It is a truism that every research topic reaches a point where greater return comes from a synthesis of findings already presented than from investing time and resources in an additional research study that may lead to unnecessary replication with alterations of names and places. It is particularly so in case of diffusion - adoption studies. Moreover, certain shortcomings of such research have been pointed out, i.e. dependence on recall data, using individual as unit of analysis, lacking relational analysis, overconcern with optional decisions excluding collective ones, emphasis on nature of innovation impeding theoretical integration etc. (Rogers and Shoemaker:1971:77-85).

However, it is of some importance to realise the usefulness of such micro-studies, since the aggregate data at the national or state levels do not explicitly reveal the real situation on the ground and regional variations (Dasgupta:1975). To counter the practice of rather dictatorial disaggregation of macro-level decisions (Mishra et al.:1978:24), certain critical micro-level studies are required to provide empirical substantiation and justification of the alternative theoretical stance. The need of another micro-study in a relatively backward region acquires some importance.
Domain of Diffusion-Adoption Studies:

The diffusion-adoption research have been concerned with varied innovations seen through the prisms of different disciplines (Katz et al.:1963). They have not been able to advance beyond preliminary data-gathering and surface correlations, mainly due to partitioned scholarships and substantial differences among competing disciplines. Seven major (i.e., anthropology, early sociology, rural sociology, education, medical sociology, communication and marketing) and six minor (i.e., agricultural economics, geography, general economics, speech, general sociology and psychology) traditions have been delineated as disciplines concerning themselves in one way or another with the broad area (Rogers:1962:21-56; Rogers and Shoemaker:1971:49-70). The main forms of at least three disciplines - sociology, anthropology and geography - has had much in common, that is, dwelling on the impact of communication or interaction and of socio-cultural resistance to innovation on diffusion and adoption over time and across space. Other concerns have been rate of adoption, perceived attributes of adopters, earliness of knowledge about innovations, opinion leadership, communication channel usage and consequences.

Sociological Perspective and Rural Sociology:

The present study falls under the domain of rural sociology, to be precise, sociology of rural development.
Sociological perspective is deemed 'to provide ways of trying to understand the social world' (Cuff and Payne: 1979:2). Being "a synthesizing perspective" (Beteille: 1974:8) it is not confined to studying "the residual phenomena left unpre-empted by other disciplines", but it is an "integrative discipline" (William:1982:11). On the other hand, rural sociology is deemed "to offer expertise on social problems, such as the viability of small villages, and active and passive forms of rural development" (Cloke: 1985:2).

However, rural sociology has traditionally been awarded low status within the sociological profession and assigned a somewhat peripheral role. This has been reinforced by the separated institutional development of rural sociology (especially in agricultural universities that has not always been conducive to intellectual creativity, Hightower:1973) and its uneasy and uncertain relationship with general sociology. Moreover, it has always been prone to self-doubt particularly regarding definitional issues, contributing to the continueing lack of confidence in scientific status of rural sociology. Precisely to gain this, the rural sociologists have emphasized methodological (i.e. technical) rigour. The absence of general theory of rural society was presumably to be fulfilled by piecemeal construction on the basis of.
rigorous scientific inquiry allied to sophisticated quantitative data analysis. However, by early 1970s, the realisation was growing that methodological rigour was not an end in itself still less a factor that would lead to reconstruction of a theory of rural society ex nihilo (Hagan: 1975; Lowry: 1977; Picou et al.: 1978). But the prevailing image of rural sociology as a quite backwater characterized by shallow empiricism and theoretical conservatism has persisted.

Although, the laments of rural sociology's isolation from sociology and theoretical shallowness have an element of truth, but adoption of the mainstream postures on the part of the parent discipline can do little to address the key social issues, intellectual problems and institutional political dilemmas that face rural sociology. To some extent, rural sociology has only mirrored the failings and limitations of sociology. To be sure, it has benifitted from advances in techniques, and to a lesser degree, in substance. Its proximity to the real world of political and economic controversy has prepared it for a form of sociological practice that is both reflexive and practically useful. It may put rural sociology in conflict with groups that have vested interests in the disposition of important public issues. Indeed, it has its shortcomings such as "downplaying economic and political structural issues and reasonings, belief in progress and incremental ameliorism". (Hinkle: 1980;4).
Technological change is considered to be "an enduring force of history through the increasing differentiation in the form of tools and implements", the constant addition of inventions, increased empirical knowledge and "the resulting ability in utilization and exploiting the natural environment" (Prasad:1971:317). During the 1950s and 1960s, rural sociologists had shared the generally accepted view that technological change in agriculture caused benign, or even positive, social effects. Indeed, rural sociologists had helped to lubricate the mechanisms of structural change in the American agriculture by their work on the diffusion of innovations - frequently regarded as singular success story for 'scientific' rural sociology (Rogers and Shoemaker:1971 and others). Despite being methodologically rigorous, such works are narrow in empirical reach. The problem have been approached via the investigation of the social psychology of individual innovators, hardly considering structural inhibitions on innovation, or social consequences of technological change beyond the bland assumption that everyone would benefit and benefit to the same extent.

However, by the late 1970s, it was becoming apparent that rural sociologists had naively put under the carpet the widespread deterioration of the social conditions of
significant sectors of the rural population - principally the poor and underprivileged whom they had believed development had been helping. The main reason for this can be traced to ignoring the economic activity and the system of agricultural production (considered to be the province of agricultural economists), that were considered to be an exogenous factor impinging occasionally upon the values, culture and folkways of the rural people. It has been suggested that "a 'sociology of agriculture', that is more theoretically informed, holistic, critical and radical", and concerned with study of structural transformation is being developed in the 1980s (Newby;1983;Flinn:1982).

**Sociology of Rural Development:**

Theoretical approaches to the study of rural development have been formulated in response to specific types of questions which are concerned with the transformation of rural society and more specifically with factors in promoting socio-economic change (Long;1977:5). The questions are concerned with general consequences of commercialization of agriculture, impact of urbanization and industrialization on rural society or particular social institution; identification of local institutions or macro-level factors that facilitate or inhibit socio-economic development; differential responses and receptivity to economic opportunities.
between groups (both being the concerns of studies in diffusion-adoption of agricultural innovations), formulation and effect of development policies of governments, and the intended and unintended outcomes of specific rural development programmes. They also include questions of mechanisms by which particular rural areas are sucked into the national and international economy, the role and characteristics of various influential groups, the relations between different modes of production and differences between peasant and non-peasant cognitive systems.

**Approaches to Rural Development:**

There can be two broader approaches or 'macro-orientations' of rural development: the modernization approach and the Marxist analyses of underdevelopment (Long: 1977: 6). The former subsumes a wide range of types of analysis based on such notions as structural differentiation and the traditional/modern dichotomy (Hoselitz: 1960; Eisenstadt: 1966, 1970; Epstein: 1962, 1973; Smelser: 1971; etc.); the rural-urban continuum (Redfield: 1941, and its criticism by Sol: 1958; Lewis: 1965; Pahl: 1966) and the concepts of structural and cultural obstacles or pre-requisites to development (Foster: 1973; Moore: 1963; Mosher: 1966; Geertz: 1963; McClelland: 1961; Hagen: 1962; etc.).
The Marxist approach takes as its central premise, penetration and dominance of underdeveloped societies by external centres of power (the former termed as 'satellites' or 'periphery' and the latter as 'metropolis' or 'centre'). The structural dependency relationship exist within a nation as well in the forms of internal domination and striking inequalities between different sectors of the economy. The approach examines the differential control of economic and political resources between region and social groups (Baran:1957; Frank:1969, 1975; Szentes:1971; Saul and Arrighi:1973; Cockcroft et al.:1972). The problem of the interconnections between different modes of production is also analysed to explore the multiplicity of modes and relations of production in the underdeveloped and developing countries (For Indian Context, Thorner:1982).

The differential responses to change and adoption have been analysed by 'transactional approach' dealing with socio-economic opportunities and systems of exchange, and entrepreneurs' transaction identification (Barth:1963; Klausen:1968); and 'the decision-making approach' (Ortiz: 1973; Moerman:1968). These approaches may indicate why certain categories or social groups are more strategically situated to take advantage of changing economic conditions.
While 'modernization approach' have implicitly been accepted by most researchers of diffusion-adoption; the Marxist analysis has not explicitly found place in it. As ambitious conceptualization is not intended here, only their relative significance has been pointed out. Since the process of diffusion-adoption of agricultural innovations is a part of programmes and policies of agricultural and rural development, it is imperative to analyse critically their approaches.

Approaches to Rural and Agricultural Development and Planning:

Rural development planning concepts have progressed considerably in recent years. Whilst the planning and implementation are carried out by interdisciplinary teams of development specialists, the process remains basically politically oriented, and must work through power structures, both at the national and the local levels, with the former asserting its structural primacy.

National political philosophy determines the choice of the type of development strategy to be adopted. It is said that there could be two major approaches: 'the improvement approach' and 'the transformation approach' (Long:1977:144 ff). The former concentrates upon improving the agricultural production and organization of production within existing socio-legal system, through improved
extension work. But the latter seeks to establish new forms of agricultural and social organization, making a radical break with existing system.

With some variation, three distinct strategies have been proposed: the technocratic, the reformist and the radical (Griffin:1973; Barraclough:1973). These differ in their ideologies, objectives, dominant forms of land tenure and the distribution of benefits. Most of the societies are situated somewhere along a continuum between the two extreme strategies. However, certain idealtypical examples can be pointed out such as, Brazil, Philippines, Indonesia, South Korea and others following the first strategy; India, Mexico and Pakistan following the second strategy; and USSR and China following the last strategy.

Dilemma of Priorities:

Whatever the approach or strategy, the problem remains of having to establish priorities in investment of scarce capital, resources and efforts. Most of the societies face the dilemma of making a choice between two generally conflicting alternatives: "to apply the scarce resources in such a way as to (a) achieve the maximum economic returns on a national scale, or (b) to achieve 'social equity' by improving the situation of the most underprivileged sectors of rural society" (Arnon:1981:511).
In popular parlance they are referred to as growth vs justice dilemma in terms of immediate development.

The corresponding approaches of these alternatives are respectively called 'crash modernization strategy' and 'progressive modernization strategy' (Johnston and Kilby: 1973:279). The former presumes investment in the 'leading sectors', e.g. in the most promising regions and the most progressive (rich) farmers; whereas the latter signifies concentrating all resources on the improvement of the most backward regions and of subsistence farmers. Two alternate approaches to accelerate production have been suggested: national commodity programmes and defined area projects (Wortman and Cummings:1978; Pearse:1980).

In order to achieve the most rapid increase possible in agricultural production, most developing countries have opted for the 'crash modernization' approach, side-tracking structural issues. As a result, the great disparities between the regions and sectors have been widened.

There is no consensus as to whether the strategy should be based on a policy of efficiency or of equity. Most social scientists agree that a rigid adherence to one or the other policy is probably not tenable. Efficiency alone cannot provide a satisfactory guideline because the increased disparities between sectors is politically and
socially dangerous, and in the long run economically counterproductive. Complete commitment to equity is not realistic in view of the scarcity of available resources. Probably, a certain widening of inter-regional and interfarm inequalities is an inevitable concomitant of the progressive modernization of agriculture, whatever the strategy adopted. There are likely to remain regions that are ecologically more favoured, and farmers with more than average ability or greater resources than others.

**Indian Context:**

Rural planning in India is characterized by a paradox. There are emphatic egalitarian declarations, programmes and rhetorics; but apparent trend towards inequality is observed; because power is in the hands of such people who can afford egalitarian laws and policy measures but are in an unchallengeable position to prevent their implementation.

In the first stages of development plan, India adopted the 'progressive modernization' strategy. Subsequently, policymakers realised its pitfalls, and then, adopted 'crash modernization' one (Mathur;1965). Agricultural development policy, as has been widely noted by competent researchers, has clearly had output growth (production) as its main objective, bypassing the social imperatives of equity and judicious distribution. Its cornerstone was selective

Initially, it would have been preferable to avoid agricultural stagnation at home and humiliating food dependence abroad. The immediate policy options might have been limited in the circumstances of food crisis and given structural compositions. Its success has defied all the pessimistic predictions of doomsayers (like Paddocks:1967). Yet it "cannot substitute for other policies to assure social justice" (Nayar:1983:321), though it has been propagandized implicitly as an alternative to land reforms and to other structural alterations (George:1977:113). Moreover, to presume that its benefits would 'percolate down' to the smallest of the farmers and labourers with increase in growth and employment opportunities, has proved futile. Certain shortcomings at the level of planning have been pointed out, such as 'urban bias' (Lipton:1968:127) and influence of rural elite and industrial lobby (Dasgupta: 1977:377).

As the new technology of farming is dependent on the use of costly inputs, it is biased against the millions of
small and marginal farmers who find themselves pitted against a system of delivery (of inputs) controlled and cornered by a rich minority. It has increased the economic power of large commercial farmers, at the one hand, and dependence of smaller farmers on them on the other.

Myth of Surpluses:

Furthermore, there prevails a wider misconception about wonderful and overflowing surplus production in agriculture, partly created by Government spokesmen by making short-term comparisons between selected years. If long-term comparisons based on three-yearly average production figure is made, an entirely different picture emerges. The rate of growth of foodgrain production was 3.50 per cent between the trienniums 1950-52 and 1960-62, 2.61 per cent between 1960-62 and 1970-72, 2.36 per cent between 1970-72 and 1982-84, and only 2.30 per cent during 1977-78 and 1982-84. It has shown slight improvement as the production of 150.5 million tonnes of foodgrains in 1984-85 indicates an annual growth rate of 2.53 per cent between the years 1970-71 and 1984-85 (Singh:1985). The burdensome accumulation of surpluses positively indicate skewness in the distribution system, as there is still large amount of unsatisfied demand for food in the country. It also indicates that the benefits have been cornered and is still being grabbed by a few commercial farmers.
Indian Rural and Agricultural Development Programmes:

An understanding of 'practice of development' often reveals more about socio-political interests than do policy documents per se. However, it is not possible to analyse the organisations, implementation and effects of numerous programmes. Only a brief critical appreciation is intended.

Government of India has apparently adopted the 'improvement' or 'crash modernization' approach, as it rests on modernization view of change, including the stress on diffusion of innovations and resources to the 'traditional' rural sector. In order to increase production, it has also adopted the 'national commodity programme' and 'defined-area programme'. It is evident in the initiation of a plethora of programmes. They ranged from a generalized Community Development Programme to specific agricultural development programmes (e.g. Intensive Area Development Programme, High Yielding Varieties Programme etc.) to extension programmes (i.e. Training and Visit System, Lab to Land etc.) and to deprived socio-economic group and area development ones (i.e. Small Farmers Development Programme, Marginal Farmers and Agricultural Labourers Programme, Drought Prone Area Programme, Crash Schemes for Rural Employment and numerous others), most of these merging into Integrated Rural Development Programme.
All programmes are geared to such organisational and legislative setup as not to upset the existing structure of socio-economic relationship (Franknel:1978). It is cogently suggested that much against the run-of-the-mill objectives of the initial programmes (e.g. CDP) listed by many scholars (Dayal:1960; Jain:1967, Ensminger:1972; etc.), the implicit objective was to contain the spread of Communism (Davey: 1975; Verma:1980) in India; and was an integral part of the post-war effort to contain social revolution and keep India safe for profits (Feder:1976; George:1976). It was done under the garb of financial aid, but with intentions of getting markets for multinational agri-business.

Multiplication of programmes and adding on to responsibilities at the local level, have led to strengthening of routinization and consequent reduction in challenge and efficiency of functionaries. It has not only served the interest of richer farmers (Dube:1967; Epstein: 1962, 1973; Bettelheim:1977), but the "power of privileged minority stands in the way of effective implementation" (Mathur:1984). The general shortcomings of CDP are applicable to other programmes as well, which are elite bias, bureaucratization, decisions taken above and communicated below, lack of social work skills and lack of coordination and so on (Desai:1961). Despite lack of comprehensive studies on their effects, partial studies and ad hoc
evaluation by the Planning Commission and independent analysts find hiatus between objectives and implementation of these programmes (Paul and Subramaniam:1983). All that the programmes, particularly IRDP seem to have done is some distribution of doles for face-saving device to substitute for effective steps to eradicate poverty (The Times of India:1986). Without organization, mobilization and realisation of struggle against exploitation as well as deprivation, the poor section is not likely to be benefitted by any development programmes (Ray:nd).

**Approach and Concepts of Diffusion-Adoption of Innovations:**

The diffusion and adoption of agricultural innovations has explicitly been a focal measure to agricultural development. The variants of 'modernization approach' have been the underlying conceptual basis for the governmental efforts and even of evaluation. There is, however, some ambiguity in terms of conceptual basis in most studies, except a few with some input of Marxist analysis.

An attempt has been made here to explore historically, the conceptual presuppositions and frames of reference that has motivated the massive endeavours towards diffusion and adoption of agricultural innovations. In spite of being aware of the inadequacy of modernization approach, the problem has been primarily analysed in its reference. One
of the relatively older variant of this approach is 'diffusionism', though it has assumed varied and diverse forms in the course of development (Desai: 1975).

Diffusionism:

Diffusionism can be taken as the germinal concept to diffusion-adoption studies. It is modification on 19th century socio-evolutionism and had flourished in the 1920s. Diffusionism* has contributed to rectify the onesided emphasis of the 'linear concept of evolution' in cultural anthropology. But it could not be free from setting forth questionable generalisations in study of area, alteration, routes, velocity, obstacle and favourable conditions of diffusion of a tangible cultural feature, i.e. pot design, farming technique, rite, myth, belief etc. (Sorokin: 1978: 747).

Diffusionism criticizes 'stages theory' of social evolution on the ground that societies often obtain cultural traits from others and could possess characteristics which they logically ought not to have, according to some evolutionary schemes. It further subsumes that underdeveloped

*The prominent anthropologists adhering to 'diffusion' have been F. Graebner and his pupils, W.H.R. Rivers, Elliot Smith, W.J. Perry, Franz Boas, R.H. Lowie, A.L. Kroeber, A. Golden-Weiser, C. Wissler and others.
societies lack "knowledge, skills, organization, value, technology and capital" that is possible, for a switch-over to development, through diffusion of all these from developed societies (Desai:1975:10). As a corollary numerous socio-economic, socio-cultural and socio-physiological factors have been delineated that obstruct, distort or facilitate diffusion-adoption, that is by implication, development. It may also be conceived as "follower syndrome", a tendency of Asian (and other) intellectuals to seek Western solutions to their problems (Doh Joon-Chien: 1980).

Modern diffusionism implies belief in myth of development model of advanced capitalist countries as a kind of linear progress. The implicit assumption is that all societies are climbing the same ladder, but are on different rungs, and that all should want to reach its top. The corollary is that this can only be done through the use of Western-manufactured inputs, and adoption of the processes and technology that have brought growth to developed societies. It has inevitably led to belief in indispensability of aid from developed countries, whereas in fact, under the myth of altruistic welfare, the latter exploit the underdeveloped societies to serve their monopolistic economic and consequent political interests (Tinbergen: 1977:39-40).
Diffusionism, moreover, bypasses the fact that no society can obtain a cultural or other items from another unless it has developed receptivity on its own and is ready to use it. It also fails to explain why certain items originate in the first place except by assuming that at least one society has intrinsically reached a certain stage of development. On the whole, pure diffusionism has more trivial and untenable notions (Cohen:1975). Yet with the spread of modern means of communication cutting across cultural and national regional barriers, it is both illogical and a-historical to maintain that each technique, tool, procedure or institutional mechanism must be discovered de novo by each society. The late starters need not and could not have to suffer the travails of early trials and errors of forerunners. As a wit put it, "we don't have to discover electricity as it has already been discovered".

**Diffusionism and Agricultural Innovations:**

Despite the fact that the beginnings of agriculture are lost in the dim past of prehistoric times, various studies of agricultural origin and diffusion, on the basis of archaeological and anthropological evidences, suggest that the international and intercontinental diffusion of cultivated plants, domestic animals, hand tools and
husbandry practices were a major source of productivity growth in prehistory and in the classical civilization (Wolf:1966; Harris:1967; Sauer:1969; Brown:1971; etc.). But not all areas of the world were caught up at the same time equally in this process. Its acceptance permitted the unfolding of other levels of productivity and social organization as well as functional division of labour.

Before the institutionalization of research and extension, the diffusion presumably took place in an unplanned and nondeliberate way as a by-product of travel, exploration and communication undertaken for other purposes. Over a long gestation period - from several decades to centuries in different areas - plants, animals, equipments and practices were gradually introduced and adapted to local conditions. In the 19th century, the international diffusion process became more highly institutionalised (Rutton:1975). National governments established agencies to seek out and introduce exotic crop varieties and animal breeds. Colonial governments and the trading companies sought to introduce crops with export potential into new areas of agriculture. Yet in modern times, the same could be used with advantage to overcome limitations of single commodity economies, import substitution being an essential ingredient of efforts at self-sufficiency.
The same diffusionist trend has now culminated into a large scale introduction and diffusion of new high-yielding varieties of wheat, paddy and maize in the tropics (e.g. some countries of Latin America, Asia and Africa), involving transfer of scientific ideas, scientists, research facilities and more importantly modes of organization (Stakman et al.:1967; Gruber and Marquis:1969). Its only positive effect may be seen in transfer of capacity to invent new, location-specific seeds and others.

The diffusion of a cultural trait including a piece of technology primarily depends for selectivity on those who initially control its development, dissemination and use. Is it any wonder that diffusion too, by and large, strengthens the existing asymmetric international and national power relations? And indeed, this approach of mindless borrowing has explicitly benefitted the already privileged section, and increased the inequality as what to import and the specific use of that item, is determined by the power-wielders nationally as well as internationally.

**Major Concepts Used in Diffusion-Adoption Studies:**

As pointed out in the preceding pages, the studies of diffusion and adoption of agricultural innovations forms part of the 'modernization' approach. Its main concerns
have been to find out certain facilitating or inhibiting factors. But most of the causal and correlational interpretations have more arbitrariness, since the tendency have been to generalize on the basis of certain prevalent notions and presumed cause-and-effect relationships.

The concepts have been touched upon earlier, but some of them may be critically analysed in detail. The concepts in use are agricultural innovations, diffusion and adoption, characteristics of adopters, stages of adoption and concerned dimensions.

**Innovations:**

In analysing innovations, the prime concern is with a process in which an item (or set of items), involving perception of new ideas, is or is not transmitted between persons. It is well to conceive of it as a connected process of many creative acts, from research through service, involving human ingenuity and creativity as well as cooperative actions of people (Morton: 1971:4).

Innovation may be considered as a special kind of change, that is planned and consciously intended (Baily: 1971:117). Innovation may be both material and non-material, as an object as well as on idea inherent in it, concerned
with institutional and organizational principles or procedures. Some innovations may have mere idea component such as news events, rumours, ideology etc., that requires 'symbolic adoption' (Rogers and Shoemaker:1971). What sometimes matters much is perception of 'newness', not the objective newness as measured by the lapse of time since its first discovery or use (Fligal et al.:1968). Such perception may be expressed in knowledge, attitude or a decision to use it. However, it has been observed that an innovation becomes adoptable for masses only when it no longer appears quite new, having become integrated in the system (Mendras:1970:33). The fact that an innovation does not get accepted immediately and simultaneously by the heterogeneously constructed group is being resisted by saying that those who accept late, do not get it 'new'. Moreover, with the passage of time, the coverage become larger (i.e. by 'masses'). Since it is presumably opposed to the existing norms, it is seen as an effect of social deviance (Hoselitz:1975:65), and resistance to it as some sort of self-defence mechanism (Dumont and Rossier:1969:46).

The perception of requirement and attributes of innovations is bound to vary according to one's placement and related needs in society. For conceptual purposes, certain characteristics of innovations have been delineated,
such as relative advantage over prevailing ideas; compatibility with existing values, needs and experiences, complexity, trialability, observability, divisibility, communicability and so on (Rogers and Shoemaker: 1971: 22-23). But such attributes are not necessarily perceived clearly by adopters or rejectors, making it difficult to generalize. The same problem comes up in attempts to classify innovations (Mukherjee: 1976: 140).

Since innovations are essential ingredient of planned social change, it involves the perceptions of policy-makers and technocrats or scientists. They denote not only a power group, but a general expression of cultural imperatives characterized by diversionary tactics (Roszak: 1973: 6). They endeavour to reduce "tension born of deficient organization, privation and injustice". Those who form policies and govern, justify themselves by appeal to "technical experts and scientists" who, in turn, may oblige them by scientifically arriving at convergent findings, and justify themselves by appeal to scientific forms of knowledge. This circular argument further legitimizes and justifies the exploitation and inequality.

Diffusion and Adoption:

Diffusion has diverse connotations. Natural sciences perceive diffusion as the process by which "the particles
(molecular or ions) of a substance dissolved in a solvent constitute a state of continuous random movements". Social sciences consider it as the process by which cultural innovations spread from its sources of origin, invention or creation to its ultimate user*. Viewed sociologically, the process of diffusion involves "adoption over time, of an idea or practice, by individuals, groups or other adopting units linked to a social structure at a given system of values and culture, and to specific channels of communication" (Katz: 1963). This definition has been followed with near unanimity in most innovation studies.

In the present study, both the terms - diffusion and adoption - have been used interchangeably (following Mukherjee: 1976: 140). However, conceptual differentiation has been made, the diffusion being "spread of new ideas from source to adopters" and the adoption being a "mental process through which an individual passes from first hearing about an innovation to final adoption" (Rogers: 1962: 13 & 74); or a "decision to adopt or reject, and to confirmation of this decision" (Rogers and Shoemaker: 1971, who prefer to term it as "innovation-decision process": 25). Adoption has also been viewed as a process by which an innovation is integrated into an ongoing operation through

*It has been analysed as a spatial process as well (Hagerstrand: 1967: 1).
"repeated and continued use" (Lionberger:1960). As "extended use" is more important, it is conceived as a "stage where use of practice commences" (Pareek and Chattopadhyaya:1966). However, the adoption process may undergo modifications in varied situations and individual activity.

**Stages of Adoption:**

The process is portrayed in stages for heuristic purposes. But the stages must be regarded as a conceptual framework for organizing data rather than a set of testable hypotheses by recording overt empirical behaviour (Katz: 1971:811). Moreover, there is little agreement over the numbers and sequences of stages and terms used. The numbers oscillate between two to eight in various studies (initiated as four stages by Ryan and Gross:1943, and tested later by Rogers:1962 as five stages; Singh and Pareek:1968 as eight stages; Singh:1973 as three stages). On a broader conceptual level, the stages have been bifurcated into "cognitive" and "behavioural", the former involving awareness, information and evaluation; and the latter involving action, that is, use of innovations may or may not precede discontinuance (Pareek and Chattopadhyaya: 1966). From the functional point of view, it has been categorized as knowledge, persuasion, decision and confirmation (Rogers and Shoemaker:1971).
In actual practice the stages may occur in a different order, or in a different way (including skipping of stages) for some individuals and in case of some innovations. There are virtually no studies to substantiate the confirmation stage, since enough time has not yet elapsed to evaluate it (Tylor and Miller:1978). They are best taken as social scientists' analytical tools rather than descriptive concepts.

There are serious methodological problems in studying stages. Most of the questions asked of respondents may be designed "to operationalize replies in the direction of a multi-stage model", despite use of structured methods and depth interviews (Campbell:1966). Perhaps the respondents' behaviour is thus structured into the researchers' conceptual mold. Furthermore, the recall of times and informations' sources at the stages in the process is certainly not completely accurate. Respondents may even tend to report a decision that is more rational than in fact is the case, or rather the response generated by researchers' cues. Consequently, such considerations has led to avoidance of analysing stages in the present study.

Factors Effecting Adoption and Adopter Categories:

The assumption of effecting factors (consequence of adherence with 'modernization' approach) has made most
adoption studies to stop short at identifying adopters' characteristics (Singh et al.:1970; Roy et al.:1968). Such studies have historical roots in the American studies. It implies study of early adopters' adoption behaviour, presumably 'good' farmers (at the other end of the continuum are non-adopters, 'bad' farmers!). Such analysis is deceiving despite being enticing (Mendras:1977:133).

The evidences of small farmers' sophisticated decision-making provide other pattern of adoption, and necessitate the analysis of entire farming system in which they operate, and their preference system (Helliener:1975:48). To the extent that divergent behaviour is attributable to differing factor endowments, access to information or input availabilities; it can be interpreted in terms of variants of modernization approach. But core differences between the small and rich farmers lie in other areas, presumably linked to their attitudes towards risk, access to power and distribution mechanism; the investigation of which is generally overlooked despite importance. The tendency to condemn the unsuccessful is in most cases rooted in failure to appreciate the differentials of supportive situations and the potentials of alternative calculus.

The usual pattern of early adopters' characteristics and determining factors of differential response (adoption)
may not have causal base. Most of these, however, are concerned with bio-social traits, socio-economic status, efficiency (entrepreneurship), socio-political participation, use and exposure of various information sources and communication channels, outside contacts, certain socio-psychological aspirations and orientations and so on (A list of factors and characteristics based on various studies are in Rogers and Shoemaker:1971, Appendix-A).

The variations in studies of different areas and sections not only indicate differential responses, but also the difficulty in generalising and conceptualising. The question remains to be answered yet, whether the adopter categories have theoretical grounding.

**Adopter Categories:**

Adopter categories are based on time sequences of adoption, mostly in terms of "innovativeness", a presumed degree to which an individual is relatively earlier in adoption. There are no pronounced breaks in the innovativeness continuum, as the categories are ideal types. There is arbitrariness in not only placing various adopters in some category, but about the terminology used that has led to numerous descriptions. In a primary way, it is categorized into innovators, early and late adopters (Dasgupta: 1963). Rogers' categorization is prominently used, that partitions them into five categories: innovators, early
adopters, early majority, late majority and laggards. The dominant values of subsequent categories are presumed to be "ventursome, respectable, deliberate, skeptical and traditional" (Rogers and Shoemaker:1971:183-85). In terms of proportion of recommended practices adopted, the categorization has been done as high, intermediate and low (Singh and Reddy:1965). Thus, in all cases, we find similar procedure and effort to build an ordinal scale but not converging towards any commonly accepted tool. Such attempts are similar to a snapshot depicting a person at one point of time.

The studies of diffusion and adoption of agricultural innovations are based on conceptual 'modernization' approach and its variants. The policies opted by the governments to introduce new technology were primarily based on 'improvement approach' or 'crash modernization approach', that has explicitly led to the widening of hiatus between the privileged and underprivileged sections of rural society. Various development programmes have followed the same path, with similar effects.

The notion of 'diffusionism' is the underlying concept germane to all diffusion-adoption studies. An implicit assumption of superiority of Western technology
and pattern of development, and its imitation can be discerned both in practice as well as theoretical appreciation. Such presumptions have inevitably led to predominant analysis of certain facilitating or inhibiting factors and communication behaviours determining the adoption process.

It is of some significance to test the notion of adoption studies in a supposedly backward region of the country, in order to verify its applicability, and to find out certain variations in the pattern of adoption.