A COMPREHENSIVE THEORY OF HUMAN SETTLEMENT: A FRAMEWORK FOR PLANNING

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SATYENDRA SINGH HUJA

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A COMPREHENSIVE THEORY OF HUMAN SETTLEMENT:

A FRAMEWORK FOR PLANNING

By

Satyendra Singh Huja

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ABSTRACT

A COMPREHENSIVE THEORY OF HUMAN SETTLEMENT

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by Satyendra Singh Huja

The field of human settlement planning has mostly concentrated on the question of how to do, and has quite often ignored the questions of why and what of human settlement. It has lacked the theoretical framework which may be capable of directing towards the understanding and answering of these basic questions. It is the purpose of this thesis to attempt to bring together relevant concepts related to the problem of human settlement into one comprehensive general theoretical framework.

It is the contention of this author that any comprehensive framework must deal with the material as well as non-material aspects of human settlement. This thesis attempts to bring together biological, physical, social, cultural, psychological and functional aspects and their interrelations into a meaningful framework. It also considers the basic dimension of unity of purpose, space, time, dynamics and organization, as an inseparable aspect of human settlement and its sub-systems of man, social institutions, culture, nature and artifacts. It also provides ten groups of perspectives for perception and planning of human settlement. Finally it attempts to apply this theoretical framework to the comprehensive planning process, so that this theoretical framework may become operational.

It is hoped that it will be of assistance in understanding and dealing with human settlement problems, and most of all, it will be of heuristic value for future thought and research into the theory and planning of human settlement.

Acknowledgements

My sincerest thanks to Professor Sanford Farness who was a continuing source of inspiration in the origin and completion of this thesis.

I also wish to thank my fellow students, the faculty of the planning school and my typist, who provided continuing cooperation and encouragement in the completion of this thesis.

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INTRODUCTION

The concern with the understanding of human settlement and its planning is expanding rapidly in response to the accelerating complexity of the society and the increasingly pressing and difficult problems of our world. This rising concern has produced a great deal of private and public planning. But the major thrust in the field of human settlement planning has been on the question of how to do it. The questions of what it is and why it is, have been often avoided. Thus there is very little understanding of what a human settlement contains, how it functions, what are the underlying factors, how must we meaningfully perceive any human settlement and how this knowledge and understanding may be applied to the planning of any human settlement to achieve desired results.

It is evident that the field of human settlement planning requires a clear conceptual framework for the definition of the forms and functions of human settlements and a clear conceptual framework for its planning. This thesis attempts to meet these needs of the planning profession. Thus the overall purpose of this thesis is to bring together all relevant, material and non-material aspects of human settlement in a comprehensive theoretical framework, and to provide meaningful dimensions and perspectives with which to look at the human settlement, and finally to attempt to apply this theoretical framework to an adequate planning process, so that this theoretical framework may become operational. But along with these purposes the most basic purpose of this thesis is its heuristic value, in bringing and raising fundamental questions of human settlement planning, for the

readers and the author.

The significance of any conceptual model is relative to its purposes. The nature and function of any conceptual model must be clearly stated and understood to meet the desired and needed results. In the field of human settlement planning a comprehensive conceptual framework is needed for identification, classification and utilization of relevant observational data.

It must be borne in mind that any conceptual framework is only a system of coordinated definition. Its worth lies in its utility in explaining and clarifying the topic of discussion. It is a heuristic device and a tentative system of working ideas in a conceptual framework. It is always, in part or whole, subject to correction, modification, and even abandonment if a more fruitful classificatory scheme emerges for the purpose of identification and coordination of the observed data, relevant to this topic of discussion.

The first part of this thesis sets up the basic background for the theoretical framework. The chapters in this part are not much related to each other but provide bases for the next two parts. The second part discusses the theoretical framework. This second part includes discussion of definition, components of human settlement, and their interrelations, functions, dimensions and perspectives for perceiving the human settlement. The third part includes a discussion of the planning process and the application of theory to the planning process.

This thesis has special orientation towards community and regional planning, done at all levels, but since planning knows no institutional bounds, much of what is said in this thesis is applicable to the other kinds of planning also.

In the overall orientation, this thesis is eclectic in nature, and

attempts to bring together concepts and information from various fields of study, relevant and related to human settlement planning.

PART ONE

CHAPTER I

STATEMENT OF PHILOSOPHY

The intent of this part is to clearly state the author's assumptions, biases, and understanding of the general nature of the human settlement and its planning.

It is assumed that there is one ultimate reality, which has natural regularity. This regularity can be known. The term known implies that this reality can be apprehended and not necessarily comprehended. It is also assumed that the different levels of human settlements are different levels of this ultimate reality. These different levels vary in scale and complexity of organization.

This reality is full of apparent contradictions but in spite of these there is an underlying unity. The reality is a dynamic unified whole which is more than the sum of its parts and thus to understand and to plan it, we must not only look at its parts, but also at how these parts are organized and how they function together in a space and time context.

This reality is static as well as dynamic, but the static part at one point in time is similar, but not the same, as the static part at the latter point in time. Thus it is being as well as becoming and is evolving to different levels. Thus it is an open system.

At any given point in time it has thesis, antithesis, and synthesis. Any one or more of these may be dominant at a given time, but all three are present at all times even though they may not be apparent. The level

and hierarchy of dominance and submissiveness is ever changing and evolving, but it has underlying unity. This reality has conscious as well as unconscious aspects which vary in quantity and quality.[1]

The reality has material as well as non-material parts, which are in continued interaction with each other. These two overall aspects can be classified as bio-organic, physical (inorganic), social (including economic), cultural, and psychological. These aspects interact with reference to space, time and dynamic organization.

This reality is subjective as well as objective (inter-subjective). Extent and variety of perceptions are crucial aspects in the definition of a given reality. This perception may be conscious as well as unconscious.

Means and ends are part of a human continuum and are elective to time and situation. Any aspect at a given time may be the means for one thing as well as the end for the other thing. Perception of the reference point is of crucial importance in the means-end continuum, and a certain object or act is the means or end relative to a given point of reference.

In the reality of human settlement, humans are central. The word central does not imply that other parts are insignificant or should not be given full consideration. Central implies focus of concern and orientation. Man is only one part of the whole of reality, thus to achieve the unity and harmony of whole, each part must be given due consideration.

Planning of human settlement is a process. Planning is an inherent and necessary part of the meaningful reality. Thus it is not the question if we should plan, but of how we should plan, who should plan, at what level, and towards what end or ends.

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[1] C. Hartshorne and W. L. Reese, Philosophers Speak of God (New York: Oxford University Press, 1956); information corresponding to that of Hartshorne & Reese, Lamprecht, S. P., Our Philosophical Traditions (New York: Appleton, Century, Crofts, Inc., 1955).

It is not possible to plan everything in every detail. Certain aspects of reality are pre-determined, certain aspects are very deterministic in nature, whereas certain other aspects are free to be fully planned. Usually it is a combination of these three, that is why every planning situation has built-in limitations.

Primarily the process of planning is an evolutionary one, but there are times and situations when a revolutionary scale of changes are required and do occur. Evolutionary and revolutionary changes vary in rate and direction of change. Revolutionary change requires thought and action which is not harmonious to apparent and existing norms. Change can be bio-organic, physical, social-cultural, or psychological. The last two types usually have the most lasting influences, whereas the first two are often most dramatic. Evolutionary planning can often achieve the results which are achieved by revolutionary planning, but this requires a drastic or long term change in rate and direction of movement. Revolutionary planning will not be needed if evolutionary planning meets the basic desires and needs of all members of a given society.

It is assumed that the overall planning should be done by the people, with the people, and for the people, in that order and importance. The role of the planner in this should be a combination: first, as a servant of the general public and its interest; second, as a leader, passive or aggressive; and third, as a technician. But for a planner to perform his role effectively, he must have faith in the ability of people to make meaningful and significant decisions. In this overall decision-making, a planner can and should provide assistance by clarifying and explaining the underlying assumptions, needed actions and possible consequences of the issues and decisions.

The last philosophical stand that the author wishes to take is

concerned with the desired state for human settlement and its planning. This state is "shanti." This word in English is somewhat equivalent to the word place. Shanti means not only the absence of negative aspects but also the presence of some positive aspects. It is a state of dynamic open-ended harmony or balance of various components of the human settlement. Thus it is a harmonious state of being, becoming a dynamic organization. This is the state of shanti.

CHAPTER II

OBJECTIVES

The overall objectives of this thesis is to provide a comprehensive and adequate theory for the understanding and planning of human settlement at various scales. In attempting to provide this, the author does not intend to give every detail of every aspect, but the emphasis will be to provide the general framework and some directions for the details of specific areas of concern. It is hoped that this thesis will provide a general orientation for further detailed studies, expansions and enlargements. Along with this overall objective, the following are some of the specific objectives:

A - To provide a comprehensive framework for the study and planning of human settlement

B - To define basic planning concepts

C - To clearly differentiate the various sub-systems of human settlement

D - To delineate and define each sub-system in structural and functional aspects

E - To explain the overall interrelations and processes involved in human settlement and its planning

F - To identify and explain major dimensions and perspectives, for perception, analysis and planning of human settlement

G - To develop a comprehensive planning process and explain its various steps and interrelations

H - To suggest applications of the comprehensive theory to the comprehensive planning process

I - To indicate directions for future study and research

It is evident that the objectives of this thesis deal with a large realm of concern about a rather large topic. The author's feelings in this attempt are fairly similar to the feelings of John Ciardi, in his attempt to translate Dante's Purgatorio. These feelings are expressed in the following lines:

> "Any theoretical remarks offered by a translator are bound to be an apology for his failures. Obviously no sane translator can allow himself to dream of success. He asks only for the least possible failure."

CHAPTER III

METHODOLOGY AND STUDY DESIGN

The purpose of this chapter is to delineate and explain steps taken in arriving at this final document.

The nature of the topic is such that there is very little information available in literature or in planning study. Thus it was necessary to achieve information and insights through other than usual means.

The first step was to clearly define the nature and scope of the problem. At the start it was discovered that this step required some detailed understanding of the problems and processes involved. Thus at the initial stage only the general area of concern was defined.[2]

The second step was to do the review of literature in the area of existing human settlement planning theory and practice. The results of this review are presented in chapter IV.

The third step was to formulate an initial theoretical framework, which further clarified the problem.

The fourth step was to write exploratory papers on the overall problem and detailed papers on various parts. Criticism of these papers was received from various professors at Michigan State University.

The fifth step brought together all the research and insights into one comprehensive and logical framework. This included information from the literature review, papers, and interviews. At this time the author

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[2]W. R. Borg, Educational Research (New York: David McKay Co., Inc., 1965), pp. 24-65, 360-375.

felt that he had adequate basic information to prepare a summary paper on the overall framework. The purpose of the paper was to formulate the bases for further interviews and data gathering. It included an introductory letter containing purpose and definition of the problem, an information request sheet, outline of the proposed thesis, explanatory remarks and diagramatic summary of the structure of human settlement, its interrelations and application to the planning process. This summary is presented as Appendix I.

The sixth step involved the sending of the above summary for critique by members of sixteen different areas of study and professions. They included psychologist, sociologist, social psychologists, communication, natural resources, electrical engineering, anthropologist, economists, biologists, geographer, architects, landscape architects, historians, social workers, community developers, and urban and regional planners. Some of these were interviewed also. The overall response was enthusiastic but often lacking in direct relevance. In this period other research and clarifying papers were also prepared.

The seventh step was the final reformulation of theory and its details. It was based upon research, and the above oral and written responses.

The eighth step was to do the final research, write a preliminary draft, get a general critique and to do the necessary modifications and write and present the final draft of the thesis which is presented here.

This methodology and study design is rather unorthodox and time consuming, but it was necessary to go through these steps due to the nature and the breadth of the topic under consideration.

CHAPTER IV

CRITERIA AND DEFINITION OF THEORY

To clearly understand and evaluate, one must answer some basic questions. What is theory? What is theory of human settlement and its planning? What are the bases for judgement of adequate theory? The discussion of these questions will become one of the bases for a critique of existing human settlement planning theory and also for the theoretical framework presented in this thesis.

Theory is an ever changing structure of interrelationships. These interrelationships are among abstract concepts which, to some extent, are founded upon observations. It can also be said to be a set of explanatory principles which aim at formulation of functional relationships between concepts and objects. More formally, a theory is a group of laws deductively connected. These laws then are propositions from which a great number of empirical consequences can be deduced. It can also be called a set of related assumptions concerning a relevant empirical phenomenon, which helps the user to move from theoretical to empirical observation. Theory usually has various levels of generalization, and in some systematic manner it attempts to move to higher levels of generalization and explanation. Often an ultimate aim of theory is the better prediction of a given phenomenon so that it can be controlled and/or directed. Theory furnishes additional tools for evaluation and encourages consistent thinking. It also provides tools to meet new and unusual situations and can make objective evaluation of these situations. It helps to resolve apparent contra-

dictions in the empirical results, and helps in making choices by pointing out important variables. In general it provides systematic expansion of knowledge. A good theory should have some utility, and should be sensitive to empirical evidence. It should have ability to organize the existing knowledge and also provide some boundaries. Most of all a good theory should have heuristic value, for stimulating significant thought and research in a given area of concern.[3]

Along with these basic criteria of an adequate theory, a theory of human settlement planning must also answer such questions as: What is a human settlement and its planning? How do its various elements relate in a structural as well as a functional manner? Planning is a normative as well as a positive science, with inherent normative dominance. Thus the planning theory must not only explain what happens, but also indicate why it happens, and how it can be improved. It must also justify its application to human affairs. Planning is a science as well as an art, thus any planning theory must also present a framework where science and art aspects can work together in a unified and harmonious fashion. By its very nature human settlement and its planning theories must be eclectic and contextual. They must draw upon a large variety of areas in context to environmental variables and relate the acquired knowledge and insights into a meaningful and comprehensible framework. An adequate planning theory must also relate concepts and constructs to the real world and to the existing planning theory and process. It must not only be descriptive and explanatory but also operational. It must also be capable of dealing with or at least providing directions to deal with the major, crucial, and significant problems of the society. Thus an adequate human settlement

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[3]M. H. Marx and W. A. Hillix, Systems and Theories in Psychology (New York: McGraw Hill Book Co., 1963).

planning theory must be clear in its intent, comprehensive in its scope, well organized and meaningfully related to the perceived and future realities of the world.

CHAPTER V

A CRITIQUE OF PLANNING THEORY AND PROCESS

The state of planning theory is much like the seven blind men and the elephant. Various parts of planning theory deal with the various elements of the human settlement without knowledge or understanding of the whole, with which they are attempting to deal. As for example, some only consider land use, others only consider economy, others only consider transportation and some only consider communication as the basis for planning theory. Thus the result is one incoherent and unrelated mass, which does not seem to get anywhere, because they do not know where they are going or where they wish to go.

It may also be questioned whether there is anything called planning theory, or whether there is any unified science of human settlement planning. Many scholars in and even outside the planning field have doubted the possibility of a unified theory, which may provide better understanding of the nature of the problems we are trying to deal with. These doubts are due to the complexity of human settlement.

Whatever theory does exist is very elemental and lacks internal as well as external comprehensiveness, because usually it is proposed by the specialists who have interest and concern with specific aspects. It is rather defensive in nature and follows events instead of leading and providing adequate knowledge of future possibilities. It is also only descriptive in nature. The overriding emphasis is on how to do it and not on why events happen or why certain acts should be done. The tendency is

to be simplistic in nature and attempt to describe the complex phenomenon in neat catagories and classifications. As for example, economic theories have dynamics of human settlement based upon the concepts of supply and demand without regard to socio-cultural variables. The other tendency is to attempt to deal with the organized complexity of human settlement.[4]

Most planning theory definitions are very weak, contradictory and lack comprehensiveness. In most cases the components of human settlement are limited to the material realm and that too, not adequately. Physical components usually dealt with are: land use, transportation and some discussion of community facilities. Many theories discuss nature only as a means or resource. In the western world economics is considered to be a major causative factor underlying the dynamics of human settlement.

Most theories consider components of human settlement in isolation and very little emphasis is given to interrelation, interaction and their consequences. Dynamic aspects of reality are dealt fragmentarily, ignored or avoided, due to lack of knowledge as well as interest. Dynamics is considered to be evolutionary and straight forward and thus the emphasis upon trend projections as bases for prediction. The underlying assumption, even though never stated, is that dynamics of human settlement favors to maintain the status quo. Most often the nature of dynamics of human settlement is considered to be deterministic without regard to interjection or possibility of influence of new or disregarded variables. Most theories of human settlement and its planning more than often disregard the dynamics of individual and group decisions, especially in the private sector. It is another unstated assumption that in the dynamics of human settlement planning, public decisions and policy dictate the private deci-

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[4]A. B. Handler, "What is Planning Theory," Journal of the American Institute of Planners, Vol. 23, No. 3 (1957), 144-50.

sions and policy. This is why most planning schools and agencies relate and emphasize planning as a public function. This assumption again and again proved to be fallacious and thus the results have often come out to be other than what were predicted, because in actuality, private planning decisions have shaped the form of urban development. Some of the well known theories of growth and dynamics are: central place theory, concentric ring theory, sector theory, choice theory, economic determinism, radial theory, public policy theory, physical design theories, etc.. All these theories assume growth as necessary, unavoidable and a desirable part of the dynamics of human settlement. Thus all these theories consider urban growth not as a socio-cultural process which can be directed by social action, but growth as a deterministic phenomenon.[5]

On the intellectual side, planning in the United States and other countries has been dominated by gradualism, idealistic optimism and pragmatism. All these trends have discouraged innovation and the bold steps needed to meet the rapidly arising problems of the modern world. Planning has attempted to become more and more rationalistic. But as Reinhard Bendix has said, "Faith in the scientific method has increased, but the belief in reason and human perfectability has declined."[6]

The planning process has been in existence for quite some time, but in reality it seems to be a misnomer. The word process, by its very definition, implies dynamics, but at present, the planning process has become

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[5]Warren Kahle, "Planning Techniques Related to Urban Growth and Their Municipal Policy Implementations" (unpublished thesis, Michigan State University, 1966), p. 70.

[6]J. W. Dyckman, "Introduction to Readings in the Theory of Planning: The State of Planning Theory" (unpublished paper, The University of Pennsylvania); information corresponding to that of Dyckman, P. Davidoff and T. A. Reiner, "A Choice Theory of Planning," Journal of American Institute of Planners, Vol. 29 (May, 1962), 100-15.

a set of rigid steps. In critique of the present planning process, the earlier step of definition of problem and inventory has become fairly well defined in relation to the parts which are considered, even though all the components of the human settlement are almost never considered. In the inventory phase it only involves quantitative factors and the qualitative factors are rarely considered. Inventory is often not related to space and time. If space is considered, it is only in physical terms, and social and psychological space is totally disregarded. In the analysis phase the components are analyzed as being independent, as, land use, utilities, etc.. Synthesis is most often lacking in quantity, quality and meaning. The goals formulation phase is one of the weakest ones, because there is no adequate theory of goals formulation. Thus, often the statement of goals is a meaningless generality and has not much relation to the needs and problems. The plan and policy phase is another important phase. Here the most important weakness is the definition of plan, which in most cases deals only with physical aspects of the human settlement and assumes that socio-cultural development follows the physical development, whereas in reality, the case is directly the reverse of it. As for example, T. J. Kent in his book The Urban General Plan, defines parts of the plan to be: living and working section, community facilities section, civic design section, circulation section, and utilities section. All of these sections of the plan only relate to the physical aspects of human settlement.[7] Usually there are no meaningful policies which are required to fulfill the plan. Neat phases of evaluation and implementation are probably the weakest ones. In most cases it is impossible to evaluate the plans, because they rarely give underlying reasoning, assumptions and their relation to the needs,

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[7]T. J. Kent, The Urban General Plan (San Francisco: Chandler Publishing Co., 1964), p. 93.

problems and goals. Usually there is very little understanding of the relation of the plan to the on-going implementation processes. The implementation phase lacks the understanding of the social engineering involved in this process. The implementation phase also often lacks in adequate strategy and communication with citizens as well as a variety of programs required to meet the needs of the society. In the planning process usually there is a lack of meaningful citizen participation. In overall terms the planning processes are inadequate to modify the plans and programs to meet the changing situations and the needs of the community.[8]

In the overall evaluation of the planning theory and process, the following are some of the major weaknesses.

First, it does not provide adequate enumeration or description of the components of the human settlement. It places too much emphasis on economic and physical aspects and very little emphasis on social, cultural, psychological, and ecological factors, in quantity or quality. Thus it lacks an adequate and comprehensive definition of human settlement.

Second, it does not adequately deal with the dynamics and interactions of human settlement in part or whole.

Third, it lacks adequate modes of perception for the planning of human settlement.

Fourth, it lacks in the theories of replanning of the communities and regions.

Last, the planning process lacks adequate synthesis, evaluation, implementation, flexibility, and citizen participation due to a lack of adequate planning theory.

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[8]A. A. Altshuler, The City Planning Process - A Political Analysis (Ithaca, N. Y.: Cornell University Press, 1966), pp. 1-13.

PART TWO

CHAPTER VI

DEFINITIONS

The purpose of this part is to clearly define and explain the major terms involved in this thesis. These terms deal with the basic questions in the planning field. These questions are: what is a human settlement, what is planning, what is the planning process and what is a plan? An attempt is made to answer these basic questions, and this thesis attempts to follow these and other definitions in its body.

Human settlement -

What is a human settlement?, has been a long standing question. The answer to this question depends on philosophy as well as on the perception of the nature of the world around us. Some have called human settlement people; some equate human settlement to buildings and streets; some consider human settlement to be a chain of supply and demand; some consider human settlement to be the government; some consider human settlement to be a concept beyond comprehension, thus a chaos; some consider human settlement to be only a symbolic entity; some consider it to be a social organization; some consider it to be a monolithic whole; whereas others consider it a collection of unrelated fragments; some consider a city to be a static entity, whereas others consider it to be dynamic.

All these answers to the original question have a certain degree of truth and validity, but it is evident that they all lack comprehensiveness.

A comprehensive definition of human settlement should include the above, along with other aspects. Any meaningful definition should be precise and concise. Following is a proposed definition of human settlement:

A human settlement is a dynamic organization of man, nature, culture, social institutions and artifacts, related in space and time, towards one or more human purposes.

Here emphasis is on the dynamic organization of elements, and static parts are taken for granted as parts of the elements. Space and time reference are also basic to the definition. Human purposes are a necessity for existence of any human settlement, because without these there will be no reason for its existence. It is important to realize that the unity of underlying and basic purposes is essential for the harmonious existence of the human settlement.

The variations in the nature of different human settlements are the results of quantitative and qualitative variations in dynamics, organization, space, time and human purpose.

Comprehensive framework -

It is an all inclusive structure to hold together all relevant concepts concerning the problem of human settlement and its planning.

It should include a discussion of material as well as non-material aspects. It should include structural as well as functional aspects. It should consider and interrelate static as well as dynamic aspects. A comprehensive framework should consider and interrelate biological (organic), physical (inorganic), social, and cultural as well as psychological aspects of human settlement. It should consider the quantitative as well as the qualitative aspect. It should consider past and present as well as the future in the time sequence along with various forms of spaces. It should be applicable to various scales of human settlements and various scales

of related problems, and be capable of relating to theory as well as reality.

It should provide guide lines for study, analysis and action, and be capable of providing insights into new hypotheses concerning the nature of human settlement and its planning. It should also provide a clear mode of attack on the present as well as future human settlement problems and be flexible to meet the changing needs of the community in different times. Most of all, it should interlink and coordinate various elements of human settlement and its planning.[9]

The comprehensive framework is not just the sum of these parts, but a meaningful organization of relevant parts into a harmonious whole, which is more than the sum of its parts.

Planning -

For a defintion of planning, many questions can be asked and similarly many answers can be given. Some of the questions are: What is it? What are its elements? What does it do? How does it do it? Why it does whatever it does? Towards what ends does it work?

Some of the answers are: It is a tool to implement the drives of the society. It is a tool to direct the society. It is the application of rational decision-making to social affairs. It is a social process. It is an administrative process. It is a comprehensive, long range and coordinative approach to solve the community problem. It is the evolutionary developmental institution of any given community and society.

These questions and answers have relevance to planning and provide us clues to its nature and definition. But all of these answers concerning the nature of planning are inadequate and lack comprehensiveness. The most

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[9]M. C. Branch, Planning: Aspects and Applications (New York: John Wiley and Sons, Inc., 1966), p. 302.

basic, but often avoided, question which as to be asked and answered by any field, institution or individual is, who am I? In this case, the who am I, of planning. The following is a definition which attempts at, but does not claim to exhaust, this and related questions:

Planning is the art and the science of environmental development, a process of direction of means through choices towards desired goals in a way that the components of a given human settlement can continue to evolve towards a more harmonious whole, as defined by the prople of the given human settlement.

The process of direction here is a conscious one, even though unconscious motivations play a part, but we cannot fully know or comprehend them. These choices are made towards rationally desired goals, but emotions, intuitions and judgements often play a significant part. Components refers to man, nature, artifacts, social institutions and culture. A harmonious whole does not imply lack of conflicts, but it is a state where conflicts are constructive instead of disruptive. What is the desirable harmonious state of the whole, is to be defined by the people.[10]

Planning process -

The planning process involves the three basic questions of: what we have or what is the present state, what we want or what is the present state, what we want or what is the desired state and how we wish to achieve it or what are our plans and strategies to achieve it?

In the planning process these basic questions are formalized and rationally organized to present a meaningful decision-making and problem-

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[10]P. Davidoff and T. A. Reiner, "A Choice Theory of Planning," Journal of the American Institute of Planners, Vol. 28 (May, 1962), 100-15; information corresponding to that of Davidoff and Reiner, J. W. Dyckman, "Introduction to Readings in the Theory of Planning: The State of Planning Theory" (Unpublished paper, The University of Pennsylvania).

solving process. Decisions at each step of the process are influenced by the previous decisions and they in turn influence the future decisions. This influence of decisions in a dynamic planning process is not only one way, but the later decisions and insights often require modification of previous decisions to effectively relate to the present situation and possible future situations. In this planning process various alternatives are considered and choices are made based upon given and decided upon criteria and principles. This is usually an evolutionary process of progression from definition to solution.

A good planning process must be a creative one and should adapt to the given problem and the situation. This creative process requires adaptability and flexibility. It is also very crucial to relate the various steps of the planning process to each other as well as to the planning theory, and most of all to the reality which we are attempting to plan.[11]

A comprehensive planning process must contain a knowledge of the general background of the problem, a clear definition of the problem, necessary inventories, a comprehensive analysis and synthesis of the data and its implications, a directive or goals, principles and criteria phase, a concept and solution phase, an evaluation and modification phase, and an implementation and continued planning phase. The people influenced should be involved in this process from the very start. Each step should be repeatedly reviewed, evaluated and modified accordingly to meet the changing needs and situations.

It must be realized that the planning process is a normative one and

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[11]A. A. Altshuler, The City Planning Process - A Political Analysis (Ithica, N. Y.: Cornell University Press, 1966); information corresponding to that of Altshuler, L. Reissman, The Urban Process (New York: The Free Press, 1964).

the value judgements, their reasoning and possible consequences should be clearly stated.

Plan -

A plan is a statement of goals, policies and alternative strategies along with their physical, socio-cultural and psychological representations and interrelations to achieve the desired goals.

Here it must be understood that a plan is not just of the physical aspects, but it must also include social, cultural and psychological aspects and interrelate them meaningfully. It should consider their quantitative as well as qualitative aspects. Any good plan is basically a working document and not a final product or the last word on the given topic of concern. The plan provides basic guide lines for solving the problems at present as well as in the future. These guide lines are based upon need, desires, resources, problems, and on planning standards, criteria and principles. These guide lines are also changed as a result of these changes. For a plan to be meaningful it must have a clear statement of assumptions, concepts, reasoning and consequences. For a plan to be effective it must have support of the people who are going to make decisions for its implementation. It must relate and accomodate to the changing realities of the world.

In the overall category there are two basic types of plans. The first, the most common ones, are directional plans. These plans attempt to guide the growth and change in the real world towards desired directions. These include land use, transportation, community facilities plans, etc.. The second, least understood, often forgotten and most crucial, are the operation plans. These are the plans which relate the direction plans to the real world. They should include information; education and communication plans; administrative policy plans; implementation plans; and review,

evaluation and adaptation plans.

Here the plan is represented as a dynamic and evolving document and not a set of rigid guide lines. A good plan must be capable of adapting to arising, changing needs and situations, without losing sight of its overall objectives.

CHAPTER VII

OVERALL STRUCTURE AND RELATIONS OF HUMAN SETTLEMENT[12]

The purpose of this chapter is to describe the overall subdivisions of human settlement and indicate their relations to each other. The overall subdivisions are presented at different levels of generalization to show logical progression. Interrelations of these subdivisions or sub-systems are described to indicate what is involved in the whole of human settlement. This breakdown is just one of a number of possible classification schemes and is provided for explanatory purposes. It simplifies reality into a multiple leveled tree. Here the author is quite aware that reality is not such a tree, but the tree is only a device to symbolically represent reality. In this representation there is horizontal and vertical, as well as diagonal interaction, and this interaction is multi-directional.

Levels of generalization -

Human settlement is a complex whole. To understand this complexity it becomes necessary to simplify it. In the definition of human settlement a general attempt was made to explain the nature of this complexity. Here an attempt is made to provide the overall sub-systems of human settlement. At an overall level of generalization, human settlement is one system. At a lower level of generalization the human settlement can be further divided into material, nonmaterial and mixed categories. Here

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[12]Many of the ideas in this chapter were derived from class notes and lectures of Professor S. Farness at Michigan State University.

mixed refers to a mixture of material and non-material. Man falls into this category. These three groups can be further divided into five basic sub-systems of human settlement. They are man, nature, artifacts, social institutions and culture.

In any human settlement man is undeniably the most important sub-system, who is the reason as well as the cause of human settlement. Here the category man includes the individual, and groups as well as total population. The next sub-system treated is nature. Man is part of nature but is separated due to the orientation of the problem and due to his importance in human settlement. Nature provides the basic environment for man and the evolution of human settlement. It provides the space and resources which are required to create a human settlement. The next sub-system is artifacts, which are the man-made modifications of nature, which are necessary for the survival of man. The next sub-system consists of social institutions, which provide a framework for human behavior and interaction in any given society. The necessity of adequate institutions is of utmost importance to the survival of any society. The last, but probably the second most important sub-system in human settlement is culture, which is the inheritance of institutions and controls the types, quantity and quality of human behavior which may or may not occur in any given society. These levels of generalization are shown in Figure one. Further differentiation and explanation of these five sub-systems is done and discussed in Chapter IX.

Mutual and overall relationships between sub-systems -

In an over view there are twenty-five possible lines of relationships among and between the five sub-systems. These numbered relations are indicated in Figure two. Twenty of these relationships are between these five sub-systems and five of these are internal relations of each sub-

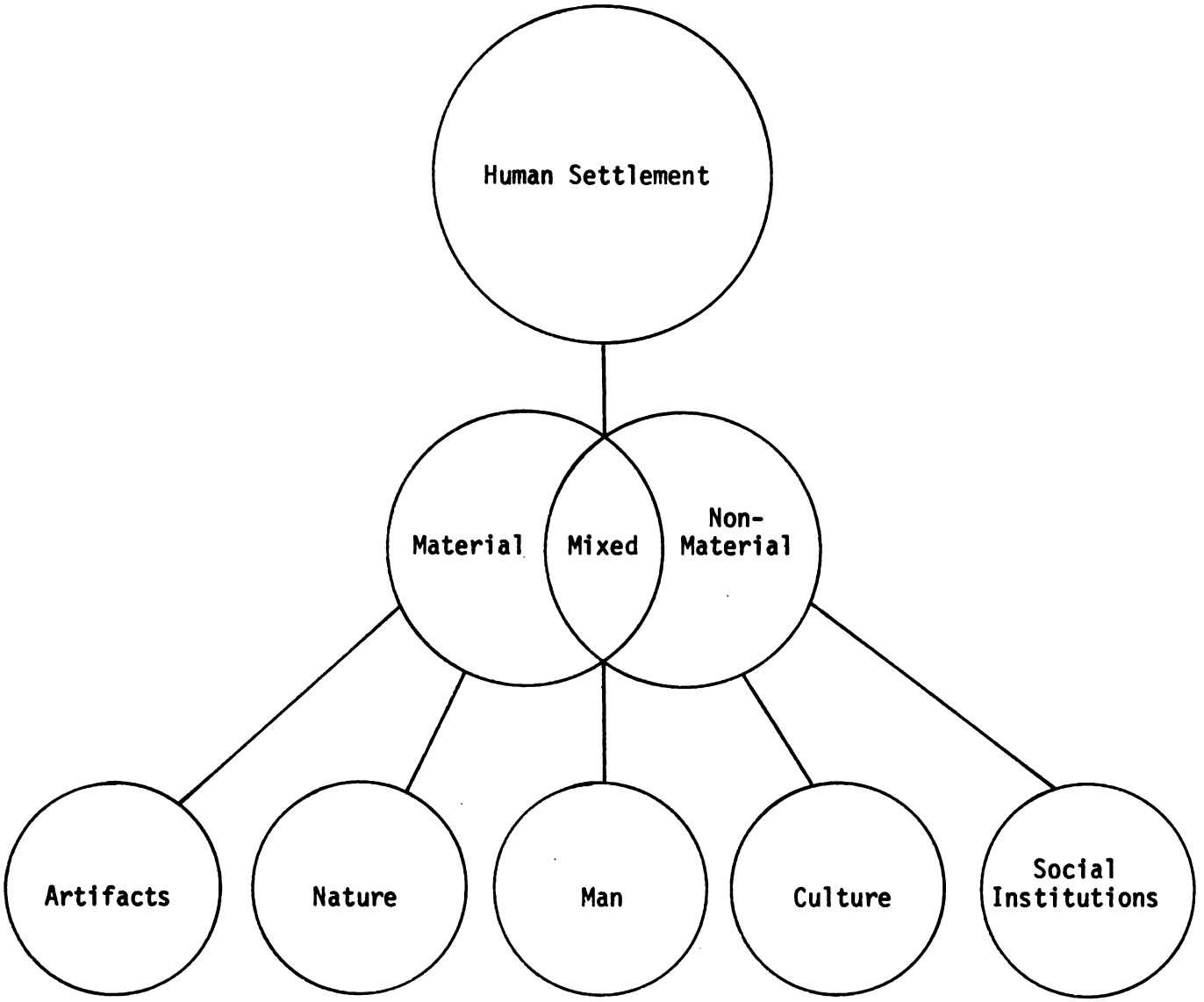

Figure 1 - Levels of Generalizations

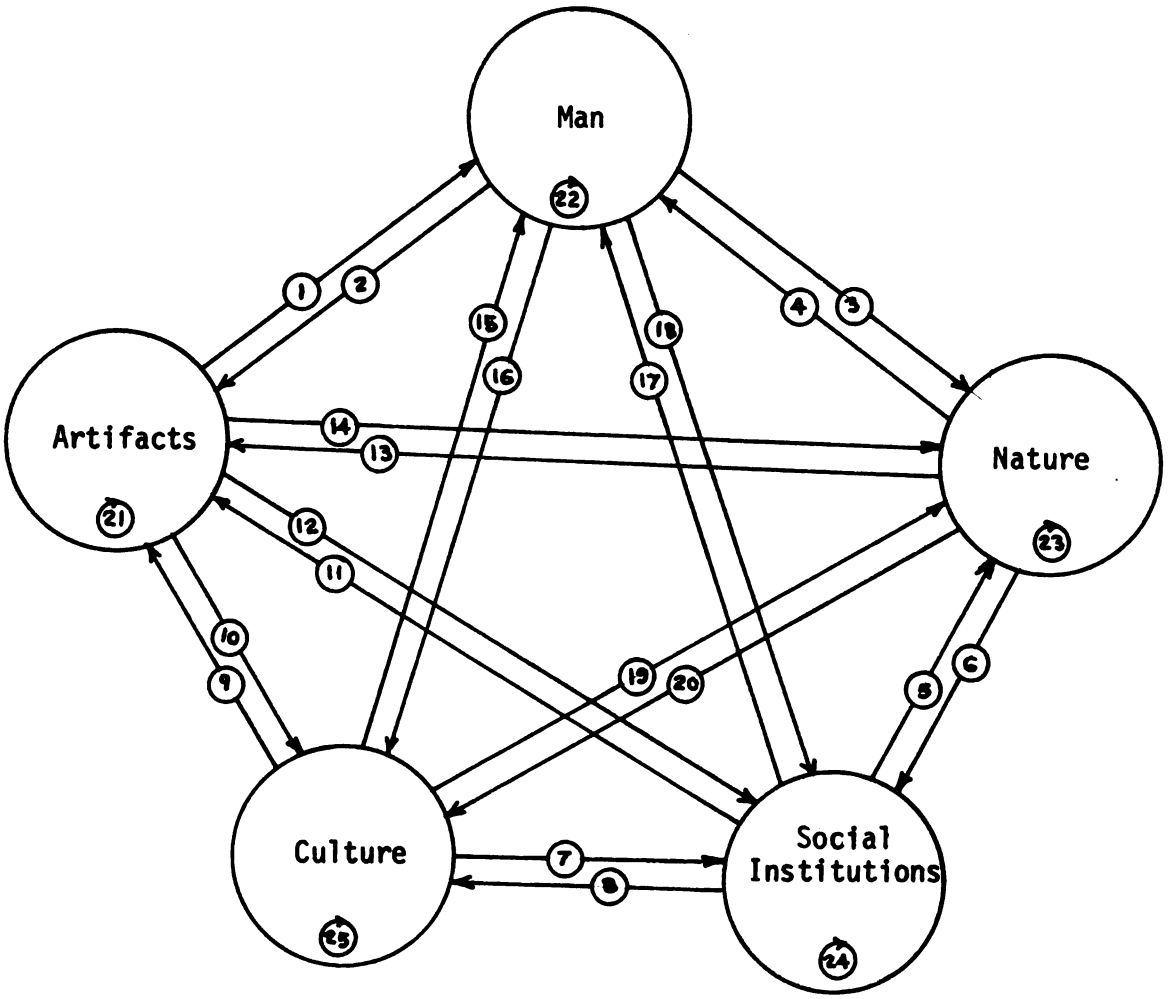

Figure 2 - Sub-system Relationship

system. Twenty relationships consist of ten pairs, thus two sub-systems have two overall relations, each from a different reference point. These overall relationships can be of various types. For example, if we take the hypothetical relations between man and artifact (theater) we have two overall relations and two internal relations. Number "1" is the relation from the point of view of the theater. Here the relation of concern might be, how to design the theater to seat the most people. The number "2" relation is from the reference of man. Here the relation of concern might be, how to design the theater to most conveniently seat the people. Internal relation "21" might be, given the conditions, how to design the theater's seating? Internal relation "22" might be, what level of convenience the people expect? Similarly the relations between other sub-systems can be delineated.

Besides these twenty-five internal relationships, there are also external relations. There will be six overall external relations, one overall relation of a given human settlement to the outside world, and five relations consisting of one for each sub-system with the outside world. These relationships can also be of various types. Thus there will be a sum total of thirty-one lines of relationships which we must consider in any human settlement. These thirty-one relationships may be desirable or undesirable, in part or whole. When these relationships are not satisfactory, we classify them disfunctions or problems which must be studied and dealt with in order to achieve a harmonious state. These relationships should be studied in quantitative as well as qualitative terms. In human settlement planning, study of these relationships is as significant as the study of the sub-systems themselves, because these relationships are part of the interaction and dynamics of human settlement.

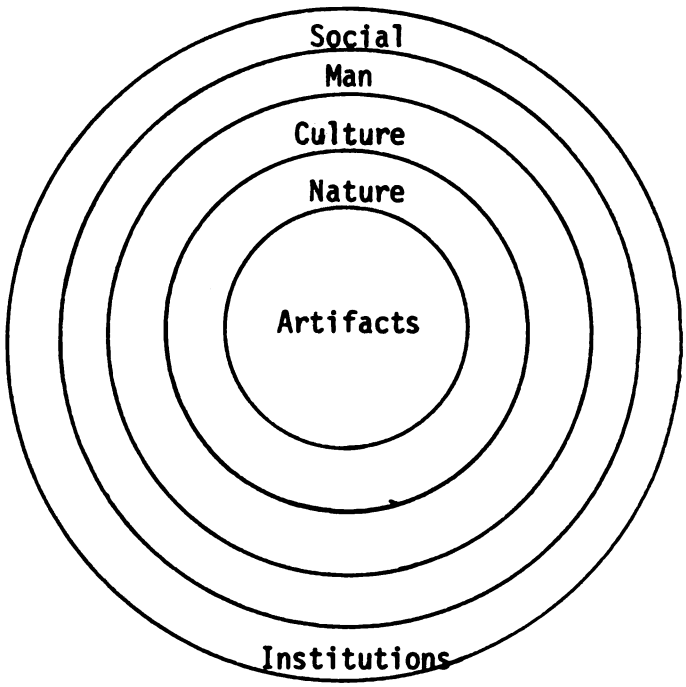

Figure 3 - Hierarchy of Dominance Relations

Hierarchical relations -

All of the five sub-systems are an integral part of a human settlement and are interdependent, as discussed above. Along with these relations there is a certain degree of dominance of certain relations in terms of importance. But of the five sub-systems, social institutions is probably the most dominant, because every other sub-system is part of one or more institutions. From birth to death man is a member of one or more institutions, starting with the institution of family. The question of whether man or social institutions (as, family) come first, is an unanswerable question, these two are reversable. Here it is assumed that the organization of individuals through social institutions is more important for the survival of any society and thus it is given a primary position in this discussion. In the order of hierarchical dominance, after social institutions and man, comes the culture of any human settlement. Culture provides beliefs, value and knowledge for social institutions which man utilizes as a guide for his behavior to meet his needs. Next comes nature and lastly artifacts. Man in his institutional framework, through cultural background, modifies nature into artifacts to meet his needs. Nature is a given part in the situation. Man's ability to modify nature into artifacts is limited by his motivation, perception, knowledge, cultural values and flexibility of the social institutions. It must be noted that this hierarchical organization greatly depends upon the purpose of the individuals and the groups involved. These relations are illustrated in Figure three.

Grouping of sub-systems -

From the above discussion it is evident that certain sub-systems are more closely related than others. Social institutions and culture are very

closely related, in that culture is the sum total of the inheritance of the social institutions. Additions or subtractions to culture are done in the existing or new institutional framework, culture in turn puts limitations upon the extent of change in social institutions. On the other hand, nature and artifacts are very closely related. Nature often puts limitations on quantity and quality of artifacts. Artifacts also have a very direct influence on nature, as the automobile and the resulting pollution of nature. Man falls between these two groups. Man is the reason as well as the cause of human settlement. Man is part of one or more social institutions and his behavior is guided by his culture. Man modifies nature into artifacts to meet his needs. These needs are defined, interpreted and articulated by socio-cultural values and knowledge. These relations can be biological, physical, social, cultural, psychological, functional or some combination of these. These relations are illustrated in Figure four.

In overall terms, different levels of human settlements are different levels of societies; these levels have the same basic sub-systems, but differ in complexity of relationships, hence they have a different nature of problems. This overall structure of sub-systems and relations provides the basic conceptual framework for the study and planning of human settlement.

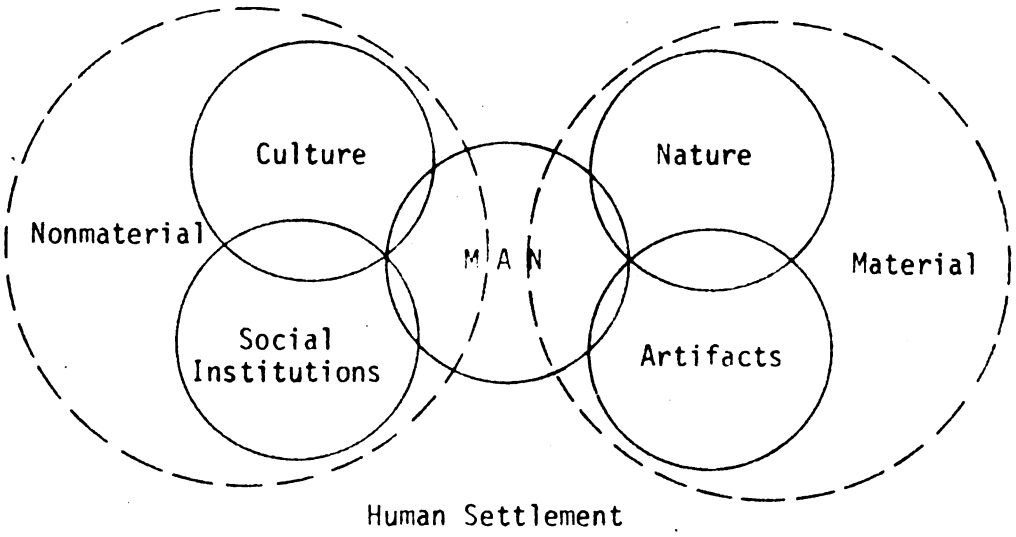

Figure 4 - Grouping of Sub-systems in Relative Proximity

CHAPTER VIII

DYNAMICS OF HUMAN SETTLEMENT

A dynamic process is a succession of states of a system at successive points in time.[13] It occurs in a space and time reference. The system of concern here is human settlement. Human settlement without dynamics is like a museum. Human settlements at every point in time are evolving to new and different states. One cannot look at the same human settlement twice, because it is continually changing, even though these changes may not be very apparent. Dynamics involves the functioning of a human settlement.

A basic question is what are the causes and the reasons for this dynamics. Various theories and models have been presented to explain this. Some are economic theories and models, some are gravitational models, some are communication models and some are social theories and models. These theories and models have contributed towards the understanding of this phenomenon, but in the opinion of the writer, they lack comprehensiveness.

It is the contention of this author that in any significant explanatory theory or model of the dynamics of human settlement, man has to be the central figure. Decisions and actions of man influence the nature of human settlement. Man is the major reason as well as the cause of the dynamics of human settlement. Human settlements came into existence due to the basic needs of man for food, shelter, and association. Man is the one

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[13] S. Z. Klausner, The Study of Total Societies (New York: Fredrick A. Praeger Publisher, 1967), p. 98.

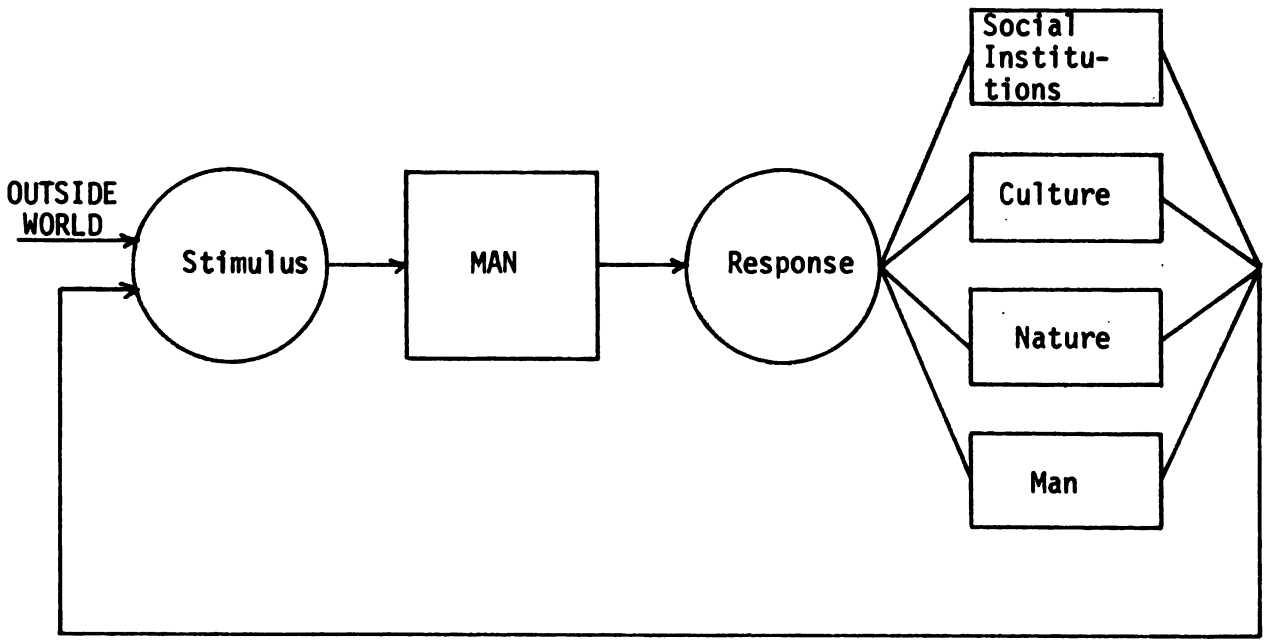

Figure 5 - Summary of Dynamics of Human Settlement

who performs various activities to maintain the human settlement. Thus the role of man in the dynamics is crucial. Other sub-systems also play an important part in the dynamics of human settlement. This dynamics can occur due to persons, social systems, environment, or by global change, but in all these cases the effects are directly or indirectly felt through man. Thus the basic question is how man modifies nature to produce artifacts through the mediation of the intervening variables of social institution and culture.[14]

Here, in understanding the dynamics of human settlement the stimulus-response approach is taken. Man is viewed as an intervening variable between stimulus and response. These relationships are shown in Figure five. In this explanation man is viewed as an individual and group as well as a population. Here in any given situation man may receive stimulus from six overall sources. The stimulus may be internal to man--from nature, from artifacts, social institutions, culture or the outside world. The stimulus creates a state of disharmony in man, thus a response is produced to achieve a new state of harmony. This response may involve modification of one or more sub-systems. The result is a new state of human settlement. This cycle continues eternally in the dynamics of human settlement.

A detailed expression of the dynamics of human settlement is illustrated in Figure six. In any given situation a human settlement is viewed as being at a state of relative harmony. At the start of the cycle a stimulus occurs and effects a personality or a group of personalities. Stimulus may be from an artifact, as a bomb attack; it may be from nature, as a snow storm; it may be from social institutions, as interest group pressure;

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[14]B. N. Varma, A New Survey of the Social Sciences (Bombay: Asia Publishing House, 1962), p. 185.

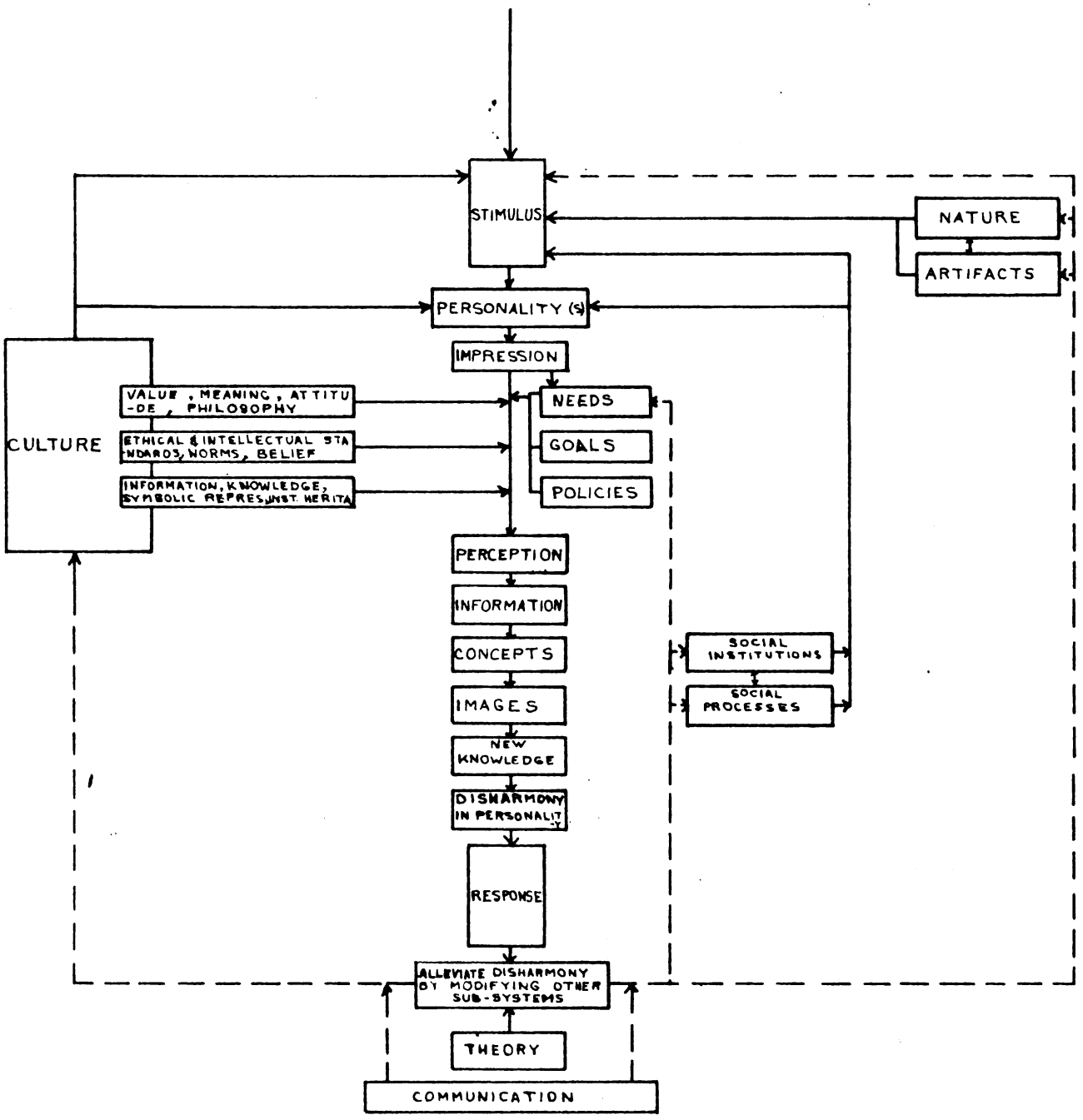

Figure 6 - Dynamics of Human Settlement

it may be from culture, as attitudes or values; it may be internal creative or destructive motivation; and lastly it may be a motivation from outside the realm of the given human settlement. The stimulus can be any one of these or some combination of these. In any case the stimulus makes an impression on personality or personalities. This is perceived after mitigation by the needs, goals, policies and culture.

Culture includes standards, beliefs, norms, philosophy, value, meaning, attitudes, existing information, knowledge, and symbolic representations. Culture plays a major role in how the impression of the stimulus is perceived in relation to needs and goals. This perception may be conscious or unconscious. When the perception occurs a bit of information is provided. These bits of information are combined to formulate images, which when brought together become new knowledge. This new knowledge concerning the state of being or becoming of a given human settlement creates disharmony in a personality or personalities and automatically requires some modification in the existing picture concerning the whole of the human settlement, and thus response is required to achieve a new harmony consistant with new knowledge.[15]

Response implies planning to alleviate the state of disharmony. Here various theories and models are utilized to prepare the strategy for modification, then these ideas or actions are communicated to other sub-systems. Achievement of harmony involves modification of one or more sub-systems so that the overall picture will be consistent with the new state of knowledge and information. For example, if the stimulus was a burning of a shopping area in a racial riot, one of the logical perceptions of such an incident

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[15]R. L. Meier, A Communication Theory of Urban Growth (Cambridge, Mass.: The M.I.T. Press, 1965).

will be that certain racial groups are not satisfied with their state of existence. Response to deal with such a perception can be provision of basic artifacts, such as housing, to meet the need of these groups. Other response can be to modify the institution of education which in due time will produce modification of cultural attitudes of the society, so that the society will feel an obligation to provide for the basic needs of these racial groups. As a result, in the future there will be no need for a racial riot and burnings. This cycle of changes will create new states in various sub-systems to an extent that an overall new state of harmony is achieved in the whole human settlement, which is consistent with the new state of knowledge. Thus a cycle of change will be completed. The completion of a cycle could be through an evolutionary or a revolutionary process. One or more new stimuli may occur again and thus a new cycle or cycles may be started. At any given time in point there are usually many cycles going on and are at various states of completion. This dynamic process is an integral part of the human settlement.

CHAPTER IX

SUB-SYSTEMS OF HUMAN SETTLEMENT

As indicated in previous discussions, there are, overall, five basic sub-systems. They are: man, social institutions, culture, nature and artifacts. The purpose of this chapter is to further discuss these five sub-systems and to bring out the significant points of concern. In the discussion of each of the components, an attempt will be made to define each component, to point out its relation and significance in the overall setting, to indicate its functions or roles, to indicate its further sub-divisions and their specific considerations, its dynamics and general study considerations. This discussion will attempt to be precise and concise and avoid detailed explanations, which the author feels are beyond the scope of this thesis.

Man -

In the human settlement, man is the focal point of interest and concern. Success of any human settlement is relative to the extent it satisfies the needs and desires of man. A high quality of life is one of the major aims of any human settlement. Man is the cause as well as the reason for the existence and growth of any human settlement. The decisions of man are most basic to the dynamics of human settlement.

Here the term man includes the individual and group as well as population. All three categories have different roles in human settlement. These three classifications are not exclusive but inclusive, implying that the individual may be part of groups as well as of the population. The

following discussion will only attempt to enumerate the various factors involved in each of the three classifications and will not attempt to discuss them in any detail.

1. Man as an individual[16]-

What is man?, is one of the eternal and unanswerable questions. Different people consider man in different ways. Here, the individual is considered in comprehensive terms. We must consider the individual as a biological, physical, social, and cultural as well as a psychological being. Following are some of the various aspects of the individual which must be considered.

Organism -

First of all man is a biological organism. As an organism, an individual has a lymphatic system, skeletal system, muscular system, nervous system, senses, glandular system, digestive system, respiratory system, reproductive system, excretory system, etc.. In the planning of human settlement, the needs of these systems must be met, so that man as an organism can survive and have vitality.

Soul -

The soul is an entity without material reality, regarded as the spiritual part of the person and having the function of thinking and willing. It is a hypothetical construct and not all individuals believe in the existence of such a construct. Effective planning of human settlement must also meet the needs of this aspect of man, even though it is hard to define these needs.

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[16]Many of the ideas and concepts in this part of the chapter originated from classmates and discussions in my undergraduate courses in psychology, taken from Prof. J. Muller at Roberts Wesleyan College, North Chile, New York.

Basic needs -

Man has basic biological, social and psychological needs. In the biological realm man has visceral, safety, sex, sensory and motor needs. In the social realm man has need for social interaction and communication, new experience, security, response, and recognition. In the psychological realm man has need for order and meaning, adequacy and competence, self esteem, love and relatedness, sense of identity and self actualization. The success of human settlements will depend upon how well planners provide for these needs. These basic human needs are further discussed in appendix two.[17]

Learning -

Learning is a basic and necessary step in progressing from organism to human. Learning is a hypothetical construct and is inferred from the behavior of the individual involved. When a stimulus is presented to a man, he gives a response and it is supposed that learning has occurred somewhere before the response. Between this stimulus and response there are some intervening variables, which are indicated in this learning situation. These include physiological variables, psychological variables, personality, motivational system, environment, habits, value system and faith, perception, cultural background and language system, and will. Here it is hypothesized that the first step in learning is unconscious insight, which is equivalent to unconscious learning. The next stage is of conscious insight, which is comparable to conscious learning, and then there is behavioral response.

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[17]R. E. Balier, Marriage and Family (New York: McGraw-Hill Book Co., Inc., 1953); information corresponding to that of Balier, J. C. Coleman, Abnormal Psychology and Modern Life (Chicago: Scott Forseman and Co., 1964), pp. 71-85; information corresponding to that of Balier, R. I. Sutherland and B. K. Smith, Understanding Mental Health (Princeton, N. J.: D. Van Nostrand Co., Inc., 1965), pp. 33-39.

Reward is not necessary for learning but it may be helpful for future remembering and for quicker learning because it can serve as a cue and facilitate the selectivity process. An understanding of the process of learning is basic to the understanding and modification of human behavior.

Socialization -

Socialization is the learning process by which the child acquires a cultural content along with selfhood and personality. It is a process of learning about self and the surrounding environment through interaction, identification and role playing. The process of socialization begins at home and is later taken over by the school and social groups and society as a whole. Through socialization, an individual learns the accepted modes of behavior in any given society.[18]

Personality -

Personality has two basic components of heredity and environment. Everything which is part of givenness and potential is classified as heredity. This includes physiological, sociological and psychological world surroundings and within man. Development of heredity potential depends upon environment interact to produce personality, which is a dynamic unity.

Perception -

This is the overall activity that immediately follows or accompanies energistic impingements on the sensory. It is a step between sensation and judgement or cognition. Perception is the immediate recognition of sensation. The process of perception involves classification, symbolic

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[18]A. W. Green, Sociology: An Analysis of Life in Modern Society (New York: McGraw-Hill Book Co., 1964), p. 127.

representation, evaluation, self consistancy, field determinants and interpretation. Perception is dependent upon the personality and cultural heritage of the individual, group or population. Most often perception of an object or idea is more important than the object and idea itself. Perception can be conscious as well as unconscious. Perception can be personal as well as social. Human behavior in any given situation is dependent upon perception.[19]

Motivation -

Motivation is a complex socially learned pattern of behavior, consisting of fluctuation, both in activation and directionability in a given situational context. This situational context involves both the external environment and various states of the organism.

Motivation is the key to the "why" of human behavior. It involves directionability and selectivity. The cause of any motivation can be physiological drives as well as social or psychological stimulus. Perception of stimulus, value, and meaning plays a major part in motivation. The level of motivation is greatly influenced by socialization and the surrounding environmental qualities. Motivation can be positive as well as negative. Motivation is a necessary condition for human behavior.

Attitude -

An attitude is an organized and consistant manner of thinking, feeling, and reacting with regard to people, groups, social issues, objects, ideas, or more generally, to any event in one's environment. Its essential components are thoughts, beliefs, feelings and tendency to react.

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[19]S. H. Bartley, Principles of Perception (New York: Harper and Row Publishers, 1958), pp. 20-47.

Attitudes are learned through the process of socialization and reflect values of the individual. The process of the modification of attitudes is very slow, and often requires a modification in basic assumptions of the individual.

Emotion -

Emotion is defined from three points of view. First, as an introspective awareness of an individual who reports or reveals; second, with reference to its outward expression; third, from the standpoint of the internal physiological changes.[20]

There are two significant things about emotion and feeling. First, it changes with the awareness that a goal is becoming more or less remote; second, states of affect can increase or decrease the intensity of motivation. The changes in the emotional state relate directly to the perception-performance sequence. Emotional satisfaction in human settlement is basic to healthy personality development.[21]

Roles -

Role is a way how any particular given status is to be fulfilled. Man performs various roles in his lifetime and within any particular day. Some of these are socially defined roles and others are personally defined roles. Individual personality is composed of a group of interrelated roles. As for example, a man may be a husband, father, livelihood earner, sportsman, etc.. In the planning of human settlement the needs of all roles should be considered and provided for, so that the balanced multidimensional

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[20]Philip L. Harriman, Modern Psychology (Paterson, N.J.: Littlefield, Adams, and Co., Inc., 1963), p. 126.

[21]T. M. Newcomb, Social Psychology (New York: Holt, Rinehart and Winston, 1960), pp. 103-104.

personality may develop.

Activities -

Activities are behavior patterns of individuals which occur in spatial patterns. Individual activities may occur with reference to families, institutions, firms, or as individuals. In overall categories there are productive, general welfare and residential activities. In more specific terms they include income producing, child raising and family activities, educational and intellectual development, spiritual development, social activities, recreation and relaxation, club activities, community service and political activity, and activities related with food, shopping, health and similar needs. Activities are directly related to various roles of the individual in any given society.[22]

Rights and responsibilities -

These are two inseparable aspects of man. One cannot be effective without the other. There are individual rights and responsibilities, as well as social rights and responsibilities of the individual. As for example, the individual has the right of freedom of speech, but it his social responsibility to use this freedom in a manner that does not deprive or obstruct the individual rights of other members of the society.

Resources -

In the planning of human settlement man also needs to be considered as a source of resources. Man has biological, physical, social, intellectual and psychological resource potentials. Provisions should be made to effectively develop these resources and utilize them. But the choice for

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[22]F. S. Chapin, Urban Land Use Planning (Urbana: University of Illinois Press, 1965), pp. 224-243.

development and utilization of these resources should be left up to the people. Society's role should be to provide the means and the effective environment for their possible development.

These are the basic aspects of man as an individual. In effective and meaningful human settlement planning all these aspects should be considered and planned for. The success of any human settlement will directly depend upon how we will meet and coordinate the various needs of various aspects of the individual.

2. Man as a group -

A group is an aggregate of two or more individuals which persists in time, which has one or more interests and activities in common and which is organized.[23]

Usually rules, statuses, and roles, control social relationships within the group. There is awareness of a common membership and reciprocity. There are primary, secondary and terciary groups. Primary groups are small and personal. Secondary groups are large, impersonal, formal and lack identity of goals. Terciary groups are pseudo-groups, which are maintained strictly for commercial relationships: book clubs, travel clubs, etc.. These three types of groups exist on a continuum from very personal to totally impersonal.[24]

Groups have many structural varieties. They may be large or small in size; well organized or semi-organized; contralized or decentralized; with monarchal, aristocratic, oligarchic, democratic, republican, tyrannical and other forms of government; stratified in various ways; long or short

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[23]A. W. Green, Sociology: An Analysis of Life in Modern Society (New York: McGraw-Hill Book Co., 1964), p. 48.

[24]Ibid., 50-53.

lived; solidary, antagonistic or mixed; integrated, unintegrated or mixed; rich or poor in means, meanings or quality of membership; and with or without inter-group relationships.[25]

Probably the most comprehensive classification of groups has been done by Pitirim A. Sarokin. In his overall classification, first, he has defined unorganized and semi-organized groups, which include externally united, "as if" organized; public; crowd or mob; semi-nominal plural; and purely nominal plural. His second classification is titled, important organized groups. Important organized groups are divided into uni-bonded groups and multi-bonded groups. Uni-bonded groups have biosocial groupings and socio-cultural groupings. Biosocial groupings include kinship, territorial, language, state, occupational, economic, religious, political, ideological and educational, and nominal groups of the elite. Multi-bonded groups include the family, clans, tribes, nations, castes, feudal estates, and classes.[26]

The above classification is useful for a comprehensive picture of groups, especially at a large scale of human settlement. For the purpose of most human settlement planning situations, the following major groups are of interest and concern.

The kinship group, which includes family and clans; interest groups; power group; special groups, which do not have power but their needs and attitudes must be considered--they include ethnic, minority, racial, old age, and other handicapped groups; social groups, whose concern is with social interaction; civic and cultural groups; livelihood groups, which

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[25]P. A. Sorokin, Society, Culture and Personality: Their Structure and Dynamics (New York: Cooper Square Publishers, Inc., 1962), p. 178.

[26]Ibid., 178.

include business and labor groups; service groups, which provide various community services; cooperative groups, which are mutual aid and often non-profit groups; institutional groups, which include political groups, etc.; and professional groups and associations.

The dynamics of groups involves the social processes of cooperation, competition, conflict assimilation and accomodation, which are discussed in the chapter containing perspectives.

In the study of groups one must consider their purposes, leadership, functions, power, status, structure, representation, characteristics, resources and needs. Groups should be involved in planning as well as implementation phases, because their decisions have a major influence on present and future growth and development of human settlement.

3. Man as population[27]-

Man as population involves the study of demography in its broadest sense. Boulding has defined population "as an aggregate of desperate items of individuals, each one of which conforms to a given definition, retains its identity with the passage of time, and exists only during a finite interval. An individual enters a population, or is born, when it first conforms to the definition which identifies the population; it leaves the population, or dies, when it ceases to conform with the definition."

In human settlement planning major demographic variables of concern include number; sex; age; physical characteristics; social characteristics and problems; birth and death numbers and rates; migration trends, rates

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[27]A. H. Hawley, Human Ecology--Theory of Community Structure (New York: The Ronald Press Co., 1950); information corresponding to that of Hawley, S. Mudd, The Population Crisis and the Use of World Resourses (Hauge: Dr. W. Funk Publishers, 1964); information corresponding to that of Hawley, G. W. Barclay, Techniques of Population Analysis (New York: John Wiley and Sons, 1958).

and causes; fertility and fecundity; distribution, in spatial context and in time context (day, night, week, month, year, decade, etc.); density; race; ethnicity; household size, income and characteristics; education; occupation; employment; school enrollment and projectives; mobility, in terms of social (vertical and horizontal), travel, household, institutional, regional and economic; time budgets; health, etc..

In consideration of these demographic variables one must consider trends, projections, and the overall ecological balance of the population in a given human settlement or region of concern.

A very basic question related to population is the question of optimum size. This can be said to be a size which makes possible the best quality of life. This further raises the question as to what is the best quality of life? Answers to these questions will depend upon cultural background and the philosophy of society and individuals. The resources of any given society will be an influencing factor, but not a determining factor. Often some forms of quantitative or qualitative controls are imposed by different societies on their population.

In a study of population one must consider quantitative as well as qualitative aspects. Furthermore, population must be considered in space, time and dynamic framework and planning should be done accordingly.

Social institutions -

An institution is an organization of several folkways and mores (and most often, but not necessarily, laws) into a unit which serves one or more social functions.[28]

Every society is organized into social institutions. These insti-

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[28]A. W. Green, Sociology: An Analysis of Life in Modern Society (New York: McGraw-Hill Book Co., 1964), p. 89.

tutions are integrated with one another, and beliefs, practices and knowledge crisscross them to create mutual support. In any human settlement all material and non-material aspects belong to one or more institutions. The term belong does not necessarily mean ownership. Different institutions have different functions, but they all are interrelated to each other. Problems are defined in an institutional context and they also provide the means to deal with these problems.

The institutional sub-system has some major characteristics. It involves distinctive roles, which are interrelated, so as to form a distinguishable social network of rights and obligations. This pattern of interrelations performs some important functions, thus the means to protect and perpetuate it arise in any given human settlement. These approved patterns, even though constantly changing, tend to become permanent and to be transmitted from generation to generation. Each member of any given human settlement is expected to play one or more roles in these institutions.[29]

There are certain basic institutions which all human settlements have. These include marriage and family, religion, education, economics, and politics. For the purpose of human settlement planning, there must be a more complete list, which is capable of providing a framework for comprehensive planning. Following are some of the major social institutions.

1. Family and marriage[30]-

The family is the institutionalized social group charged with the duty of population replacement and socialization. Marriage is a formal and dur-

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[29]James A. Quinn, Sociology--A Systematic Analysis (New York: J. B. Lippincott Co., 1963), p. 99.

[30]A. W. Green, Sociology: An Analysis of Life in Modern Society (New York: McGraw-Hill Book Co., 1964), pp. 389-409.

able sexual union of one or more men with one or more women within a set of specified rights and duties.

The overall functions of family and marriage are, creation of new members, channelization of impulse expression, and economic organization.

There are two basic forms of marriages, which are polygamy or plural mating and monogamy. There are various variations in marriage and the family. Usually there are certain restrictions on potential mates and size of the family. There is a division of labor, role of premarital and after marriage sex, duration, dissolution of marriage and family, and mode and hierarchy of decision making.

Family provides labor for production and is a major source of consumption. It is the first institution where man starts his life. Housing and related facilities are major artifacts of this social institution.

2. Religion and ethics -

Religion attempts to interpret the relation between man and the supernatural, rationalizes and makes bearable individual suffereing in the known world, enhances self importance, and attempts to knit the social values of a society into a cohesive whole.[31]

There are five major types of religious bodies. They include cult, sect, institutionalized sect, church and denomination. All these bodies have certain rituals, sacred objects and dogma.[32]

Religion can play an important part in the cohesion of any community. Religion is basically a means towards an end. It can be private as well as public; they vary in degree of formalization. Often religions have meeting

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[31]Ibid., 447-471.

[32]Irwin T. Sanders, The Community--An Introduction to a Social System (New York: The Ronald Free Press Co., 1958), pp. 258-259.

meeting places, symbolic artifacts and codes of ethics.

Ethics is standards of conduct and moral judgement. It provides criteria for behavior, human interaction, and judgement. Ethics can be personal as well as social. Often there is a sanction attached to the social ethics. Ethics can be religious as well as secular.

3. Education and communication -

Education is the process of communication of information and knowledge, to prepare the population for different roles and actions.

Education functions to complete the socialization process; transmits the cultural heritage; it is a status sifting device, and is the innovator of change. Education can be formal as well as informal, and public as well as private. Various levels of education include university, college, secondary, primary, trade vocation, apprentice, adult education, extension education, special group education, socialization and personality development at an informal level, etc..

Communication can be at a verbal as well as a non-verbal level. Non-verbal communication is more common, but subtle. Communication requires the sender having a purpose or orientation, who transmits messages through a channel to a receiver, who is in a position to adjust his attention. Various media of communication can be utilized in this process of communication.[33]

Effective education and communication are most basic to the effective dynamics of any human settlement. Modes of communication and meaning of a communicated message vary from culture to culture.

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[33]R. L. Meier, A Communication Theory of Urban Growth (Cambridge, Mass.: The M.I.T. Press, 1965), p. 11.

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[33] R. L. Meier, A Communication Theory of Urban Growth (Cambridge, Mass.: The M.I.T. Press, 1965), p. 11.

4. Art and philosophy -

Art is the symbolic representation of cultural heritage, social processes and issues, and personal perception. Art is basically a subjective and intuitive expression. The mode and media of expression greatly vary from culture to culture, from individual to individual.

Types of arts are listed under cultural sub-systems. These are inherited by a society and are institutionalized. Under the institutional framework new forms arise and old forms are modified by the social processes of the society.

Philosophy attempts to deal with the processes governing thought and conduct and the principles which regulate the universe and underly the reality of the world and life. It also deals with the philosophy of various aspects.

5. Science and research -

Science is an attempt to understand and explain the world on the basis of certain assumptions and given research methodology.

The fundamental assumption of science is that there is a natural regularity in the world. Scientific research is rational, empirical, objective, often controlled, quantitative, self corrective, relative, tentative and operational. Utility is its overriding criteria for value of any research.

The research process involves the definition of problems, formulation of hypothesis, data collection, testing and verification, theory and prediction. Research is a process of discovery, innovation and creativity. Science and its research methodology is institutionalized in society to systematically deal with the questions and problems.[34]

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[34]H. M. Marx and W. A. Hillix, Systems and Theories in Psychology (New York: McGraw-Hill Book Co., 1963)

6. Economy -

It is man's behavior in producing, exchanging and consuming the material goods and services he wants. It concerns the problem of using or administering scarce resources, so as to attain the greatest or maximum fulfillment of our unlimited wants.[35] The economy can be studied at a micro as well as macro scale. It includes considerations of production, distribution, consumption, management, administration, labor, finance, prices, standard of living and expectation, and the economic base. It also includes the considerations of ideology, supply, demand, knowledge, and technology, controls, needs, resources, input, output, dynamics of market, flow and stock, location, public and private policy decisions, and their influences in time and space.

7. Government and politics -

All through history, there has been no society which lacked government. Its structure may be informal as well as formal. In modern times government has become more and more formal. Government may be centralized or decentralized. At a higher level, the trend is towards centralization.

Government serves two very basic but different functions. First is the service function. Public enterprise provides goods and services to people under its jurisdiction, who are usually the taxpayers. The second function deals with the conflict. Wherever there are people, there are bound to be differences of opinion and interest. Politics is any kind of activity by which conflicts in matters of public importance are carried on.

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[35]Campbell R. McConnell, Economics: Principles, Problems, and Policies (New York: McGraw-Hill Book Co, 1963), pp. 3 & 25; information corresponding to that of McConnell, Charles M. Tiebout, "The Community Economic Base Study" (Supplementary Paper No. 16, Committee for Economic Development, 1962).

Government deals with conflicts by regulating through compromise, balancing interests, or by imposing settlement which the parties to the dispute have to accept. The government is supreme in areas of social life defined as public interest.[36]

In overall terms any government of human settlement has legislative, executive, administrative, and judiciary functions. In different ideological systems these four aspects play differing roles. In a democratic society people should be directly involved in the responsibilities as well as the privileges involved in governmental and the political process.

8. Human welfare and enjoyment -

The purpose of human welfare and enjoyment institutions is to provide for the basic needs of the community. This includes health services for various age groups. Health services should include facilities for the physical and social as well as psychological health. They also include social welfare services. These institutions also provide facilities for the individual, group and mass entertainment. They also provide active and passive recreation. Finally, they also provide for public safety in terms of police protection, fire protection, civil defense and emergency protection and armed forces for protection from outside intervention and major internal conflicts.[37]

These are the major primary social institutions. There are also secondary social institutions which serve a lower order of functions. These must also be considered whenever appropriate and needed. With changing

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[36]Edward C. Banfield, Urban Government--A Reader in Administration and Politics (New York: The Free Press, 1966), p. 1.

[37]Arthur Dunham, Community Welfare Organization: Principles and Practice (New York: Thomas Y. Crowell Co., 1962).

needs and growing knowledge, often existing institutions must be modified and sometimes even abandoned and new institutions be created which will meet the new situations.

Social institutions are in a continued process of social change. Social change involves the processes of cooperation, competition, conflict, accomodation and assimilation. These processes are discussed in the chapter containing perspectives.

In the study and planning of social institutions, consideration should be given to definition; survival and non-survival needs of the institutions; structure; status; roles, functions and responsibility; values, attitudes and meanings; customs and traditions; mores and folkways; goals; institutional decisions made; flexibility and possibilities of change; tools and means; trends and associations.

Culture -

Culture is the basic essence of any human settlement. Human settlement without a culture is like man without a soul. Culture is a sum total of inheritance of any human settlement. Individuals, groups and institutions transmit their heritage, through time and space. Culture consists of idealogical, behavioral and material aspects. In material aspects the only form is cultural and not the content or the matter. Culture is the socially transmitted system of idealized ways in value, meaning, attitude, philosophy, standards, norms, belief, behavioral pattern, knowledge and symbolic representations of artifacts, ideas, man, and nature.[38]

Culture has a very significant relation with other sub-systems of human settlement. Material as well as non-material environment is perceived

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[38]P. A. Sorokin, Society, Culture, and Personality: Their Structure and Dynamics (New York: Cooper Square Publishers Inc., 1962), p. 313.

through a cultural screen. Man's every thought and action is mediated by culture, thus the resulting form and pattern of human settlement depends upon the culture. To understand a totality or a part of human settlement one must isolate and understand cultural variables underlying the decisions and behavior.

Culture assists in personality development by providing a basis for socialization. It provides a framework for social integration of human settlement. Artifacts and ideas gain form and meaning from culture. Culture also provides framework for interpretation and modification of nature. It provides structure for the interaction of various sub-systems. Finally, it provides the framework for perception and the behavior of man in meeting his needs and desires.

Culture can be further subdivided into three groups. This grouping is done according to the logical relation of various components in each group and according to relative relations to ideological, behavioral and material aspects. To some extent they coincide with the overall groupings of idealogical, behavioral and material related components in each group.

Group 1 -

A. Value -

> It is that quality of object, idea or person, according to which it is thought of as being more or less desirable, useful, estimable or important. It has relatively enduring awareness in time, and emotionalized attitudes are attached to it.[39]

There are biological, physical, social, cultural, psychological and functional values. In any given case one or more are pre-

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[39]B. N. Varma, A New Survey of the Social Sciences (Bombay: Asia Publishing House, 1962).

sent. Often there are conflicting values in any given situation. A hierarchy of importance in values needs to be established, but this hierarchy will vary according to purpose and situation. Values play a major role in human response to various stimulus. Values of individuals, groups and population are the basis of goals for human settlement. Usually values have to be inferred from behavior and verbalization. Direct verbalization of values is very rare because of their general nature and often unconscious presence.

B. Meaning -

That which implies intent or significance. It can be literal or symbolic, conscious or unconscious. To effectively deal with any idea, object or person it is very important to discover and understand their meaning, only then an accurate value and perspective can be put on these. Achievement of meaning is the most basic need of man, and so to have a good human settlement, it and its various parts should have distinct meaning for man.

C. Attitude -

An attitude is an organized and consistant manner of thinking, feeling and reacting with regard to people, groups, social issues, or more generally, any event in one's environment.[40] Its essential components are thoughts, beliefs, feelings and tendency to react. Attitudes are an indicator of values and meanings and can provide valuable information for goal formulation.

D. Philosophy -

It is an investigation of the principles that regulate the

[40]William W. Lambert, Social Psychology (Englewood Cliffs, N. J.: Prentice-Hall Inc., 1964), pp. 50-69.

universe and underlie all reality. These are statements concerning the nature of man, environment, and their interrelations. The philosophy of the people of any given society has great influence upon how the people deal or do not deal with the realities of the world. Often changes in basic philosophy are required to effectively deal with the problems of human settlement. The rate of change of this other component in this group is very slow and time consuming.

Group 2 -

A. Ethical and intellectual standards -

These rules are the basis for personal, intellectual, social, and cultural conduct and pursuits. These provide a definite criteria for the judgement of various kinds of interpersonal behavior. They provide ideational orientation.

B. Norms -

These are customary or traditional ways of behavior. These include "folkways," "mores" and "laws." These three vary in degree of formalization by the society. The more formal it is, the more it is tied to the structure of society and there is more possibility of its carrying some form of sanction. Norms decide the patterns and nature of behavior and interaction. The norms of the United States ask and allow very aggressive and self centered behavior, whereas the norms of India ask and allow very little aggressiveness and emphasize group centered or other centered behavior.[41]

C. Beliefs -

These are the basic assumptions of an individual, group or society which are considered to be true. Interpretation of situa-

[41] A. W. Green, Sociology: An Analysis of Life in Modern Society (New York: McGraw-Hill Book Co., 1964).

tions and behavior is based upon these beliefs. Often these basic assumptions can't be challenged on rational bases, because they have emotional involvement. These assumptions become bases for life structure.

Group 3 -

A. Information -

It is the content of a massage or a signal which permits the recipient to make what he feels to be better choices in subsequent behavior.

Information is a necessary item for making better decisions. The more the information the more the probability for better understanding and decisions, but it also increases the probability for confusion. It is not only important to have information, but it is more important to have information relevant to the problem. Communication of information is basic to the dynamics of human settlement. Information may or may not be meaningful. The rate of information flow varies in different cultures and at different times.[42]

B. Knowledge -

It represents stored information, remembered primarily because it is believed that sometime in the future it might be useful. It plays a major role in the development and fulfillment of goals. Knowledge is the most basic ingredient for the planning and development of human settlement. Knowledge consists of images and concepts and their interrelation. A comprehensive core of knowledge must

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[42] R. L. Meier, A Communication Theory of Urban Growth (Cambridge, Mass.: The M.I.T. Press, 1965), p. 125.

include knowledge about biological, physical, social, cultural, and psychological as well as functional aspects of human settlement.[43]

Knowledge can be theoretical as well as applied. Consideration must be given to production, distribution, consumption and administration of knowledge. Certain minimum levels of knowledge must be achieved, so that an effective multiplication effect may occur. Meaningful knowledge must have relevance to the problems of the reality. Availability of knowledge in any society depends upon the capacity and ability of its people to produce it, as well as on the rate of production and the access to the knowledge through effective retrieval systems. The mode of communication of knowledge, to a great extent, determines the usability of existing and new knowledge, whether it is public or private knowledge.

C. Symbolic representations -

Symbolic representation can be of an idea, object or person. Following are basic modes of symbolic representations.

1. Language - It is a tool for representing thoughts and ideas, and it also structures the process of thinking itself. It can be written, verbal or non-verbal. For a society to be called civilized it must have written language.
2. Logic - It is a science of correct reasoning. It provides criteria for a valid thought process. These criteria vary in differing cultures and also within a given society according to their orientation, as economic logic, religious logic, etc..
3. Art forms (not the content) - Art forms of a society are a mode

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[43]R. L. Meier, Developmental Planning (New York: McGraw-Hill Book Co., 1965), p. 87.

of communicating ideas in time scales. They include music, drama, dance, painting, sculpture, architecture, literature, photography, folk art, urban design, industrial arts, etc.. Here, only form is included because the physical or biological content is not cultural. As, the same type of stone may be used to produce different forms in different cultures, thus the essence of culture lies in form and not in its content.

D. Institutional heritage -

In any given human settlement each institution, in time, accumulates a cultural heritage. This heritage varies from institution to institution and from society to society. This heritage provides the guide for organization and function of institutions.

Culture in different societies changes at different rates. Usually it is a gradual and evolutionary process. Three major parts of culture have different rates of change. Material culture is the quickest to express change. Behavioral comes next in the rate of change and the ideological culture is slowest to start in change and change occurs in this realm at a relatively slower rate than the other two parts of culture. Cultural change occurs through various social processes. Some of these social processes will be discussed in Chapter Eleven containing perspectives. When new information and knowledge arises it is symbolically represented and communicated by various means. These communications gradually modify attitudes and thus modifies behavior. These new modes of behavior get formalized into new norms and gradually belief and values are also restructured to be in harmony with new attitudes and behaviors. This process of cultural change is a fairly gradual one.

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There are certain basic variables which must be considered in the study of the culture of any human settlement. These are basically social variables but provide data for the understanding of the culture of any human settlement. These include the study and understanding of history, attitudes and opinions; expressed values and meanings; needs and aspirations; community issues; social processes; leadership; power structure; social structure; information and knowledge and its availability; art forms, language and other symbolic representations; imageability; modes and types of communication and behavioral patterns; and considerations of institutional and other special groups. These variables can provide significant insights towards the understanding and planning of human settlement.

Nature[44]-

The concept of nature here includes the inorganic physico-chemical order of geographical, climatic, atmospheric, planetary and any other processes with which physical scientists are concerned; as well as the organic biological order of genetics, subsistantial and somatic processes. Thus the natural sub-system includes air, land, water, minerals, planets, energy, climate, vegetation, and organisms, etc..

The natural sub-system is part of the given order of any human settlement. We consider it as an independent variable because it is a necessary condition for the existence of any human settlement. Man in his socio-cultural context modifies nature into artifacts to meet his needs and desires. But man cannot modify all natural aspects with equal ease, due to the variety of quantity and quality of various components of the natural sub-system. Here it must be realized that the socio-cultural aspects of

[44]Various of the sub-divisions of the components of nature were arrived at based upon interviews with specialists in the related fields of concern.

the behavioral process always operates within an inorganic-organic context, in which types and availability of natural resources, climate, geography, etc., restrictively condition institutions, man and cultural patterns, and the resulting artifacts.[45]

Nature has the following major components:

1. Air -

It provides the basic survival needs of man. Quantity as well as quality of air is necessary. In any human settlement the maintenance of the quality of air is crucial for the health and welfare of amn.

2. Land -

Land is the most basic commodity for human settlement, because still, in the present time, most human settlements are on land. Various functional activities take place on land, and when land is put to use it becomes an artifact. Land varies in geographic and chemical characteristics and its inherent qualities influence the type of use it may be put to by man.

3. Water -

Water, like air, is a basic commodity needed for the survival of man. Water is found under as well as over ground. Usability of water depends on quantity and quality as well as on accessibility. Quantity of water is usually not a major problem as compared to quality and accessibility. Water is a flow as well as a stock commodity.

Water often plays a very significant part in location and development of human settlement. Utilization of water often requires planning and its budgeting for various uses. In any human settlement water is used by man; it is used in the production of artifacts; it is required to maintain other natural components; finally it also has social as well as cultural uses and implications.

[45]B. N. Varma, A New Survey of the Social Sciences (Bombay: Asia Publishing House, 1962), p. 195.

4. Minerals -

Minerals in the natural environment of human settlement are a basic resource for artifacts. They can be underground or on the surface. In the overall classification there are three types of minerals. They are metallic, non-metallic and metalloid.

In the study of minerals one or more quantitative or qualitative characteristics must be considered. They include state; solid, liquid, gas; shape, texture, hardness, mass, atomic weight; molecular structure, geological age, temperature, pressure, oxidation, permeability, viscosity, solubility, absorption, reflection, wave length, purity, rate of change, etc..

5. Energy -

Energy is a basic source for the physical dynamics of human settlement. There are various types and sources of energy. This includes heat, mechanical, electrical, light, wind, sound, chemical, nuclear, and gravitational energies, etc.. Many of these energies are interchangeable and convertible to each other. Different forms of energies have different threshold levels of use and usability.

6. Climate -

Climate of the human settlement often plays a major role in the nature of human settlement, and the rate of its growth. In this we must consider temperature, precipitation, humidity, atmospheric pressure, quality and quantity of natural light, speed and direction of wind, climatic cycles, patterns, and fluctuations, etc..

In the study of the climate of human settlement one must consider micro as well as macro climate and their relation to each other. Influence of climate must be considered on other components of nature and on other sub-systems of human settlement.

7. Vegetation -

Vegetation in human settlement is a most basic item for the survival of man. It is not only significant in its direct uses but also in the indirect uses of natural oxidation.

It exists in a wild (natural) as well as in a domestic (cultivated) manner. In botanical terms they have two overall classifications. The first are called cryptogams, which include algae, fungi, etc.. The second variety are seed plants, which includes gymnosperms, which includes evergreens; angiosperms, which are those plants which have the seeds enclosed in the ovary, such as the apple. The types and nature of vegetation vary in various climatic regions, as well as with the same regions at different times of the year. Vegetation also has a wide variety of life spans. In a study we must see the quantitative as well as qualitative aspects of vegetation.

8. Organisms -

This category includes all organisms except man. This includes organisms at micro as well as macro level. This includes organisms on land and water as well as in air. Some organisms are in their natural state and some are domesticated. Organisms have built in hierarchy and are in the process of evolution.

9. Planetary system -

This includes the whole planetary system and the planets' interaction and influences on each other in their static as well as dynamic aspects. This, at the moment, is not the area of concern for a human settlement planner, but in the near future human settlement and environmental planning at this level may become a major topic of interest and concern. Human settlement planning at this level will involve a new set of problems, processes and challenges.

In the study of natural sub-systems one must consider internal as

well as external variables. Both supply as well as demand variables must be considered. A comprehensive analysis of use, misuse and dis-use of the natural sub-system must be considered. To effectively develop and utilize the natural sub-system, locational and distribution flow as well as stock variables must be considered. Characteristics of the natural sub-system must be considered in terms of organic, physical, socio-cultural as well as psychological aspects. In the overall study, the natural sub-system should be considered as an ecological system and in its evaluation and utilization this ecological balance must be maintained. The natural sub-system must not just be considered as a group of resources to be exploited. In effective planning we must recognize the basic rights of nature as a sub-system, whose integrity must be respected, otherwise nature will lose its ecological balance and the result will be various problems and dys-functions.

Artifacts [46]-

All man-made modifications of nature are defined as artifacts. Artifacts are probably the most evident part of any human settlement. Man meets his basic desires and needs by help of or by acquiring ~~the~~ artifacts. Basically, artifacts are means to meet man's need, but often they become an end in themselves. Artifacts have cultural value. Different cultures put different values on different artifacts at different points in time. The form, quality and quantity of artifacts is dictated by cultural values and knowledge. All artifacts belong to one or more institutions. They are produced, distributed and consumed in an institutional framework. Cultural changes

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[46]Various of the sub-divisions of the components of artifacts were based upon class notes and discussions in various urban planning courses taken by the author at Michigan State University.

which occur through social processes are very quickly expressed in the artifactual realm.

There are an unlimited number of artifacts and their number keeps on growing by the hour. Classification of these depends upon the purpose for which the classification may be used. This classification is prepared for the purpose of human settlement planning, and has the following sub-divisions of the artifactual sub-system.

1. Artifacts of individual institutions -

All artifacts belong to one or more institutions. This first classification of artifacts is significant and necessary, because institutions are a major topic of concern in human settlement planning. Each institution has a variety of artifacts to meet its needs. A listing of artifacts varies with different institutions and reflects their cultural and social role in society.

2. Structures, spaces and environment -

This category includes all structures, spaces due to organization of structures, and the resulting man-made environment in and outside the structures and spaces. It includes quantity as well as quality of these aspects. This whole human settlement-wide classification can provide a measure for the overall artifactual environment of any given human settlement.

3. Symbolic artifacts -

These are all those objects in any human settlement which have symbolic meaning to the people of any given community. They include historical structures and objects, monuments, sacred objects, sculpture, imageability giving forms, special land or water areas and symbolic forms, etc.. These types of artifacts carry high value and emotional attachments and give a sense of identity to the people of any community. This identity is with objects, times and the concepts they represent. This sense of identity is a major

contribution in making human settlement a community. In planning the utmost care must be given to create and preserve such symbolic artifacts.

4. Commerce, industry and service -

These are places of means of livelihood, and places where society's various needs are provided for. These include structures and other artifacts for comparative and convenience retail shopping, offices, real estate, light and heavy industry, wholesale, warehousing and storage, general and personal service facilities, and other business establishment facilities. Space and location are of major concern in these types of artifacts. These types of artifacts require special heavy use construction. Special care also needs to be given to the availability of special facilities and utilities related to these.

5. Agriculture -

It is classified as an artifact because it is domestication and modification of natural vegetation. Agriculture meets one of the most basic needs for the survival of any civilization. The nature of agriculture is seasonal. Quality and quantity of agriculture is dependent on water, land, climate, technological know-how and other resources; capital and labor inputs. Agriculture is done at various scales, but there are different scales of economies for different types of agriculture.

6. Transportation and movement -

Transportation and movement are basic necessities for meaningful functioning of any human settlement. There are various media of transportation and movement. Land related transportation and movement includes pedestrian; human and animal powered; combustion, turbine or jet engine powered vehicles; fixed path vehicles; air cushioned vehicles, and elevated and underground transportation. Air transportation includes airplanes, helicopters, vertical take-off machines, and anti-gravity machines. Water transportation includes

ships, motorized boats, submarines, air cushioned, air powered, man powered, and atomic powered vehicles. Space transportation at present includes single and multiple stage vehicles. Along with these there are some modes of transportation which travel in more than one media and can be classified as mixed or multiple media transportation.

In a study of transportation, one must also consider the arteries, channels, nodes, terminals, storage, related services, tools and artifacts involved in transportation. Transportation must be considered for people, services, goods, and information. These artifacts of transportation must be designed and located in such a way as to provide for the concerns of convenience, comfort, cost and speed. Optimum transportation should be provided for short and medium as well as for long distance travel. Various modes of transportation shall be well coordinated for smooth and comfortable transitions. Lastly, special care must be given to the role of transportation in the development of patterns of land use and activities and the resulting consequences.

7. Leisure and recreation -

In the present world, due to new know-how and technological development, man is gaining more and more leisure time. As a result more and more recreational facilities are being provided to effectively utilize this time. These recreational activities require a great deal of artifacts. These include open space and forest, regional parks, metropolitan parks, neighborhood parks, playgrounds, play lots, tot lots, gardens (historical, zoological and others), fair grounds, play fields and arenas, tracks, recreation centers and club houses, hobby centers, art galleries, museums, cultural and music centers, libraries, night clubs, restaurants, health and rest spas, resorts, radio, television, hi-fi, movies, and musical instruments, etc.. This category of artifacts will increase at a rapid rate in the private as

well as the public sector, due to increasing leisure time.

8. Housing -

Housing is the most basic commodity in any human settlement. It provides for man's basic need for shelter. It is also very significant that man spends a high percentage of his time in the house in a variety of activities which include eating, sleeping, entertainment, exercise, socialization, love, reproduction, body maintenance and education, etc..

There are various types of housing. They are based upon the number of dwelling units per structure and their arrangements, family size, life cycle stages, climatic types, design and style, and building material and construction types, etc..

There is a variety of knowledge which is required for planning, design, and construction of housing. They include the natural and physical sciences, which involves chemistry, physics and geology, etc.; technical knowledge, which is the application of basic knowledge to the materials and structures, etc.; economics, which includes building costs, housing market, finance, taxes, etc.; law and regulation, which includes laws, building codes, zoning, and other community and governmental controls; humanities and behavioral sciences, which include household activities, human needs and social needs, etc.; design and planning, which includes standards which include materials, equipment, labor, land, etc..[47]

9. Community facilities -

These are a variety of facilities which are required for the functioning of the human settlement. In different human settlements they vary in quantity and quality. They can be private, public or some combination of these. They include schools and educational facilities; health facilities;

[47]Glenn H. Beyer, Housing and Society (New York: The Macmillan Co., 1967), p. 491.

public safety, which includes police protection, fire protection; civil defence and emergency provisions; armed forces; community centers; service centers; social welfare centers; and public buildings, etc.. These and other community facilities are necessary for good community life.

10. Utilities -

Utilities are basic life lines for any human settlement. They include water, energy, heat, fuels, sewer, garbage, light, air, telephone and other communication means. These utilities can be solid, liquid or gas. They vary in extent and quality. They require consideration in size, capacity, quantity and quality of arteries, channels, nodes, storage, and related tools and artifacts. Cost, efficiency and reliability are important variables in the planning of the utilities. In overall terms one must also consider the implications of utilities, location and extension on settlement patterns and their consequences.

11. Synthetics -

These are rapidly rising types of materials which are becoming increasingly important in the use of artifact formulation. They have influenced the quantity, quality and the form of artifacts. They are playing an increasingly important role in building materials and other needs of man and his human settlements. These are divided into four classifications of aromatics, aliphatics, hetrocyclics, and organometallics. Some knowledge of their variety and qualities can be of significant importance in the planning of future human settlements.

12. Technological tools and machines -

These are the result of applied knowledge. They range from a simple sewing needle to complex space ships. They are an integral part of present life. They are required in production and distribution as well as consumption activities. These include tools and machines. Tools, in general terms,

are movable material objects especially designed for the application of energy in precise and controlled ways for particular mechanical tasks. They increase the effects of available energy in desired directions. A machine is an arrangement of one or more parts in a rigid frame, which both transmits and translates motion. These technological tools and machines can be classified light and heavy. They range from tools and machines in the household to giant tools and machines of heavy industry. These tools and machines are a means and not an end in themselves.[48]

There are various types of artifacts in human settlement but the above are most relevant to the human settlement planning situation. Artifacts do not have life but all have a static as well as a dynamic aspect. In time, due to the effects of man, institutions, culture and nature, these artifacts change in quantity as well as quality. Often they become obsolete due to new developments or deterioration. Production, distribution and consumption of artifacts are very basic forces underlying the dynamics of human settlement. Artifacts are not only physical but they also have socio-cultural and psychological meaning and significance. Thus in the planning of artifacts one must consider biological, physical, social, cultural, and psychological as well as functional implications.

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[48]Philip Wagner, The Human Use of the Earth (London: The Free Press of Glencoe, 1964), pp 92-105.

CHAPTER X

DIMENSIONS OF HUMAN SETTLEMENT

A human settlement, along with its five basic sub-systems, also has five major dimensions. These are unity of purpose, space, time, dynamics and organization. These dimensions, together with the sub-systems, constitute the totality of human settlement. Every sub-system, as well as the human settlement as a whole, must be related to these five basic dimensions. Dimensions differ from perspectives in that they apply universally to all sub-systems, whereas perspectives apply to different sub-systems to varying degrees. Following is a short discussion of these basic dimensions.

Unity of purpose -

There is no human settlement without any purpose. A human settlement without purpose will have a meaningless and short lived existence, if any. It is evident that any human settlement has many underlying purposes, which relate to biological, physical, social, cultural, psychological, and functional realms. For human settlement to survive and to provide a meaningful environment, the diverse purposes must be coordinated, interrelated and unified. If these purposes lack unity, they will be working against each other and negating efforts, resources, and meanings in any given human settlement. This unity of underlying purposes is a basic need for any human settlement. This unity of purpose will encourage balanced and multifaceted development of any given human settlement. This unity should be among the overall purposes as well as among various sub-purposes. This implies that unity of purpose should be in a horizontal as well as a vertical direction. This

should be in a dynamic unity, which will be capable of adapting and meeting the new situations in time and space. This unity of purpose is the most basic dimension of human settlement.[49]

Space -

In its simplest interpretation, space is the boundless, continuous expanse extending in all directions. In physical terms, space consists of the three dimensions of length, width and height. These three dimensions provide modes to conceptualize physical space, but this conceptual space is quite different from experienced space. Experienced or perceived spaces are of various forms. In overall terms, space, as it relates to man, consists of body space, this is an amount of space required for the body; sense space, the amount of space required for various sense perceptions, as visual, olfactory, etc.; mind space, which includes space of and for thought and imagination; soul space, which is space which provides intrinsic satisfaction to man.

In another mode of classification there is intimate space, which has the highest degree of proximity and sensory impact, as space for love, etc.; personal space, the space separating the non-contact species, it is like a space in a protective bubble that an organism maintains between itself and others; social space, the space where optimum social interaction is possible, it varies in different cultures; public space, the space well outside the circle of involvement; psychological space, the quantity and quality of space where man feels psychologically secure and satisfied; cultural space, a space which has symbolic significance to the people of any given community or society, as, Boston Commons; time space, which implies use and quality

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[49] Ekistics, XXV, Number 146 (January, 1968).

of space over time.[50]

Space has a variety of characteristics. It can be experienced as formal or informal; passive or active; quiet, stimulant or depressant; planned or unplanned; natural or artificial; conscious or unconscious; simple or complex; sociofugal (which drives people apart or away), or socipetal (which brings people together); with less or more friction; and with varying social value.[51]

Different types of spaces are required for different purposes. Any human settlement should provide a variety of spaces for a variety of purposes and for people with a variety of temperaments. In human settlement planning, quantitative as well as qualitative aspects of space should be considered and provided for.

Time -

Time is a hypothetical construct as well as a unit of measurement. The dynamics of human settlement takes place with reference to time. Basically time is a limiting and organizing factor for man in human settlement, because man's life span has a limited time, and most often the limits are not known. Time is experienced in duration and recurrence. Duration allows us to distinguish one event from another in a quantitative fashion and recurrence provides a measure of duration. The repetition of small events measures the difference between before and after, in reference to larger events.[52]

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[50]Edward T. Hall, The Hidden Dimension (Garden City: Doubleday and Co., Inc., 1966), pp. 110-112.

[51]Ibid., 116.

[52]Amon H. Hawley, Human Ecology - Theory of Community Structure (New York: The Ronald Press Co., 1950), p. 289.

Recurrence has three major characteristics. They include rhythm, which is regular periodicity with which the event occurs, they differ in tempo; tempo is the number of events per unit of time and gives the rate of occurrence; timing is the coordination and pacing of various rhythms and tempos in any given situation, to avoid confusion.[53]

In any human settlement man is performing various activities, all of which require varying amounts of time. Man is forced to make choices and allocate time among his various activities. Basic questions to be considered in the budgeting of time are when, where, what and how much. This allocation usually reflects a cyclical tendency in human activities, such as day, week, season or year, etc.[54]

A conceptual unit of time and an experienced unit of time are most often different. Experienced time passes quicker if a man has an interest in the activities he is performing. Thus the rate of experienced time is directly related to the amount of interest in activities being performed. The more the interest, the faster the passage of experienced time. Experience of time is also greatly influenced by micro and macro climatic and environmental variables. In different cultures, concept, value and the experience of time is perceived quite differently. As in the North American culture, time and strict adherence to it, is highly valued, whereas in South Asian countries time is not perceived as limited and thus a strict adherence to it is not a major topic of concern or significance. The concept of time also varies within a given culture. In planning, these variations should be delineated and provided for with reference to past, present as well as

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[53]Ibid., 289.

[54]Richard L. Meier, A Communication Theory of Urban Growth (Cambridge, Mass.: The M.I.T. Press, 1965), p. 49.

future temporal aspects.

Dynamics -

Dynamics is the process of interaction among and within various sub-systems of any human settlement and among various human settlements. It involves biological, physical, social, cultural and psychological movement and change. All sub-systems are in the process of interaction. This includes the dynamics of equilibrium as well as the dynamics of change. Equilibrium involves balance over time, both between system and environment, and between the major components within the system. The dynamics of change involves an alteration in the processes themselves and thus gives rise to a need for a different equilibrium. Equilibrium and change, when combined, create an open dynamic system of human settlement. Thus in this situation human settlement achieves progressively different equilibriums and forms of organization. The process of overall dynamics is explained in Chapter Eight.[55]

In the study and planning of human settlement the dynamic aspects should be considered for the whole system as well as for various sub-systems and their interrelations. It should include considerations of the reasons for dynamics; goals and purposes; the meaning of the whole or part of dynamics; attitudes towards it; time, space, resource and personal requirements; agents and forces of change; procedures; helping and hindering variables; social organization and conditions required; implications of changes; and the quantitative and qualitative characteristics of dynamics.[56]

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[55]Ibid. 142.

[56]Ward Hunt Goodenough, Cooperation in Change (New York: John Wiley and Sons, Inc., 1966), p. 330.

Organization -

Here the term organization is taken in its broadest context. Organization is the interrelation of ideas, objects, people and institutions. For example, a theory is the organization of ideas, a university campus is an organization of objects (buildings); a social group is an organization of people; a society is an organization of institutions. Organization provides the form to city and human behavior and is a significant variable in the design of plans. Any human settlement includes all these forms of organization, and the interrelation of these into the overall organization of human settlement. Organization provides structure for various types of interrelations and is a necessity for the survival of any human settlement.

A good organization must be effective, efficient, intrinsically and extrinsically satisfying, flexible, rational, the servant and not the master of man, and should be a clear statement of intent.[57]

A complete human settlement consists of the five sub-systems of: Man, social institutions, culture, nature and artifacts, along with the five dimensions of: unity of purpose, space, time, dynamics and organization. If we only take five sub-systems, they are just an unorganized meaningless mass. First of all these sub-systems are in the space and time reference, then they also require some purpose for being a human settlement. Once this purpose or unity of purposes is decided upon, the next step is the organization of these five sub-systems to achieve the particular purpose. After organization it will still be just a museum, because it will be static. Thus it will have to be a dynamic, functioning

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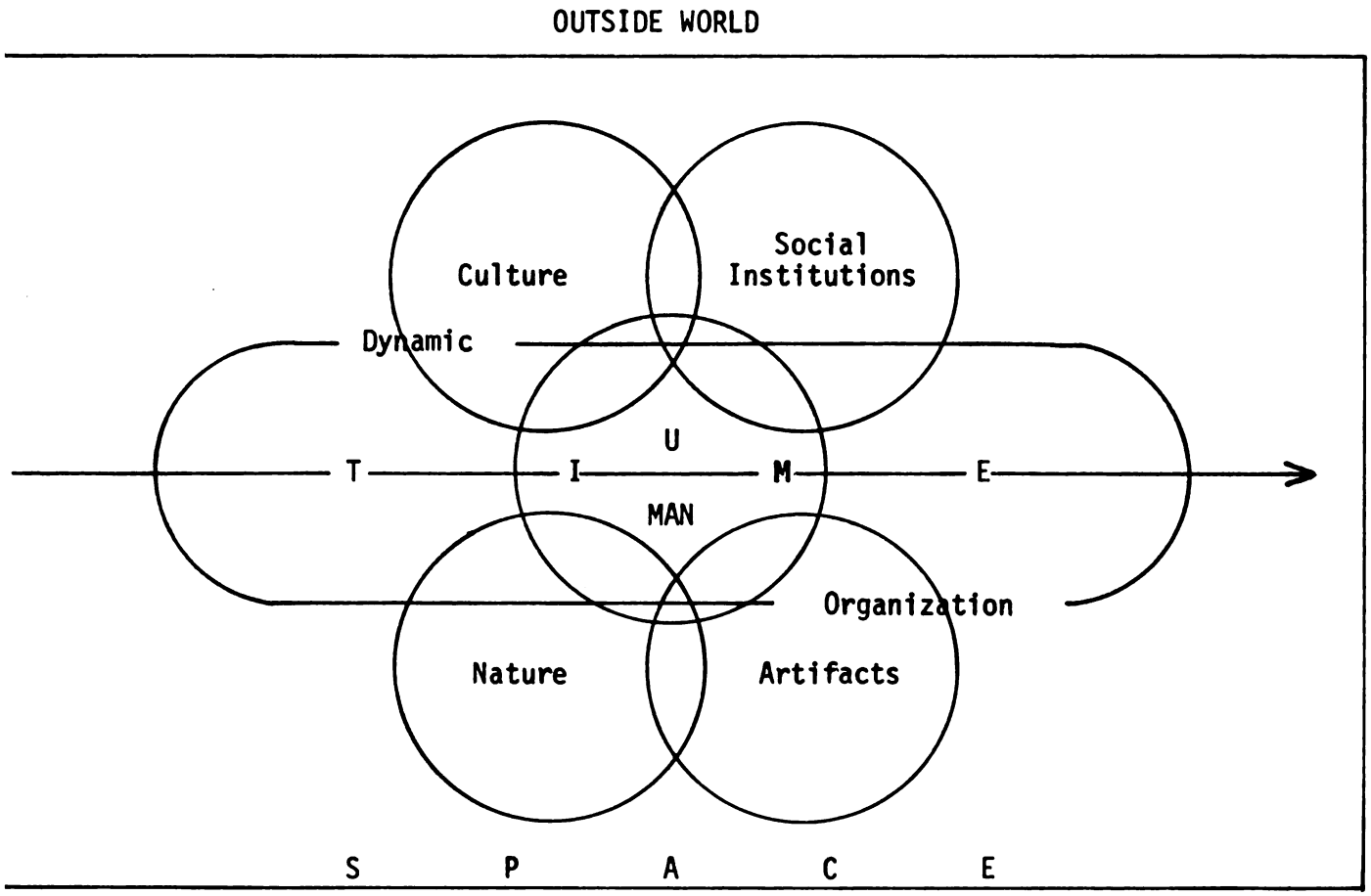
[57]Amitai Etzioni, Modern Organization (Englewood Cliffs, N.J.: Prentice Hall Inc., 1964), pp. 5-19.



U = Unity of Purpose

Figure 7 - Dimensions and Sub-systems Relations

organization of sub-systems in the space and time reference, moving towards some unity of purpose. Only then it can be called a human settlement.

The whole human settlement and its sub-systems should be considered in terms of these five dimensions. This relation is illustrated in Figure seven.

CHAPTER XI

PERSPECTIVES FOR HUMAN SETTLEMENT

Perspectives are suggested basic modes for perceiving and the planning of human settlement. These perspectives are analytical as well as synthetic tools. They provide the basis for data collections and interrelation for the planning and solution of human settlement problems. Many of these perspectives are presented as continuums of extremes to provide for various degrees of perception, as the means-end continuum. These perceptions are grouped to show the relative closeness of certain perspectives. This list only attempts to present major perspectives and is open to future alteration, additions and reorganizations, to meet the varying purposes and problems. It is also assumed that not all perspectives will be equally applicable to all sub-systems or all problems. Unavoidably certain perspectives will be more important in some situations than in others. Following is a listing and definition of these groups of perspectives, and suggestions for their applicability.

Group one -

Scale -

Scale is a system of classifying in a series of degrees according to relative size, amount or importance, etc.. Any human settlement has various types of activities, problems, objects and organisms, which have different sizes and importance and require a different scale of planning, resources and solutions. In human settlement there is man, other organisms, and

artifacts, etc.. All of them have a need for a different scale and there are different scales within each of these sub-systems, as, the artifact scale for a bicycle and the scale of the jet plane are different; for man, the scale for a child is different than the scale for an adult. In overall terms there is the scale of man and the scale of machines (artifacts). The latter should be provided for without dominating man. The scale of machines should relate to the scale of man, because man has to be served by these artifacts. At the human scale also there are various differentiations. There is a scale for the body, a scale for the senses, a scale for the mind and ultimately, a scale for the soul. To achieve balance and harmony between the needs of various aspects, human settlement must be based upon the principle that different elements of human settlement require different scales. These scales need to be coordinated, and smooth transitions need to be provided among these various scales.[58]

Hierarchy -

Human settlement is a complex organization of five sub-systems and dimensions at various levels. In any human settlement there are five basic types of hierarchies. They are the hierarchies of forms, functions, ideas, quantity and quality. These hierarchies vary in vertical as well as horizontal direction, in the time and space reference. These hierarchies are interrelated but have a different level of problems and require different solutions. Hierarchy also reflects relations of dominance and submission among and between the sub-systems and relates to lines of controls and interactions. In the planning of human settlement one must consider the overall hierarchy, internal hierarchies and their interrelations, so that

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[58]C. A. Doxiadis and T. B. Doublass, The New World of Urban Man (Boston: United Church Press, 1966), pp. 58-78.

a harmonious, coordinated and comprehensive development may take place.

Group Two -

It is the measurement of properties in numbers or symbols. Quantification provides a concrete measure of comparatability. This includes kind, number, size, position, rate, etc. In quantitative measures, nominal, ordinal, interval and ratio scales are used.

Quality -

It is a degree of excellence of property or characteristics of an idea, object, person or institution. It signifies the degree of value or meaning. It should be the most important consideration of any of the sub-systems and its evaluation and judgement. It can be a negative as well as a positive quality. Qualitative judgement is more subjective and culture oriented as compared to quantitative aspects. The quality of human settlement and its invironment has great influence on the resulting quality of life. There are biological, physical, social, cultural, psychological and functional qualities.

Group Three

This group represents a mode of comprehensive perception of whole or part of human settlement. This group of perspectives attempts to interrelate various subsystems. In the study and planning of any material or non-material sub-systems, they should be looked at in terms of its implications and in relation to the "biological", "physical", "social", "cultural", "phychological", and "functional" variables of a given situation. For example, in the study of housing, which is a material artifact. One must also consider its health aspects; social interaction aspects and family structure; cultural value meaning and use of the house; psychological

(as, aesthetic) satisfaction of the house; and its functional efficiency, etc..

Group four -

This group delineates the basic social processes which underly the dynamics of human settlement.[59]

Cooperation -

This is the most basic form of human interaction. It is a continuous and common endeavor of two or more persons to perform a task or to reach a goal that is commonly cherished. It is always a group enterprise. It is the most pervasive and continuous form of social process. Because of its pervasiveness and continuity, cooperation is the process of which we are least likely to be aware. Cooperation is of various types. Primary cooperation is that in which group and individuals virtually fuse. In secondary cooperation, which is most characteristic of modern western society, the individual devotes only part of his life to the group. This type of cooperation is of major concern for urban planners.

Competition -

Society depends upon cooperation to get its essential tasks completed, but it also depends upon competition to ensure that those tasks are done efficiently. Conflict occurs when two or more parties strive for the same goals which none is prepared or expected to share with others. Most of the time it is interaction without social contact. In the North American cul-

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[59]A. W. Green, Sociology: An Analysis of Life in Modern Society (New York: McGraw-Hill Book Co., 1964), pp. 58-68; information corresponding to that of Green, S. Koenig, Man and Society (New York: Barnes & Noble, Inc., 1957), pp. 256-270.

ture competition determines who is to perform what function and how things would be distributed. In the North American culture it also determines the ecological organization of the community as well as the social and economic hierarchies. A competitive society provides the individual with better opportunities to satisfy his desires for new experience and recognition, whereas as cooperative society gives him a better chance to achieve security and social prestige. The last two desires are possibly more fundamental to the happiness and welfare of the individual and group. Cooperation can also bring about a more harmonious ecological balance of sub-systems in a given community. The extent of cooperation or competition depends on the values and social structure of the given society.

Conflict -

It is any deliberate attempt to oppose, resist or coerce the will of another or others. It arises primarily from a clash of interest. It can be latent as well as overt. Social tension and dissatisfaction is a form of latent conflict. Conflict has emotional involvement. It is intermittant rather than continuous. Intergroup conflict usually has negative results, but it can also have positive results. A planner has to be aware of internal as well as external conflicts as they relate to any given human settlement.

Accommodation -

It is a form of cooperation. It involves the use by two parties of common means to achieve antagonistic goals, as labor-management relations. An organism, to become a functioning member, has to accommodate with environment.

Assimilation -

It signifies both the process of transformation and the incorporation of an element into an assimilating body. Cultures assimilate by adopting the attitudes and values of each other. Assimilation is the result of contact, but the nature of the contact is very crucial. It requires communication. It is a natural, unassisted, slow and gradual process. The planner must know rates of assimilation and ways to facilitate it.

Group five -

Whole-Part -

Whole and part of any human settlement are a part of the same continuum and totality. The whole is more than the sum of its parts, because it involves parts as well as their organization and interrelations. In the study of whole one must get the overview of nature and the relation of human settlement and perceive how the various parts relate to each other to make a whole. The study of parts is at a micro level as compared to the whole of human settlement. At this micro level also the planner must realize the overall picture of which this micro situation is just a part. The goals of any part should be complementary to the goals of the whole, especially in the long run.

Internal-External -

This continuum is basic in the definition of any problem or realm of primary concern. External refers to anything and relative outside the area of primary concern. External is usually beyond control, but still often has very significant influences on the internal situation. As in the economic base of any community, external uncontrollable variables are major determinants. Usually a planner needs to pan for the influences of these external independent variables. This internal-external relation can

be at various levels. As in the case of an urban renewal project, the project's area is internal and the rest of the city is external to this given situation of immediate concern. One must also consider not only the influences of the external on the internal situation but also the effect of internal plans and actions on the external situation at the present and in the future.

Group six -

Demand -

It is a schedule which indicates various amounts of product which a consumer is willing and able to purchase at each specific price in a set of possible prices during some specified period of time. In the case of the resource market the words "resource" and "business" can be substituted respectively for "product" and "consumer." The basic law involved in the concept of demand is that, as the price falls, the corresponding quantity demanded rises and vice versa. Demand can apply to resources, goods or services. The concept of demand is directly tied to the concept of market and its assumptions. The determinants of demand include the tastes and preferences of the consumer; the money incomes of the consumer and money availability in the market; prices of other related goods and services; consumer's expectations with respect to future prices and incomes; and the number of consumers in the market.[60]

Need -

The concept of need is distinctly different from the concept of demand. The concept of need is not tied to the concept of market, thus need

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[60]Cambell R. McConnell, Economics: Principles, Problems and Policies (New York: McGraw-Hill Books, Inc., 1963), pp. 60-63.

is not dependent on the willingness or the ability to pay for resources, ideas, goods or services. The concept of need is based on the assumption that every member of the society has basic needs for survival and human dignity, and these should be considered and planning should aim for the provision of these and not only the market demand. As, for example, every family has a need for housing, but not all families are able to pay the price demanded in the market place. In the study of needs we should consider the needs of all five sub-systems and their interrelations. Appendix Two delineates basic human needs.

Supply -

It is a schedule which shows the various amounts of a product which a producer is willing and able to produce and make available for sale in the market at each specific price in a set of possible prices during some specified time period. There is a direct relationship between price and quantity supplied. As price rises, the corresponding quantity supplied rises and vice versa. Determinants of supply include the techniques of production; resource prices; prices of other goods; price expectations and the number of sellers in the market. The concept of supply and demand is directly related and they often reach the same market equilibrium.[61] Supply should also be considered in terms of all five sub-systems and their balance.

Group seven -

Cause-Effect -

Cause-effect is a continuum and usually they are hard to separate. It is also more desirable and meaningful to study them together, so that

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[61]Ibid., 65-68.

we can see the interrelations. Cause and effect are equivalent to stimulus and response in behavioral sub-systems. Usually there is a chain of these causes and effects in any given situation and this needs to be organized in some hierarchy of interrelations and importance. Planning may also be perceived as an intervening variable between causes and effects. Planning attempts to deal with certain causes of given problems to achieve certain effects of results. Planning is basically a normative art and science and thus it must clearly define the effects it desires to achieve.

Means-Ends -

Means and ends is another basic continuum and provides an important framework for human settlement analysis, evaluation and action. In reality, means and ends are inseparable. A means in one situation may be the end in another situation. Thus the ends and means are relative to the context or the reference point. As, for example, for the farmer, wheat is an end product, whereas for the consumer it is a means to meet his hunger drives. This analysis of means and ends for any given situation provides a basis for evaluation of results as well as related resource requirements. When some value is put on these means and ends this turns into a form of cost-benefit analysis.[62]

Advantage-Disadvantage -

This perspective provides the continuum for judgement of the positive as well as the negative aspects of a given situation, problem, or project. These advantages and disadvantages may be tangibles or intangibles. Tan-

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[62]J. E. Smith, The Spirit of American Philosophy (New York: Oxford University Press, 1963); information corresponding to that of Smith, M. K. Gandhi, All Men Are Brothers (New York: Columbia University Press, 1958), p. 81.

gible aspects will include the quantity of materials needed, money, etc.. Intangibles will include quality of the resulting environment, psychological satisfaction, degree of harmony with cultural values, etc.. These advantages and disadvantages must be considered at the micro as well as the macro level. They should also be considered in terms of present, future, and over time. These positive and negative aspects need to be given some relative weight, even though it is not easy to assign this relative weight. This process of weighing is subjective or intersubjective and reflects the cultural values of the individual, group or society. Cost-benefit studies are one form of advantage-disadvantage studies.

Group eight -

Channels and linkages -

It is any mode, matter, relation, or media between two points. These points may be people, objects, or ideas. Channels or linkages interrelate these two points. These two points and their linkages are in space and time. It may be static or dynamic. Through these channels or linkages the flow of goods, services, resources and information takes place. Quality and quantity of flow depends upon the characteristics of the channel and the matter which is flowing through. Channels and linkages may be material or non-material, as, roads, radio wave lengths, kinship relations, etc.. They can be physical, biological, social, cultural, psychological or functional relationships in one or more sub-systems. For effective development and improvement of the human settlement, one must plan for quantity, quality and a variety of channels.

Nodes -

Nodes are points where two or more channels or linkages meet. These are potential or actual points of interaction of goods, information, people,

resources and services. These nodes are the strategic foci. They can be active or passive. These are points of potential conflict or cooperation depending upon the characteristics of the node. They often have social, psychological or culturally symbolic meanings and significance.[63]

Critical points and control people -

The critical points in any system or sub-system are those points which must be accounted, planned and provided, for the successful completion of any given task. As for example, one of the critical points in successful neighborhood planning is the development of local leadership. Thus, this critical point is not only a physical entity but also an act, activity, or decision.

Control people are those people whose decisions are most influential in accomplishing or not accomplishing any set of given goals in any human settlement. Thus the influence of these control people can be positive as well as negative. Cooperation or avoidance of these people is a necessary condition for successful completion of any goal.

Group nine -

Reference point -

It is a concept, group or point in time, space, consciousness or experience, which provides norms, context, direction, or orientation for attitudes and actions, while perceiving and dealing with the totality or a part of reality. The basic importance of the reference point is that it provides context, direction and orientation in dealing with the problems. Different individuals, groups and societies have different reference points

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[63]Kevin Lynch, The Image of the City (Cambridge, Mass.: The M.I.T. Press, 1966), p. 72.

from which they perceive reality. For a planner to understand different points of view and plan effectively, he must be willing and able to see the problem from various reference points. A reference point could be fairly stable or changing, and there may be different reference points for different things and problems. Reference points are greatly influenced by values, knowledge, environment and the process of learning. Reference points influence in determining the areas of emphasis and interests for different people, cultures and societies.[64]

Perception -

A definition and explanation of perception has been given in the discussion of man as an individual and the reader should refer to that part. Once the reference points are decided upon the next step is to understand various perceptions involved in any given situation. Different individuals groups and societies have different modes of perception and interpretation, they are greatly influenced by the reference point. These are rational modes of perception, intuitive modes of perception, cultural modes of perception, ideological modes of perception and intellectual modes of perception. Some examples of modes of perception are economic, legal, scientific, religious, etc.. The understanding and interpretation of perceptions is a necessary step in decision making.

Decision making and decision modes -

The process of decision making and modes of decision making are the most crucial aspects of planning. The overall decision situation has four essential components. They include type and topics of decision to be made,

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[64]T. M. Newcomb, Social Psychology (New York: Holt, Rinehart and Winston, 1960), p. 225.

which involves a clear definition of problem; components of decision making; timing of decision making; and the decision maker. Components of decision making include data; the predicting system, value system and decision criteria. Data is used in two ways. First, it is fed into the predicting system, which provides the possible outcomes of each action and also a probability associated with each outcome. Second, the data is fed into the value system, which provides the desirability of any outcome. Thus far, we have a list of actions, a list of outcomes for each action, a probability associated with each outcome, and a desirability associated with each outcome. Then the decision criteria are applied to obtain a decision concerning a recommended course of action.[65]

The decision can be man-made, machine made or some combination of these. It can be an individual or a group decision. It can be rational, intuitive, judgemental, emotional or some combination of these. In the study and planning of human settlement, decision mode and process must be clearly decided upon and its validity and reliability shall be checked. Different decision modes may be appropriate for different situations and sub-systems. In evaluating a situation a planner should look at the reference points, perceptions, and decision modes of the people involved.

Group ten -

This group of perspectives provides a basis for transition from perspectives to the planning process.

Problems, limitations and constraints -

In any given human settlement situation there are certain inherent

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[65]Irwin D. J. Bross, Design for Decision (New York: The Free Press, 1965), pp. 28-32.

limitations and constraints in dealing with problems. These limitations should be clearly defined and grouped and organized in terms of their relatedness, so that an attempt can be made to deal with them. An attempt should also be made to define which of these limitations are critical, which are short-termed and which are long termed, so that they can be dealt accordingly. A definition of problems should be by the experts, but more importantly, by the people of the community as they see them.

Goals-Policies -

After the problems, limitations, and constraints have been defined, the next step is to define the goals to deal with them. Goals are based upon values, limitations and problems, and needs and resources. These should be general goals for the overall situation as well as specific objectives to deal with the specific problems and to delineate some specific course of action. These goals should give regard to the micro as well as the macro situation. These goals should be remedial as well as preventive. These goals should be defined by the people who are directly influenced as well as the community at large. The role of the expert is to provide sufficient data concerning needs, problems, and resources, so that people may make meaningful and relevant goals.[66]

To have goals which are relevant is only one step, for these goals to be meaningful, the people who are going to implement these goals must also make and state policies which are complementary towards fulfillment of these goals. If the complementary policies are made and followed, only then there can be hope for the fulfillment of the goals and thus the meeting of the needs, problems and desires of the people.

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[66]R. C. Young, "Goals and Goal Setting," Journal of the American Institute of Planners, XXXII (March, 1966), 76-85.

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[66]R. C. Young, "Goals and Goal Setting," Journal of the American Institute of Planners, XXXII (March, 1966), 76-85.

Alternate solutions for action -

Once the goals have been formulated, the next step is to prepare possible solutions for action towards the solutions of the problem. There should be more than one solution presented, to see the range of possibilities, and these alternatives should be evaluated by the experts and the people for their relative merit towards the achievement of goals. Each alternative should clearly state the underlying assumption, specific steps of action and their relations to the goals and their consequences. In the preparing of these alternatives, the citizens affected should play a direct and significant role from the very start to the end. This continued participation will provide the people identity with the alternate solution, will clarify why certain actions are proposed, and provide the expert instant and continued feedback as to how well the alternatives deal with the problems, as the people affected see them.

As stated earlier, not all perspectives will be equally applicable to each sub-system. The application of perspectives to the sub-systems will also vary with different purposes and parts of any given sub-system. Figure Eight presents a matrix which attempts to relate perspectives to the sub-system. These indicate relations are in general terms and will vary in intensity according to different situations. In group one the scale is of special concern in the relation of man to the artifact. Hierarchy of relations is of crucial concern for values and social interaction. Group two, which includes quantity and quality, must be considered in all sub-systems. The qualitative aspects are especially crucial for the quality of life, as other sub-systems relate to the man. The purpose of perspectives in group three is to relate the five sub-systems to each other. As for example, in the case of housing one must consider biological factors, which relate to health and sanitation; physical factors, which relate to building

materials, etc,; social interaction considerations; the cultural factor, which shapes the form; psychological factors, which relate to psychological health and well being; the functional factor, which relates to effieiency and convenience, etc.. Group four represents basic social processes which are more relevant to the sub-systems of man and social institutions. Group five is applicable to all sub-systems and is basic to the understanding of the problem. Group six is less appropriate to the sub-systems of man and culture and more applicable to the sub-systems of artifact, nature and social institutions. Groups seven through ten are especially relevant to the planning process. Group seven is more relevant in understanding and evaluation of the sub-systems. Group eight is especially applicable to planning and implementation of the artifact sub-system. Group nine is significant for understanding of individual and social behavior and in planning for effectively meeting the needs of man and social institutions. Group nine is highly dependent upon the cultural sub-system. Group ten is applicable to all the sub-systems.

Figure Nine indicates the overview of the human settlement; it includes sub-systems, dimensions and perspectives. In this there is horizontal as well as vertical interaction between sub-systems, dimensions and perspectives. In any given situation first one must look at the overall macro situation which the given problem is part of. The next step will be the interrelation of this aspect of study, as housing, with other aspects in the given sub-system and then its interaction and relation to other sub-systems, dimensions and perspectives must be considered in every situation of human settlement planning.

PART THREE

CHAPTER XII

APPLICATION OF COMPREHENSIVE THEORY TO THE PLANNING PROCESS

As stated in the introduction and Chapter Five, the present planning theory and process are not adequate for effective and meaningful planning. Present planning theory has usually dealt with the parts of human settlement without regarding the whole of the situation. Present planning theory has not provided an adequate definition of human settlement and its subsystems. It has often ignored the social and cultural variables and their influences. Thus the plans prepared for the human settlement have also lacked comprehensiveness. As for example, most commonly plans only include land use, housing, commerce and industry, community facilities, utilities and transportation. All these plans only relate to the physical realm of human settlement.

Due to inadequate planning theory, the traditional planning process has emphasized only the physical planning. The process has lacked an adequate basis for the definition of problems, evaluation and explanations concerning the consequences of planning proposals. The traditional planning process has lacked flexibility and has discouraged innovation due to its deterministic approaches.

In this thesis human settlement is perceived in its totality, with due regard to physical, biological, social, cultural, and psychological

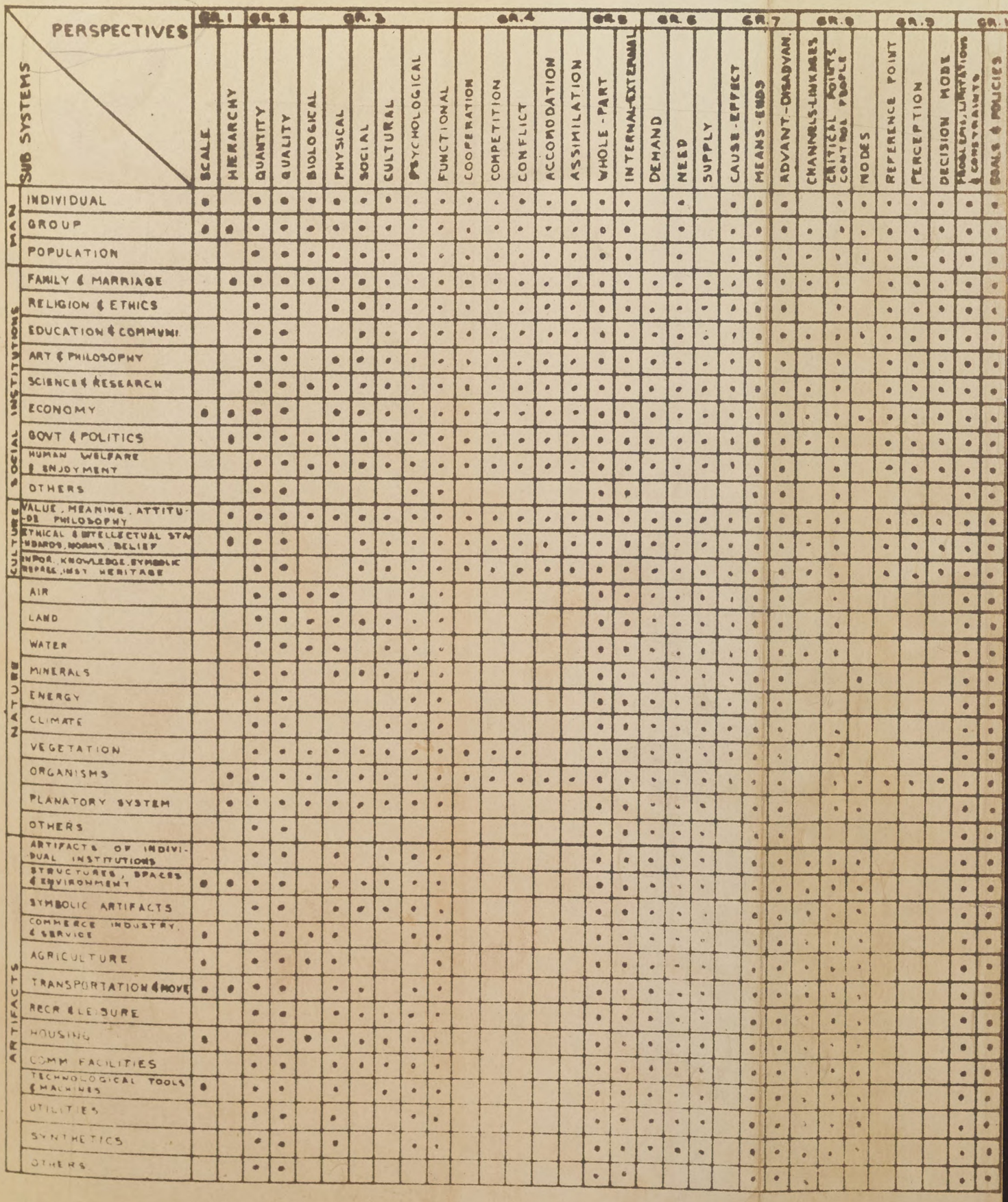

Figure 8 - Perspective and Sub-system Matrix

variables. Here a comprehensive framework is presented to relate and plan various sub-systems. It also presents dimensions and perspectives to effectively and meaningfully perceive and plan sub-systems in a dynamic planning process.

The planning process presented here attempts to be more comprehensive in detail and content, as compared to the traditional planning process. It involves a comprehensive theoretical framework as a guide and integral part of the planning process. It also allows for the use of models and other theoretical methods. Here, citizen participation is an integral part of the planning process. An attempt is made to involve the people of the community at every stage of the planning process. The decisions and evaluations of citizens are basic to the whole process. In stage one it provides better guides for the definition of the problem. Inventories and studies are based on the comprehensive theoretical framework. Inventories are related to all five sub-systems of human settlement; thus this planning process gives due regard to biological, social, cultural, psychological, and natural as well as physical aspects of human settlement. These studies are not entities in themselves but they also interrelate various sub-systems. In stage two of the planning process, analysis and synthesis are separated and clearly delineated. The synthesis phase points out the need for better interrelations between needs, resources, problems and possibilities. In the directive phase it utilizes socio-cultural values and meanings to arrive at realistic and desirable goals. These goals are also prepared in light of standards, criteria, requirements and principles. The solution phase emphasizes the need for a clear definition of plan and provides comparable policies which will be necessary for the fulfillment of plans. This planning process also emphasizes the need for evolution by the technician as well as by the layman. In the implementation phase it indicates the

need for the multifaceted activities of advice, control, inducement and redevelopment. Most of all, here the planning process is conceived as a dynamic and creative process.

The overall planning process involves three basic questions. What do we have? What do we wish? How do we intend to achieve these wishes? The success of any planning process will depend upon how well we answer these questions, and how well we relate these three questions and their answers. A clear and comprehensive theory of human settlement is a basic first step in the answering of these questions in a meaningful way. Parts one and two of this thesis attempt to provide this basic theoretical framework, by clearly defining the sub-systems, dimensions, perspectives and their interrelations. These elements will be utilized in the planning process at various steps. For illustration purposes the planning problem utilized in this process will be that of a comprehensive master plan preparation.

Here the planning process has been divided into three levels and four stages. The levels are three parallel, continuous and interacting processes, and the stages are progressive steps in these processes, which are also interacting with each other. Levels one and three have the same type of activities at all four stages, but level two has different activities at different stages. Level one at all four stages includes theory, models, methods and knowledge, which interact with level two and level three. Level two in stage one includes background and definition of the problem; stage two includes inventories, analysis and synthesis; stage three includes the directive phase and solution phase; stage four includes implementation and the continuing planning process. These four stages in level two are continually interacting with each other and with levels one and three, and are being modified whenever necessary. Level three includes time variables, citizen

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& MOVEMENT

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ARTIFACTS
TRANSPORTATION & MOVEMENT
LEISURE & RECREATION
HOUSING
COMMUNITY FACILITIES
UTILITIE S
SYNTHETICS
TECHNOLOGICAL
ORGANIZA
GROUP-EIGHT
CHANNELS & LINKAGES, NODES, CRITICAL POINTS, & CRITICAL PEOPLE
GROI
REFERENCE
PERCEPTIO
MAKING & DE

participation, citizen education and information, feedback, and review and modification. This whole planning process is a dynamic one. The summary of the planning process is illustrated in Figure Ten. The overall movement in this process is from left to right, but within this overall direction there is backtracking whenever necessary and beneficial. Vertical arrows in the Figure represent a two way interaction between levels.

More comprehensive representation of this planning process is illustrated in Figure Eleven. Levels one and three are as explained above, but level three is further detailed. The following explanation details level two in relation to levels one and three.

Stage one -

This stage contains the general background and definition of the problem. The purpose of this part is to provide an overall setting and the nature of the problem. Three basic activities which relate to three levels start at this stage. These include theoretical background and knowledge related to the problem; initial start of the given area of the problem; and organization for citizen participation and communication.

Background -

This step involves getting an overview of the situation. It includes initial impressions of the situation; initial direction; a reconnaissance survey, which includes a general understanding of the natural features, settlement patterns, socio-economic factors, problems, resources and other dominant features; the general historical background concerning trends, events and forces involved; the reference point or context of the situation in relation to the overall regional situation and relations; study of previous existing programs relevant to the problem; and initial conclusions.

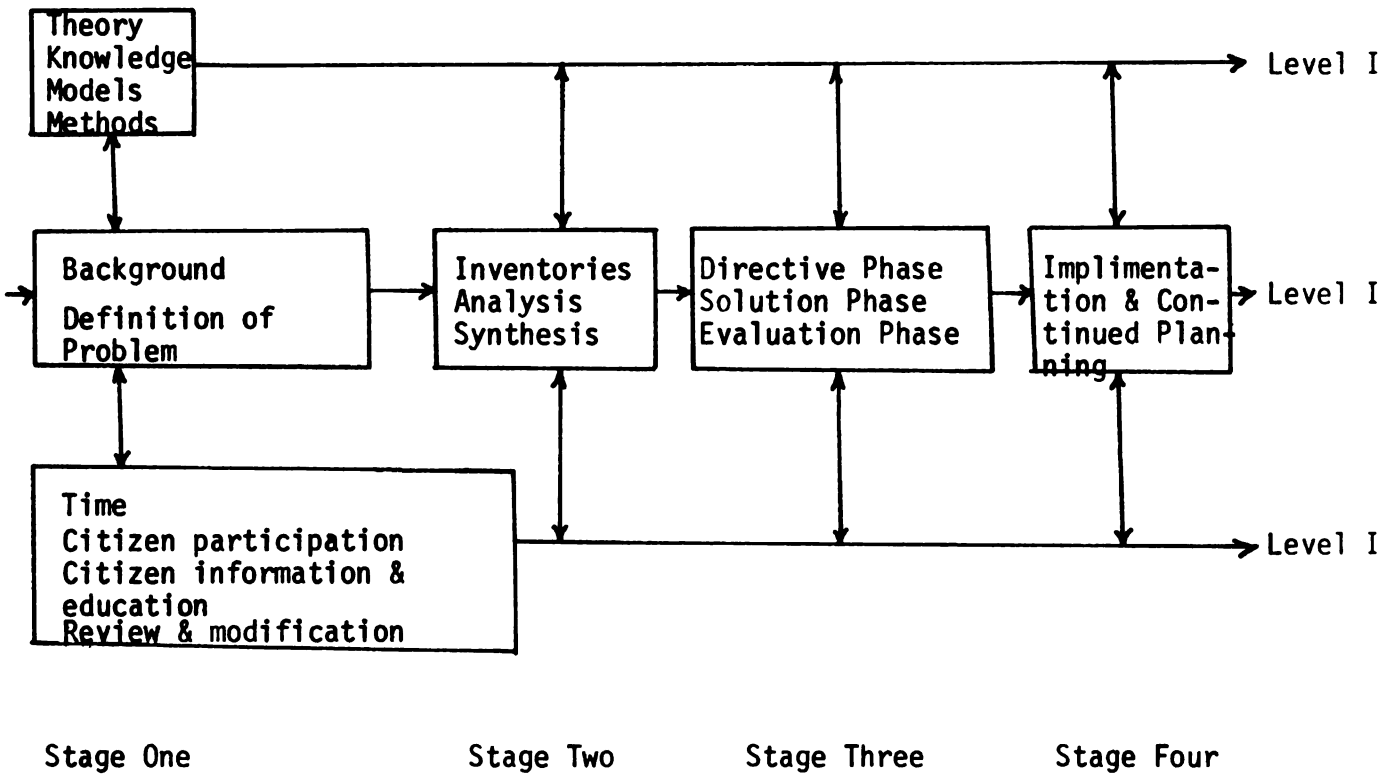

Figure 10 - Summary of Planning Process

Definition of the problem -

A clear definition of the problem is a necessary condition for an effective and relevant analysis and the solution of the problem. This includes definition of the scope of the problem; the specific and general nature of the problem; and determination of the degree of controls, limitations and constraints. It further includes a definition of the overall purpose of the study; possible uses of the study; overall objectives of the study; a clear definition of the underlying assumptions and an overall study of the resources. From this summary a definition of the given situation needs to be arrived at, which provides initial direction and a factual basis for dealing with the problems. Here we will have an input from level one of the theoretical methods and tools which will be relevant to the preparation of the overall work program or study design, such as P.E.R.T. or C.P.M.. This study design will outline the overall steps and their relations and activities required in each step. Various parts of this study design will be further detailed for the specific study area. Citizens should take an active part in defining the problem and arriving at the overall approach.[67]

Stage two -

This stage involves inventory, analysis and synthesis of the problem. The purpose of this stage is to collect, analyze, and synthesize data relevant to the situation and arrive at an understanding of the needs, problems and resources.

Inventories -

Here the basic purpose is to systematically collect relevant infor-

[67]J. O. Field, T. E. Borton, R. D. Duke, Planning Process (East Lansing: Michigan State University, 1960).

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mation concerning the settlement and its various parts, which will provide a basis for future decisions required to arrive at necessary solutions. Before inventory is taken, one must decide about the purpose of a specific study, types of data required, method of data storage and retrieval and inventory resources. Elements of each inventory study must include an introduction to the task; its needs and uses; assumptions; goals and objectives; methodology; theoretical basis, models and methods; detailed work programs for a particular study, containing specifications of time, events, responsibilities and products; data collection in terms of dimensions and perspectives as stated in Part Two of this thesis; data presentation; and general implications, etc.. But before any inventory can be taken, there should be a clear definition of the system or sub-systems of concern. The theoretical level will provide this basic understanding. In a comprehensive master planning situation there will be the sub-systems of man, social institution, culture, nature and artifacts. All these sub-systems should be studied meaningfully. These studies should be related to relevant perspectives as indicated in Figure Eight. Some studies will apply to more than one sub-system. These inventories consist of sub-systems, as well as their internal and external relationships in quantitative and qualitative terms.

The sub-system of man is related to historic study, demographic study and health study. The sub-system of social institutions is related to social study, economic study, administrative study, education and communication study, activities and life pattern study, value and perception study, and family and housing study. The cultural sub-system is related to education and communication study, activity and life pattern study, value and perception study, environmental study, and natural system study. The natural sub-system is related to value and perception study, environmental

study, natural system study, natural resource use study, transportation and land use study, community facilities studies, utility study and family and housing study. Here an attempt is made only to delineate the major relations. These relations can be further expanded, depending upon purpose and detail of the studies. These relations are delineated in Figure Eleven.

Following is an attempt to provide a comprehensive list of studies for the major sub-systems. Possible and necessary details for these studies should be based on a discussion of sub-systems in Chapter Nine and description of dimensions and perspectives in Chapters Ten and Eleven respectively.

1. Historic study - To see the trends of growth, underlying forces and overall historic relations with other settlements and within the given human settlement.

2. Demographic study - This will include overall population growth, migration, and characteristics.

3. Health study - This will include factors relating to physical, social and psychological health and related services.

4. Social study - This will include a discussion of social institution structure, power structure, social issues, leadership, social welfare and human resources.

5. Economic study - This will include economic base, commerce, industry, employment, finance and standards of living, etc..

6. Administrative study - This will include administrative organization, their functions (as regulation, information, etc.), and their policies.

7. Value and perception study - This will include values, norms, belief, imageability and attitudes and their influence on activities and life

patterns.

8. Activities and life pattern study - This will include the type and extent of activities and their organization in "time" and "space."

9. Education, knowledge and communication study - It will include theoretical and applied knowledge and its storage and communication through the educational system. This will also include discussion of channels, modes, flows and their quality.

10. Natural system study - It will include considerations of natural ecology, geography and physiography, etc.. This will be basically an objective study of the state of the natural system.

11. Natural resource use study - This will be the study of how man utilizes nature, what are the demands put on nature and what values or social significance man puts on nature, and then relate this to nature as a system and its demands.

12. Environmental study - This will include discussion of quality of physical environment, as structures, etc.; biological environment, as pollution aspects; psychological environment, as aesthetics; and socio-cultural environment, as power distribution, equity and justice, etc..

13. Transportation and land use - This will discuss types, channels, flows (in relation to space and time), extent, patterns, relations, critical factors, and their influence on environment, activities, and resulting life pattern.

14. Community facilities - This includes cultural facilities; recreation and entertainment facilities; police, fire and civil defense facilities;

governmental and civic facilities; and schools, libraries and research facilities, etc..

15. Utility study - This includes water, sewer, garbage, gas, electricity, etc.. This also includes their storage, distribution and influence on the land use pattern, growth and quality of activities and environment.

16. Family and housing - This study inventories the demographic, socio-cultural value and attitude aspect of family and relates them to types of housing and physical environment needs.

17. Special purpose study - Any special area components and interrelations of concern to the people or the agency involved.

Analysis -

Analysis involves breaking up of any whole into the parts so as to find out their nature and function. This can be a quantitative as well as a qualitative analysis. At this stage, data should first be evaluated for its validity, reliability, deficiencies and strengths. The next step involves classification of data in a way which is suitable and meaningful for understanding for the given purposes of study. At this stage a decision needs to be made concerning the analytical methods to be used which are appropriate for the given situation. There is also a need for design for analysis. This analysis should be accomplished in terms of earlier stated dimensions and perspectives. From this analysis certain conclusions should be arrived at concerning the nature and function of the various components, sub-systems and their relationships. The people should be directly involved in this process of analysis so that they can understand and feel the basic problems involved, needs, and possible resources.

Synthesis -

Synthesis is a process of putting together various information and knowledge to arrive at the understanding of the magnitude of needs and problems which have to be dealt with within the limitations of available resources. It involves a decision on relevant synthesis methods, study design and synthesis of components and relations in terms of dimensions and perspectives. It further involves projections (high, medium and low) of needs; resources; problems and constraints; possibilities, directions and concepts. Finally it involves a delineation of conclusions concerning the nature of the problem to be dealt with.

The processes of inventory, analysis and synthesis are very much related to each other and often are hard to separate. All through this process there should be sound theoretical bases and direct involvement of the people influenced and the people making decisions.

Stage three -

This stage involves the three crucial steps of directive phase, solution phase, and evaluation. It involves the question of goals, objectives and possible plans and policies to deal with the problems as arrived at in stage two.

Directive phase -

The purpose of this phase is to arrive at general and specific goals to provide directions for dealing with the needs and problems of the human settlement. At this stage the major inputs will be concerning definition and delineation of socio-cultural variables which will help or hinder in the planning process. This is also the most crucial stage for citizen participation. Because, as stated in the philosophy part of this thesis, planning is for the people and thus it is most logical that they decide what

they wish to be done. They are the ones who will provide the goals expressing needs and desires. Here it is the important role of the planner to provide relevant information concerning the community's overall problems and needs, so that people will have a sound basis for making a decision concerning goals and objectives.

In this stage the first step is to delineate values and meanings. This will require various types of data, which include historical influences, basic attitudes; opinions, aspirations; evaluation of community services; reactions to public issues; basic social proceeses; imageability; organizational structure; the leadership and decision pattern; and needs, etc.. From these values and meanings some general goals can be arrived at. The next step is the delineation of specific objectives. Along with this, there needs to be the delineation of requirements, concepts, principles, standards and criteria of judgement. Decisions arrived at this stage will provide direction for future planning and implementations. In the light of later developments, occasionally these goals and objectives may have to be modified to meet the changing needs and situations. This phase should have an overall unity of purpose.

Solution phase -

This phase includes plans, policies, evaluations and final decisions. The purpose of this part is to develop a sound, comprehensive and well defined expression of goals, and to provide a range of choices available for guiding community growth and development, and providing a means to evaluate and judge these alternatives.

This phase requires a clear definition of the plan which is specified in Chapter Six. The plan is a statement of goals and policies along with their bio-physical, socio-cultural and psychological representation and

interrelation. For the same set of goals there will be different plans and comparable policies. It should also include basic assumptions, actions and consequences of these actions, so that they can be evaluated by experts as well as the general public.

In the overall category there are two basic types of plans. The first common ones are directional plans. These plans attempt to guide growth and change in the real world towards desired directions. The second, and least understood but most crucial, are operational plans. These are the plans which relate the directional plans to the real world. The plans present a proposal for various aspects mentioned in the studies. Some of the studies will feed into more than one plan, such as the demographic study. These two types of plans are listed below.

1. Directional plans -
   a) Health plan - Will make proposals for the biological, social and psychological health, related services, activities and actions.
   b) Social plan - This will include a plan for modifications in the social institutions; plans for creation of new institutions needed to meet present and future demands of the society; plans for human resource development; plan for social equity and justice for all members of the community; and a plan for social welfare.
   c) Economic plan - This will propose a plan for type and level of economic activities in the region; and propose plans for the sub-elements of commerce, industry, employment, finance and economic standard of living, which will contribute to the overall economic plan for the region.
   d) Natural system resource plan - This will propose a plan for natural resource development and utilization which will be in harmony with the natural ecological system.

e) Quality of environment plan - This will propose a plan for overall quality of environment, which will have sub-plans for the quality of artifacts; quality of natural and biological environment, pollution, landscape, etc.; and quality of socio-cultural environment. These sub-elements will include plans for control of negative factors as well as proposals for provisions of positive factors.

f) Transportation and land use plan - This will propose a plan for transportation and related land use patterns and their effects on life and activity patterns of the peop le of the region.

g) Community facilities plan - It will include plans for facilities listed in the study part. It will also include their quantitative, qualitative, location, time and relationship aspects.

h) Utilities plan - This will include the plan for the mentioned utilities in terms of production, distribution (to the users and after the use), consumption, related facilities, location, timing, and costs of development and maintenance.

i) Housing plan - This will propose a plan of housing supply, demand and need, along with proposals for types of housing and resource available for fulfillment of the plan.

2. Operational plans -

a) Information, education, and communication plan - This will provide for types of information and education about plans, planning and planning projects along with the plan strategy of communication of these with the general population, individuals, and public and private groups. This plan will emphasize the two way communication of information and ideas.

b) Implementation plan - This will include advise, control, inducement

and development proposals which will aim to achieve realization of directive plans in the real world.

c) Administrative policy plan - This will be a dynamic policy proposal for guiding day to day activities in relation to long range goals and plans, in relation to the demands of the real world.

d) Review, evaluation, modification and adaptation plan - This will propose strategies and techniques for continued review, evaluation, modification and adaptation of ideas and directive and implementive plans, in light of new information and ideas gained through the communication and interaction with the real world.

Here it must be realized that these plans do not stand in isolation, but they are part of the comprehensive master plan of the settlement as a whole. The relations between these plan components were delineated at the study stage and they are carried into plans. Thus in essence each plan is a plan of the named component plus its relation with other components.

Evaluation phase -

It is not sufficient to only have plans, but they must also be evaluated for their relative merit. Evaluation should be by the experts as well as by the general population and by the people directly influenced by these plans. Evaluation is the most critical step in the process of planning and implementation. Evaluation in this context is the judgment of plans and their alternatives in terms of a certain set of criteria which reflects the needs, values, desires and capabilities of the community. Evaluation should consider the quantitative as well as qualitative aspects of every project and their alternatives. Often different criteria have different values to the community and thus they must be weighed accordingly. Here for evaluation purposes ten basic

criteria have been selected.[68]

1. Needs and desires - These include needs of the general population, individuals, groups, sub-systems, and technical needs; in physical, biological, social, cultural, psychological and functional terms. There are three types of groups. First, interest or hobby groups. Second, civic and racial groups. Third, special groups, which include the old age group, minority groups, etc. We must also consider the urgency of needs.
2. Comprehensiveness - First it involves comprehensiveness in terms of overall components and their relations. Second, it involves comprehensiveness in terms of relations to biological, social, cultural, psychological and functional aspects of the proposed plans and their alternatives and as they relate to other plans and parts of the community. Third, it involves comprehensiveness in terms of how well they meet the needs of all five subsystems.
3. Overall values - Plans should also relate and respect the values of the community, and work within these limits unless it specifies and justifies the reason of need for modifications and changes in the value system.
4. Long range plans - The plan should be, with possible minor contradictions, in harmony with overall public and private plans of the community. The public as well as private plans should be represented in the form of a comprehensive master plan for the community.
5. Standards and principles - The plans should conform to relevant, time proven and specified standards and principles.
6. Goals - The plans or alternatives should contribute to the fulfillment of the overall aims given in the comprehensive plan and the specific objectives of the particular area. The extent of harmony and contribution should be taken into account.

[68]Morris Hill, "A Goal Achievement Matrix for Evaluating Alternative Plans," Journal of the American Institute of Planners, XXXIV, No. 1 (1968), 19-28.

Relative Weights→															
Projects & Alternatives	1 Needs & Desires						2 Comprehensiveness	3 Overall Values	4 Long Range Plans	5 Standards and Principles	6 Goals	7 Policies	8 Time	Advantages and Disadvantages		10 Feedback & Reactions	Overall Score
	General Population	Individual	Technical	Groups			Biological Physical Social Cultural Psychological Functional							Tangibles	Intangibles		
				Interest	Civic	Special											
1																	
2																	
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REMARKS
1. Every project and its alternatives should be considered in quantitative as well as qualitative aspects.
2. Goals, standards, needs and policies will be listed in terms of priorities and weighed accordingly.
3. Special Group refers to: Aged, children, minority groups, etc.
4. Alternatives and/or projects will be scored from -3 to +3.
5. Addition of points will be a guide to final decisions and not the only criteria.

7. Policies - The proposed plan should also be in harmony with the overall policies of the given human settlement, and should use them as guide lines.
8. Time - In evaluation, time should be considered in terms of overall length, the start and finish of the time period, and its various sub-divisions.
9. Advantages and disadvantages - Here we should consider tangible (money, materials, etc.) as well as intangible (social and psychological, etc.) advantages and disadvantages. Further discussion of these is given in group seven of perspectives.
10. Feedback and reactions - This involves weighing of projects based upon the reactions and comments of the general population and experts, as to projects, desirability, feasibility and its consequences. In evaluation, criteria should be weighed in relation to the specific project under consideration. These criteria should be given some numerical rating to provide comparability and exchange among the criteria. Here they will be rated from -3 to +3, where -3 is the least desirable and +3 is the most desirable rating.

This evaluation process is presented in Figure Twelve. This evaluation matrix applies to plan as well as project evaluation. It must be stated that this matrix is just a flexible framework and must be adapted and modified to meet the changing situations.

Stage four -

This stage includes implementation and continued planning. All the previous stages are of little use if this stage fails. It is the stage where theories, plans and projects are related to reality, and attempts are made to modify reality according to the goals and plans.

Types	Projects in Terms of Priorities	Time	Responsibilities and Resources		Feedback Evaluation Alteration Modification
			Individuals and Groups Involved	Money and Other Resources	
Advise, Information, Education	1 - 2 - 3 - . .				
Controls & Regulations	. . . . .				
Inducement	. . . . .				
Development	. . . n				

Figure 13 - Implementation Grid

Implementation -

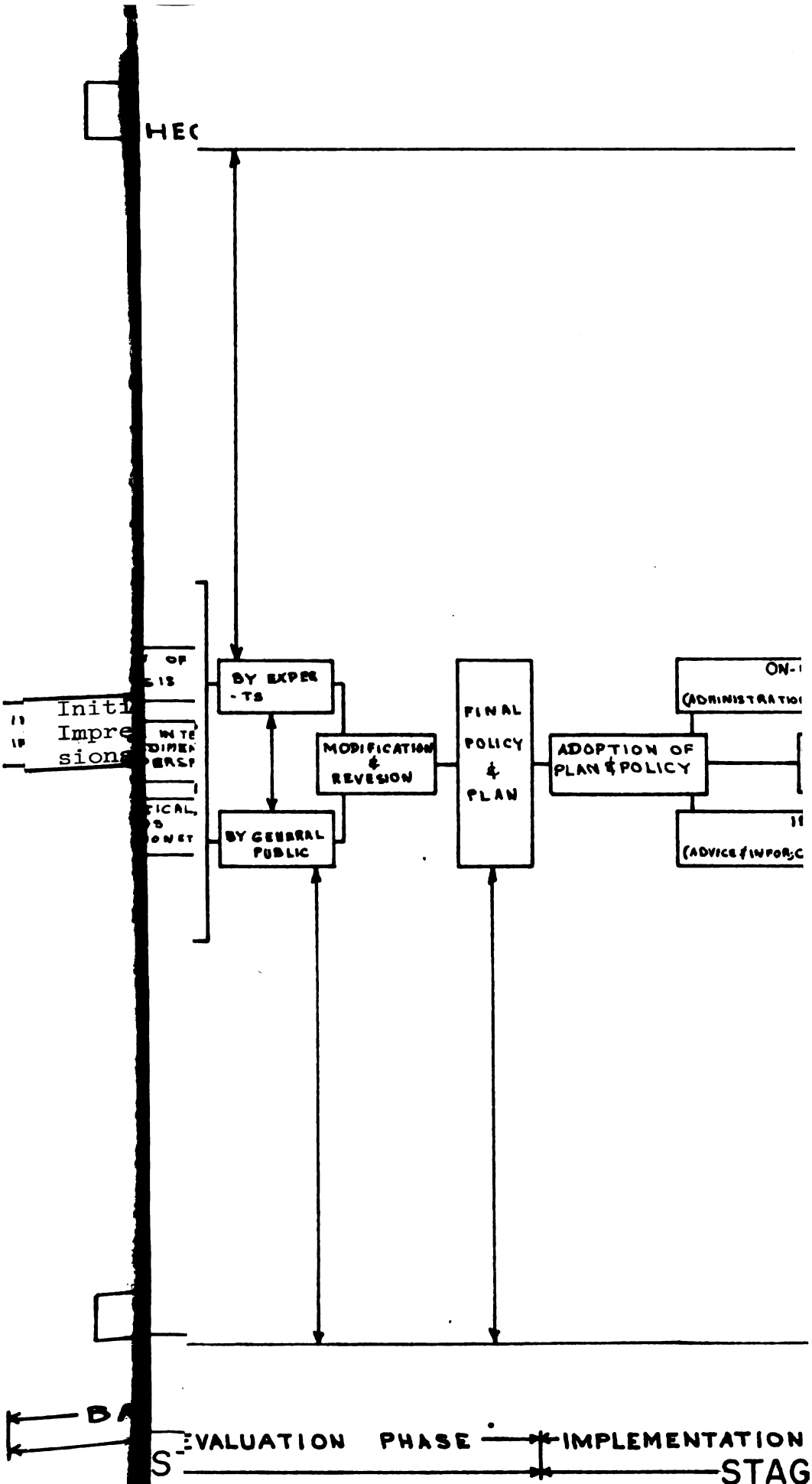
The purpose of this step is to actualize the goals and plans into reality. At this stage various detailed implementation programs are prepared for the fulfillment of the directional and operational plans. These implementation tools and programs have to be related to the on-going processes of the community. These on-going processes include administration, socio-economic cycles, finance, planning, politics, etc.. At this stage an operational interrelational model should be prepared from various operational plans. The objective of such models is to relate the on-going process to the implementation tools and projects. There are four basic types of implementation activities. They include advice, information and education; controls and regulations; inducements, direct or indirect; and development. Within each program or project there can be one or more of these implementation activities. As for example, for a housing project, all four types of these implementation activities may be utilized. In implementation there should also be considerations of time, responsibilities and resources, feedback, evaluation, alterations and modifications. This is represented in illustration thirteen.[69]

Continued planning -

Planning is a process, thus it is a continuous activity. There are certain specific activities and projects and there are day-to-day activities. These continued planning activities include coordination, administration, interpretation, information and education, review and modifications, and general research. For planning to be successful these activities should be consistantly and efficiently performed on a year around basis.

In the comprehensive planning process these four stages and three levels are continually interacting and evolving.

[69]J. W. Reps, "Requiem for Zoning," Planning 1964 (American Society of Planning Officials, 1964).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FI PROCESS

SUMMARY AND CONCLUSION

In this thesis the author has attempted to present concepts relating to human settlement in a comprehensive theoretical framework. It is indicated that human settlement has five basic sub-systems which include man, social institutions, culture, nature and artifacts. These sub-systems also have the five basic dimensions of unity of purpose, space, time, dynamics, and organization. Any human settlement functions with reference to these five basic dimensions. It is the contention of the author that man is the reason as well as the cause for the growth, dynamics and development of any human settlement. Ten groups of perspectives are presented to effectively perceive, study and plan human settlement. It is also the contention of this author that comprehensive planning must include biological, physical, social, cultural, psychological and functional variables to the human settlement. This theoretical framework is applied to the dynamic planning process, to make it operational and meaningful.

In Part One, in the discussion of philosophy it is stated that human settlement is more than the sum of its parts, and thus the understanding of the whole is crucial to the understanding of the parts and their interrelations. In the critique of planning theory and process it was stated that the existing planning theory does not provide this holistic and comprehensive view of human settlement and its planning. This thesis has attempted to meet these deficiencies of planning theory and process. Part One of the thesis also attempts to bring out some basic questions relating to the nature of the human settlement planning, and thus sets up the basis for a theoretical framework.

The second part defines human settlement as an interacting whole of five sub-systems of man, social institutions, culture, nature, and artifacts. In any human settlement, man, who is part of social institutions, modifies nature into artifacts through the intervening variable of culture and in turn he is influenced by his environment. Values and other cultural variables play a major role in determining how man meets his needs and desires, and thus what settlement pattern evolves due to man's decisions. Effective human settlement planning requires unity of purposes in time and space reference, so that meaningful dynamic organization may take place to achieve the desired results. A comprehensive framework of perspectives is also required to perceive and plan human settlement.

In the third part it is stated that theory (concepts) and the real world (percepts), both should be part of the planning process. Thus this part attempts to relate a comprehensive theory and the real world to the steps of the planning process, so that an effective and dynamic planning framework may evolve to achieve the desired results in any given human settlement.

All through this thesis an attempt was made to logically classify and define the concepts and ideas. Due to the largeness of the topic the author had to make choices for the limitation of the topic. One of the choices was to put more emphasis on structural and definitional aspects instead of interrelational aspects.

By any definition the areas of concern of this thesis are not totally exhausted. There are certain areas which can be and need to be studied further. Some of these areas include the study of the interrelation of sub-systems; a detailed study of dynamics within the sub-systems; construction of the mathematical models of parts or the overall situation; delineation and calibration of parameters, limits and degree of relations and relative influence; location and explanation of critical points of various sub-systems and human settlement

as a whole; possible application of the framework and concepts to the actual operational planning situations, etc..

As stated earlier this is not intended to be a rigid set of rules, but a general and flexible framework which will need to be and should be modified to adapt to new situations, and in the light of new knowledge and insights. It is the hope of this author that this theoretical framework will be of some contribution in the understanding, planning and actions related to the human settlement and its problems. Most of all, this author hopes that this thesis will be of heuristic value to the readers and will raise significant questions and provide motivations and directions to deal with those questions.

Appendix I

416 E. Owen Hall
Michigan State University
East Lansing, Michigan

7th January, 1968

Dear Sir:

I am an Indian graduate student at Michigan State University, presently working on my master's thesis in urban planning.

My background is in physical sciences, architecture, psychology and urban planning.

The purpose of this letter is to seek your advise and suggestions on my thesis research.

The title of the thesis is "A Comprehensive Theory of Human Settlement-A Framework for Planning Process." The purpose of this thesis is to bring together all relevant, material and non-material, aspects of human settlement in a comprehensive theoretical framework, and to provide a comprehensive framework for looking at these aspects, and finally to apply this to a logical planning process so that this theoretical framework may become operational.

Attached along with this letter are: information request, possible thesis outline, explanatory remarks and diagramatic summary of theory and its application.

An early response will be highly appreciated.

Thank you.

Sincerely yours,

Satyendra Singh Huja

Thesis Advisor:

Prof. S. Farness
Dept. of Urban Planning
Michigan State University
East Lansing, Michigan

INFORMATION REQUESTED

Name & Address	Profession	Special Field Of Interest

1) Critique of overall structure and modifications.

2) Remarks on theory application to planning process.

3) Additions, subtractions and reorganizations.

4) Definitions of the terms and elements indicated in diagrams.

5) Relevant references to authors, books and periodicals.

6) Any other remarks.

7) Modifications of thesis outline

Notes -

1) Please give special consideration to the parts and definitions which are directly relevant to your area of concern or specialization.
2) Additions and modifications may be done right on the diagrams.
3) Remarks of your colleagues and students will also be appreciated.
4) Please indicate if you will be interested in having copies of these diagrams or thesis.

"A Comprehensive Theory of Human Settlement-

A Framework for Planning Process"

Part I Introduction
- -Definition of problem
- -Purpose & critique of planning theory
- -Philosophy

Methodology
- -Study design and description of its elements
- -General literature study
- -Formulation of theory and framework (1)
- -Exploratory papers and critiques
- -Formulation of theory and framework (2)
- * -Critique
- -Reformulation and modifications of theory (3)
- -Final Research and writing of thesis

Part II Definitions
- -Comprehensive
- -System and sub-systems
- -Human settlement
- -Planning
- -Planning process
- -Framework

Structure, Sub-systems and interrelations

Structure and interrelations
- -Overall setting
- -Basic process
- -Classification and its reasoning
- -Sub-system overall relations

Sub-systems
- -Man
- -Socio-cultural institutions
- -Value and meaning
- -Knowledge and information
- -Nature
- -Artifacts

Interrelations
- -Internal
- -External
- -Over-all

Perspectives
- -Definition
- -Purpose
- -Perspective
  1 to 30
- -Interrelations
- -Application

Part III Theory Application to Planning Process
- -Critique of existing planning process
- -Proposed planning process
- -Theory application
- -Purpose & explanation of planning process steps

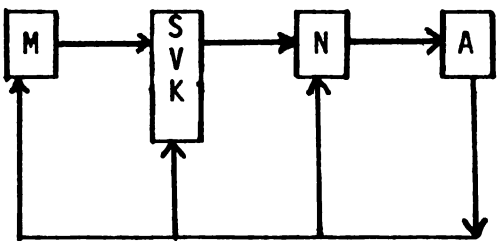
Conclusion
- -General Conclusions
- -Study application and suggestions
- -Future directions

Appendix

Explanatory Remarks

1. Here the basic assumption is that human settlement has material as well as non-material aspects which are in continuous interaction, and understanding of these aspects and their interrelations is a basic necessity for effective and meaningful planning of human settlement in organic, physical, socio-cultural and psychological aspects.

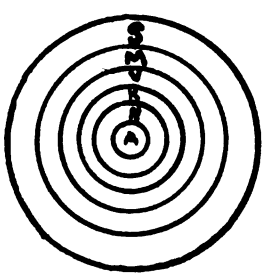
2. Basic question - How man, through intervening variables of institutions, value and meaning, knowledge and information, modifies nature into artifacts and how in turn they influence man and intervening variables.

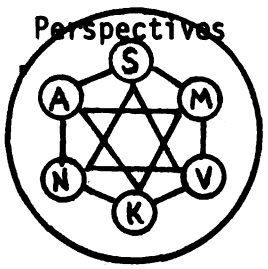


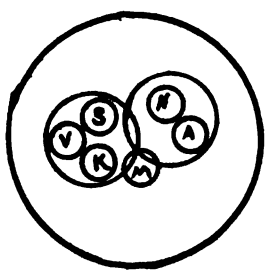
M = Man
S = Socio-cultural institutions
V = Value & meaning
K = Knowledge & information
N = Nature
A = Artifacts

3. Here it is understood that all things and other aspects belong to institutions and that there is horizontal as well as vertical interaction between these sub-systems of the human settlement. It is also recognized that in terms of interrelations, these six sub-systems can also be divided into three groups, the first containing S,V, & K, the second containing M, and the third containing N & A.

These sub-systems can also be divided into three levels, some of these divisions in level III are still incomplete.



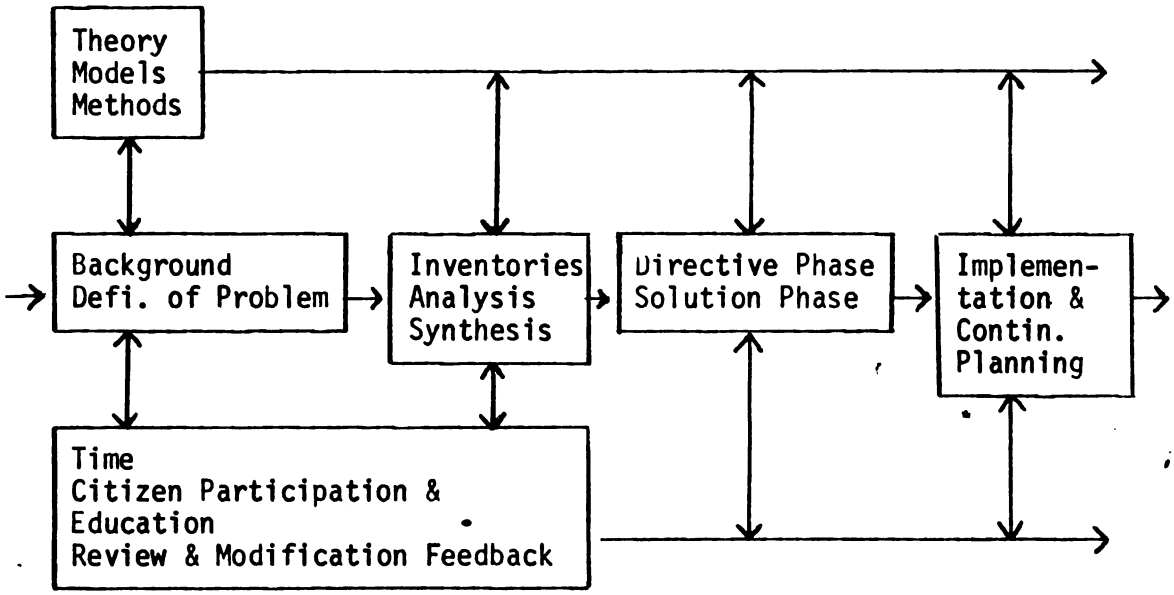




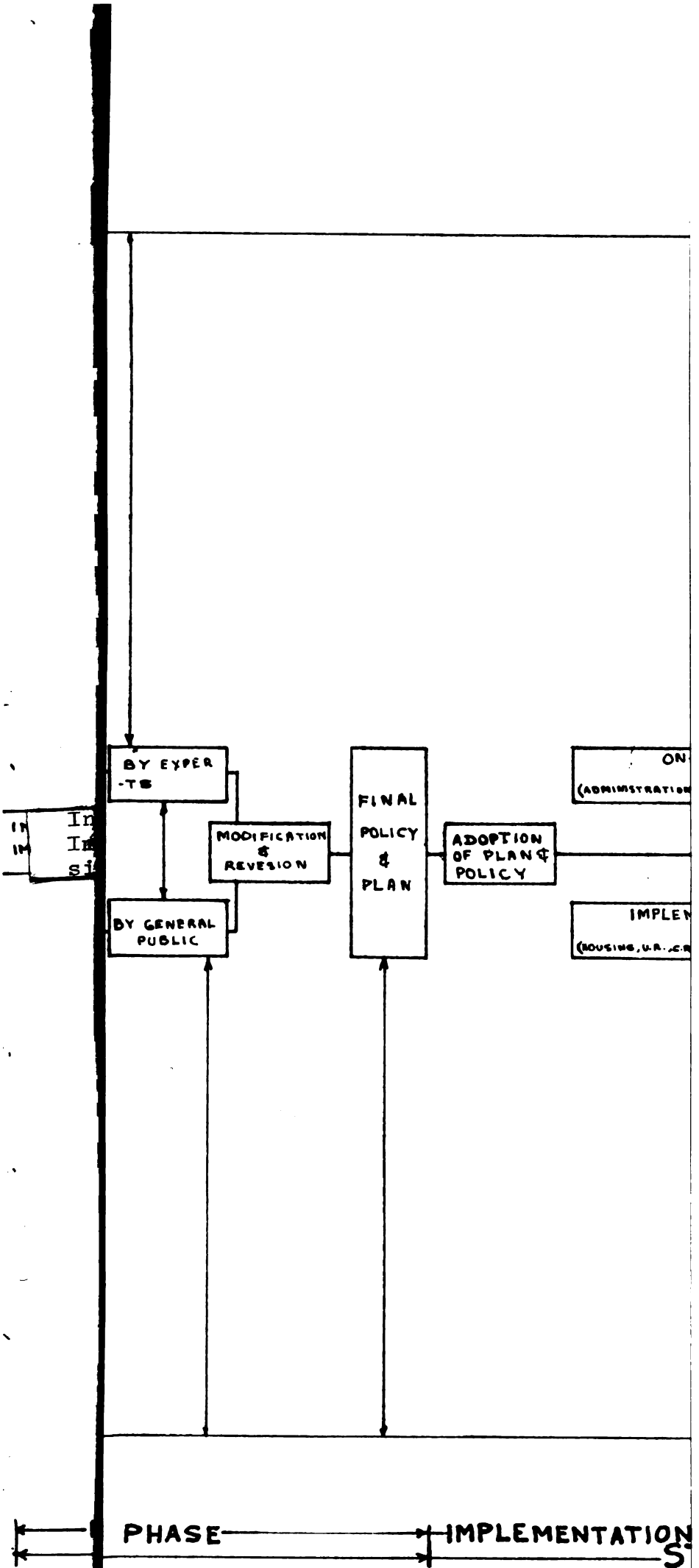
HUMAN SETTLEMENT

4. Here "perspectives" imply to the modes of viewing at the human settlement. Many of these are given in terms of continuum. Each sub-system at each level must be considered through these perspectives, even though some will be more relevant than others in different situations.

5. Theory application to planning process - Following is the diagramatic summary of this:



Here methods imply to inventory, analytical, synthetic, evoluative, and programming techniques. As, simulation, systems analysis, P.E.R.T. and C.P.M., operations research, socio-metrics, etc..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ARTIFACTS

AGRICULTURE

TRANSPORTATION & MOVEMENT

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PEDESTR
HUMAN & ANI
-MAL POWER
COMBUSTION
(CAR, TANCO
BUS, ETC)
FIXED PATH
AIR CUSHION
ELEVATED
UNDERGRO
-UND
AIR
PLANES
HELICOPTER
V.T.M.
ANTI-GRAVI
-TY
WATER
SHIPS
M. BOAT
SUB-MARINE
AIR-CUSHION
MANPOWER
ATOMIC SHIPS
SPACE
SINGLE STA
-GE
MULTI-STAGE
MIXED
ARTERIES &
CHANNELS
NODES
TERMENALS,
& STORAGE
RELATED SERV
ICES, TOOLS &
ART IFACTS

RECREATION & LEISURE

OPEN SPACE
& FOREST
REGIONAL PARK
METRO. PARKS
NEIGHB PARKS
PLAYGROUNDS
PLAY LOTS
TOT LOTS
GARDENS
BOTONICAL
ZOOLOGICAL
OTHER
FAIR GROUNDS
PLAY FIELDS &
COURSES
WATER FRONT
AIR REC.R.
REST AREAS
DRIVES & WALKS
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COSIDERATIONS

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ERNAL
TY
DIS-USE, MIS-USE
IBUTION
TION
-STOCK
ABLE LIFE SPAN)
E & MEANING

CHARACTERISTICS
ORGANIC
PHYSICAL
SOCIO-CULTURAL
PSYCHOLOGICAL
CRITICAL FACTORS
TRENDS

LEVELS

NEEDS & DESIRES

PERCEPTION

CAUSE-EFFECT

Appendix II
Basic
Human Needs

Biological -

1. Visceral - For foods, water, oxygen, sleep, the elimination of waste and other substances and conditions necessary for life.

2. Safety - In relation to avoidance of bodily harm or damage.

3. Sex - Basic to the perpetuation of the species and important to individual fulfillment.

4. Sensory and Motor - In order that bodily equipment may develop and function properly. Sensory is especially important for mental stability, integration and problem solving ability.

Social - Social and psychological needs are hard to separate.

1. Social interaction and communication - This is most basic of the needs of man and is the first step towards meeting other social and psychological needs.

2. New experiences - To avoid monotony for self enhancement and actualization.

3. Security - It develops and is related to the need of adequacy, uncertainty of new situations. It is a tendency to hold on to a source of assured gratification.

4. Response - It is related to love and relatedness. It is important for morale and efficiency.

5. Recognition (social approval, status, etc.) - It is made of social reward and gives the feeling of belonging.

Psychological - These are influenced by the learning and social processes.

1. Order and meaning - To achieve meaningful pictures of his world and of himself in relation to it.

2. Adequacy and competence - Adjustive resources have to be adequate for coping with a stressful situation, otherwise we tend to become confused and disorganized.

3. Self esteem (worth) - To feel that we are worthy of the respect of others. We usually judge our worth in terms of values and standards around us. It is an important variable in successful problem solving.

4. Love and relatedness - The need to love and be loved is crucial for health, personality development and functioning.

5. Sense of identity - This could be with other men or with places and objects. This provides a reference point and a sense of belonging.

6. Self enhancement and growth or self-actualization - To actualize his potentialities and fulfill himself as a human being.

There is a hierarchy of needs. These needs to be fulfilled in the approximate order: hunger, thirst, sex, safety, love, social needs, esteem and self-actualization. In other words, first physical needs have to be met, then social and finally psychological. For a satisfying life, man has to meet all these basic needs.

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