of these societies were the main bottlesnokes to modern-
ization. The macro-level applied sociological analysis tended
to focus a particular society on Traditional-modernistic value
couples. Other popular analogous dipoles in social analysis
were those of Little vs. Great Traditions, folk-urban continua
etc. That such value-deterministic theories have tended to
assert a disjunctive intellectual influence on development is seen
in the fact that a work in which the traditional values were
seen as bottleneck to modernisation of Asian countries won the
Nobel Prize (Myrdal, 1968). Such an approach, however, tended
to prescrile adoption of Western values as a pre-condition for
industrial development.
The failure of international and national capitalist models to develop or modernise the socio-economic formations in Third World countries, which modernisation theories tended to explain away, has forced many Third World countries to re-examine their development strategies and theories underlying them. There have been serious debates among Asian development experts who convincingly proved that quite a few Asian values are as compatible to industrial development as Eastern values in the West (see, for instance, Atal & Piers 1977).

In contrast to Western-value prescriptions which Euro-American theories tended to recommend, an alternative viewpoint is emerging in some of the Third World countries which seeks to define developmental goals and methods in terms of indigenous value-structures (Kothari, R., ed 1975). The choice, therefore, in modernisation theories framework of development has to be made between choosing either an alien set of values in the name of modernity or to reinforce the existing indigenous dominant values. The latter choice will imply supporting and accentuating the prevailing social stratification which may be inequitarian economically as well as oppressive culturally. The consequence of adopting such a strategy has been strengthening of prevalent exploitative agrarian structures by forces of agro-capitalism in Indian countryside which has multiplied the miseries and sufferings of vast majority of agricultural labourers, small and marginal peasantry as well as artisan groups to the extent of their...
increasing systemic expulsion from countryside.

Parallel to Western sociological and economic theories of development, there have been psychological theories of modernisation and entrepreneurship. For example, one such view states, "a society with a generally high level of need achievement will produce more energetic entrepreneurs who, in turn, produce more rapid economic development" [Maclelland, 1961, p. 265]. The psychological N-ach... reductionism goes hand in hand with Protestant conversion and education, the former two generating high achievers. "N-ach as a major factor in development is of no consequence unless taken in conjunction with the structural constraints in operation" (Taylor 1979, p. 17).

(iii) Dependency Theories: The irrelevance of linear economic theory and modernisation value-deterministic sociological theories has been increasingly recognised by many Third World scholars. One such stream... aimed to explaining and analyzing under-development in Third World countries in terms of international conglomeration of rich-poor relationships which produces and maintains the under-development of the poor countries. The very existence of the rich countries makes it difficult for poor countries to choose a style of development. Various income, wealth and status groups in developing countries, who form the ruling class, perpetuate and consolidate the 'international system of inequality and conformity' [Streeter 1981]. The implication of adopting such an explanation of under-development of poor countries, therefore, is the
suggestion that developing countries should dissociate or delink themselves from the developed countries by a practice of isolation.

Such theories have been variously labelled as 'dependency theories' or 'theories of under-development' in contrast to dominant value-deterministic modernisation theories. Paul Baran and Frank's writings have tended to dominate these theories. Baran 1957, Frank 1967, Bernstein (ed) 1972. These theories tend to make use of Marxist concepts of 'economic surplus' and 'surplus absorption' in their treatment of capitalist penetration of Third World societies which generates and perpetuates under-development of those societies. The inadequacy of these explanations derives from their economic determinism which tends to conceal fundamental problems in the analysis of Third World social formations.

SYSTEM DESIGN FOR MICRO-LEVEL DEVELOPMENT PLANNING

The need
(a) It is being increasingly recognized that planning for human socio-economic development is not merely sectoral allocation of various available resources, but must also involve specification of operational goals and objectives, the process to achieve these and modes of monitoring and evaluation of the process and the results. In short, input-process - output paradigm to replace sectoral allocation approach.
(b) Human socio-economic-cultural reality is integrated and a sectoral approach to development is inadequate to achieve desired results. In fact, development in one sector may have negative unintended consequence in another sphere of human existence. Thus, to achieve most effective results, a piecemeal approach should be replaced by an integrated holistic approach.

(c) Conventionally, the development planning ventures have been /"Planner to Grassroot" efforts dominated by planner's considerations with little scope of micro-level guiding the specification of development goals and objectives. Such an approach is being increasingly recognised to be ineffective. Thus the replacement of top-to-bottom paradigm with either participatory mode of micro-level planning or with strong micro-level formative research base is essential to achieve real development at micro-level.

(d) The micro-level social phenomena which the development planning exercises endeavour to change do not exist in isolation. There is a constant dynamic interaction between various substructures of micro-level social reality, with their respective socio-political-economic environments and also between them. Thus, a micro-level development planning approach must involve the consideration of Micro-Macro dynamics in as far as these govern social dynamics as also the development efforts.
(a) The developments in science and technology make available the possibility of developing specific alternative appropriate technologies to facilitate more effective interaction with macro-economic systems. The choices have to be governed by a comprehensive analysis in so far as these can help improve the availability of material necessities for human existence as against status quo or adversarial tendencies.

(b) The accumulating pool of knowledge in various pure, applied and action-research-oriented social sciences can serve as an important knowledge-base in evolving pragmatic strategies for integrated development. But the over-specialisation and growing ethnocentrism in various social sciences is making inter-disciplinary communication increasingly difficult. A multi-disciplinary or better inter-disciplinary approach, governed by systemic paradigmatic perspective can transcend the deficiencies of various discipline-orientated development models.

These considerations in operational planning of a micro-level development effort can be optimally incorporated by adopting "SYSTEM'S APPROACH" - a concept borrowed from "CYBERNETICS" which deals with self-regulating and self-sustaining systems.

Moreover, the growing responsibility of systems approach in various social sciences as also macro-level planning institutions makes it convenient to formulate micro-level
development plans in the jargon of systemic paradigm to facilitate effective communication with some of the concerned macro-level institutions.

**Concepts and definitions**

Beginning of system's approach was mainly with Neimark (1942), developed by Bertalanffy (1951), Soulding (1956), Ashby (1952), Robb (1973), etc.

**Definitions**

(i) Webster's dictionary defines 'system' in 14 different ways, e.g.,

"a regularly interacting or independent group of items forming a unified whole", and also, "organized or established procedure", or, "a methodically arranged set of ideas, principles, methods or procedures," etc.

(ii) Bertalanffy (1951) says any arrangement or combination, as of parts or elements, in a whole.

(iii) Soulding (1956) provides a taxonomy of systems in terms of a hierarchy consisting of nine levels.

(iv) Robb (1973) says "an orderly arrangement of elements which work in a particular way: it can be a living organism or a cosmic phenomenon."

(v) Ashby (1952) says "each system, if it has to be a system, must have certain well defined variables which are closely interrelated. These variables may be
CHARACTERISTICS OF A SYSTEM

System: Broadly speaking, a system could be defined as an entity, conceptual-analytical or physical, which consists of interrelated, interacting or independent parts.

Supra System: Every system, except the largest, has a supra system (environment) and except the smallest, has sub-systems.

(a) Environment determines in part the performance of the system.
(b) The environment also influences the requirement schedule of the system.

ENVIRONMENT of a system is a set of elements and their relevant properties, which are not a part of the system but a change in any one of which can produce a change in the state of the system.

Goals: SYSTEMS SPECIALISE, while designing a system must determine and define system's objectives and their measures or performance. The set of specified objectives, called the "goal state", is the anticipated terminal state to which the system tends to move.

The compatibility of goal states among sub-systems and between the sub-systems and the total system and the supra decides the performance of the system for achievement and...
maintenance of the goal state.

Utility of systems approach

System concept provides a framework for visualising internal as well as external factors as an integrated whole — allows for recognition of the proper place and functioning of sub-systems.

The way to look at the whole system is in terms of plan (organized form of the interrelated components) providing a course of action that takes the system to the desired goal.

Therefore, systems approach requires that a piecemeal approach is replaced by an overall approach, viz. in terms of wholeness.

MAREYAKES (1971) says that systems approach is basically a way of thinking. It is an inter-disciplinary approach — it helps in developing a common pedagogy of communication across discipline barriers.

UNESCO (1973) document “Learning To be” suggests that “system analysis endeavors to decide on an optimal structure for any organisation, in a state of stable equilibrium resulting from successive adjustments prompted by the environment.... Systems analysis would appear to be an intellectual instrument which may be applied to an overall critical study of existing educational systems and is likely to suggest new scientifically calculated pedagogic patterns.”
SYST~M DESIGN

(a) System Analysis

Step 1 — The analyst states or is given objectives i.e.,
WHAT IS AND WHAT IS REQUIRED.

SPECIFIES the problem i.e., discrepancy between
current status and desired outcome = need assessment.

At this stage, the specialist specifies the problem
(system) and environment (context) and translates
'needs' into objectives keeping in view the absolute
environmental constraints and relative constraints.

Step 2 — Specialist analyses the complex network of inter-
action in the relevant system in relation with its
supra system and its influences on the system,
thereby specifying the requirement of each.

objective. In systems analysis, he describes
(i) the system and its environment; (ii) current
structures (sub), functions and roles;
(iii) identifies constraints (both absolute and
relative); and (iv) outlines alternative courses
of action.

Step 3 — Selection of approaches to reach the specified goals,
criteria are specified, approach vs. criteria
analysis performed = conduct of trade-off process
for selection of appropriate approach to meet
requirement of each objective.
(b) System synthesis (Designing the system)

Step 4 - Equipped with specified objectives, requirement of these objectives and approaches needed for achieving each objective. On the basis of these elements, he prepares an integrated plan of action or designs the system in terms of INPUTS, PROCESS (Procedures and transactions within the system, including decision and control mechanisms, i.e., feedback) and OUTPUT.

Step 5 - (Testing the system): To determine the validity of the outcomes of the system, he implements it on a simple or a simulated situation and determines which alternatives provide maximum efficiency and minimal cost. The output is assessed in terms of criteria identified and whether these satisfy the desired goals - if not - objectives and approaches are further examined and modifications/re-design carried out to meet the requirements → SELF-CORRECTING MODEL.

This way system synthesis is carried out and system is designed for large-scale application.
COMPOSITES OF SYSTEMS DESIGN FOR MICRO-LEVEL DEVELOPMENT PLANNING

(a) Systems Analysis

(i) Description of initial state of the system in terms of
(a) Structures and sub-structure of the target unit
(b) Environment (supra system) and its relationship
with various structures and sub-structures of the system
(c) Dynamics of relationships between various sub-systems
and between system and its environment.

(ii) Specification of terminal state of the system (goal
state), compatibility of goal states among sub-systems,
between the sub-systems and the total system and supra
system. Formulation of objectives of system's design
in terms of attributes of the goal state.

(iii) Identification of constraints/resources available.

(iv) Need assessment i.e., discrepancy between current status
(initial state) and desired outcome (final state).

(v) Assessment of required inputs and formulation of various
strategies to transform various sub-systems from their
initial states to final (goal) states.

(vi) Selection of approaches to reach the specified outcomes.
Specification of criteria. Approach vs. criteria analysis
performed. Conduct of trade-off process for selection of
appropriate approaches keeping in view the positive and
negative feedbacks between various sub-systems during
developmental processes.
(vii) On the basis of system's analysis, an integrated plan of action is prepared. This SYSTEMS DESIGN incorporating as many positive feedback mechanisms as possible and compensating for negative consequences specifies:

(a) **INPUT**

(b) **PROCESS** (Procedures and activities within the system, including decision and control mechanism - monitoring and evaluation procedures); and

(c) **OUTPUT** and also evaluation criteria and modes of evaluation thereof.

(c) **Testing system's design**

(viii) To test validity and effectiveness of the system's design, this should be first implemented on a sample or simulated controlled situation and determine alternatives that provide maximum efficiency at minimal cost. The output is assessed in terms of identified criteria, objectives and approaches modified, if required, and further decision/control mechanisms introduced to generate a self-correcting model.