CHAPTER I

INTRODUCTION

A livelihood is sustainable when it can maintain or enhance the different elements which determine living of an individual or group of people. In addition to it the livelihood must be also capable to cope and recover from stress and shocks for sustainability. Assets, capabilities, activities and the access to these things are the basic elements affecting livelihood. Sustainable livelihood thus encompasses the multiple elements which influences the living.

1.1 Sustainable Livelihood: Concepts and Issues

Sustainable livelihood approach place the poor at centre stage. It explores certain aspects of their livelihoods which are commonly neglected. These includes the multidimensional nature of poverty itself, the diverse and dynamic nature of their 'portfolios', the complex nature of vulnerability, and the complexities of accessing both capital assets and entitlements provided by the state and others. The approach starts with a few entry points and it gradually builds up. It is to be seen not only holistically but also in the dynamic sense. Holistic in the sense that it encompasses every element which influences the living and dynamically means the multitude role which is played by the individual factor of livelihood has to be taken into the account.

Household assets and capabilities are the basic components of livelihood. It broadly includes natural, physical, human, financial, public and social capital as well as household variables. Based on access to a particular set of assets and capabilities different activities are employed by the household. These are like inputs which lead to the different strategies of livelihood. Within a household these components interact with each other and give self defined goals, termed as livelihood outcome. Sustainability of the livelihood is based on this livelihood outcome. Food security, gender security, better health condition, increase in income, better living condition, reduced vulnerability are some of the requisite as livelihood outcome for sustainable livelihood. The asset base and capabilities are to be maintained both now and in future in all time period (in normal and stress) for sustainable livelihood outcome. It is to be noted that the use of
assets and its outcome is related to the intensity of an activity which in turn depends on the degree to which the assets are used. The different subjects of livelihood are linked with each other and this linkage is to be understood in livelihood studies. There are certain factors on which the activities are dependent- natural forces and human forces, the market, state and civil society. There may be number of other sources - single or multiple, from which outcomes of livelihood may arise. In the broad area of livelihood activities like participation in a community projects or labour exchange which help the household to entitle in future social claims are also included.

In addition to assets, capabilities and activities, access to the capital is equally significant aspect in the sustainable livelihood approach. Amartya Sen (1999) has highlighted the influence of accessibility on his discussion. He uses the concept of endowments, entitlements and capabilities to throw some light on people's access to natural resources. He explains, livelihood not only covers endowments which in simple term is the right in principle and entitlement which means what one really gets. But it also covers the ways of gaining access.

Robert Chambers and Gorden Conway in 1992 by the joint effort brought the 'sustainable livelihood approach' in the centre stage. As the livelihood approach emerged, different organisations like DFID, CARE, UNDP, IDS and such started their debate and promoted new approaches and models. The central focuses of these models are on people, their needs and perception. It aims to explain the relationship between people, their livelihood and also the different policies along with their institutions. It though primarily focuses on material improvement but it also has a close link with the political, social and economic approach. Sustainable livelihood is derived from people's capacity to exercise choice, access resources and use them in ways by which they do not close the options for others to make their living either now or in the future. With time the understanding of livelihood has to go beyond the economic or material objectives of life. The response to new opportunities and choosing between different values position now came into the broad arena of livelihood. Qualitative aspects are thus very integrally bounded within the concept.

Above discussion displays the complex and varied nature of sustainable livelihood. To simplify the complexity of livelihood analysis and for understanding the linkage within
the factors ‘framework’ is offered by different development organisations. They seek to understand the needs of the people and how these needs are met in order to improve livelihoods. CARE’s model centres on a households livelihood strategy whereas the DFID stresses the importance of capital assets on livelihood. UNDP explicitly focuses on the importance of technology as a means to help people rise out of poverty (DFID, CARE & UNDP).

The framework helps not to overlook the multiple and interactive factors influencing livelihood. It also works as a guide to consider and prioritize the less visible factors. The main function of framework is to provide a method for thinking. It is to be noted that the framework does not attempt to provide an exact representation of reality. According to M.Kollmair, St.Gamper and Juli (2002), framework provides a checklist of important issues and sketches out the way there links to each other while it draws special attention to the core influences and processes and their multiple interaction in association to livelihood. In the context of designing research Ashley & Carney (1999) also referred framework as a ‘checklist’ of issues. Scholars have found that in one study it is not possible to consider everything of checklist. According to the objective of the study the framework has to be modified. Referring about an Indonesian study Diana Carney (1998) pointed out that the framework cannot adequately represent urban realities. On concluding she stated that usefulness of sustainable livelihood framework as with any tool is set by the user. Mechanically the framework will give poor results. She suggested that framework to be effective, has to be underpinned by a commitment to think through and priorities of livelihood issues.

Sustainable livelihood approach of DFID has six principles:-

a. People centred
b. Responsive and Participatory
c. Multi level
d. Conducted in partnership
e. Sustainability
f. Dynamic.

The starting point of the model is the vulnerability context within which people operate. Attention is next given to the livelihood capital (assets) from which people can draw
upon their livelihoods. These assets interact with policies, institutions and processes in shaping the choice of livelihood strategies. These in turn shape the livelihood outcomes. Each of them is composed of elements which are discussed below.

**Vulnerability**: Trends and shocks are the key elements in the vulnerability context. They can have either a positive or a negative effect on livelihoods. Trend involves changes that take place over a longer period of time. Shocks are usually sudden events that have a significant impact — usually negative — on livelihoods. They are irregular and vary in intensity and include events such as natural disasters, civil conflict, losing one’s job, a collapse in crop prices for farmers etc.

**Livelihood capital** — Five assets (financial, physical, social, human and natural) are discussed below on the basis of which livelihood strategy is built up.

*Financial capital* — It is the financial resources that people use to achieve their livelihood objectives.

*Human Capital* — It represents the skills, knowledge capacity to work, and good health that together enable people to pursue different livelihood strategies and achieve their livelihood outcomes.

*Natural Capital* — It is the term used for the natural resource stocks (e.g. trees, land, clean air, coastal resources) upon which people rely.

*Physical Capital* — It comprises the basic infrastructure and physical goods that support livelihoods. Key components of infrastructure include: affordable transport systems, water supply dwelling unit and sanitation (of adequate quantity and quality), energy (that is both clean and affordable), good communications and access to information.

*Social Capital* — It relates to the formal and informal social relationships (or social resources) from which various opportunities and benefits can be drawn by people in their pursuit of livelihoods.

**Policies, Institutions and Processes (PIPs)** — It comprises the social and institutional context within which individuals and families construct and adapt their livelihoods. As such it embraces quite a complex range of issues associated with power, authority, governance, laws, policies, public service delivery, social relations— gender, caste, ethnicity —, institutions — laws, markets, land tenure arrangements — and organisations — NGOs, government agencies, private sector.
Livelihood Strategies—It include how people combine their income generating activities; the way in which they use their assets; which assets they chose to invest in; and how they manage to preserve existing assets and income.

Livelihood Outcomes—These are the achievements— the results of livelihood strategies. Outcome can be examined in relation to the achievement: More income, increased well-being, reduced vulnerability, improved food security, more sustainable use of the natural resource base, social relations and status dignity and (self) respect and such other. These are set according to the objective of the work.

The livelihood approach and framework originated in rural area but it can be applied in urban area too. The framework of DFID generally analyses the risks to which the poor in particular are vulnerable and the strategies they adopt in striving to achieve livelihood outcomes such as higher household income. Livelihood strategies have different settings in rural and urban areas. Rural strategies often involve a variety of different activities as cultivating, exploiting common property resources, rearing livestock etc. They are almost totally dependent for their livelihood on environment resources and on their own labours. They have very little access to different capital assets. On the other hand urban livelihood strategies are mostly dependent on capital and labour. In urban centres mostly legitimate and illegitimate livelihood opportunities are available within the informal economy. Stretton almost three decades back expressed the difficulty of understanding urban life by stating that the life of a modern city is very complicated. The citizens have intricate patterns of common and conflicting interests and tastes and beliefs, and individually and collectively they have very unequal capacities to get what they want for themselves or from one another. From that tangle of powers and purposes comes a social life so complicated and partly unpredictable that any understanding of it has to be incomplete.

There is a wide gap between demand and supply of essential services and infrastructure in urban area. This leads to deterioration of environment and quality of urban life. Migrants coming from rural areas are increasing the gap. In a globalizing world with an improved transport and communication the linkage between the rural and urban is becoming very easy. Members of rural household thus now can migrate to urban areas easily to sell their labour to remit their income to their rural household
members. Urban strategies may involve substantial transportation/travel back to rural areas of origin, as well as complicated remittance arrangements involving other family members (Singh and Gilman, 1999). This is one of the few avenues open to the rural poor households to increase income and combat poverty. Poor urban men and women make a trade off between the quality and the location of their living spaces. They mostly live in areas with poor insanitary environments in order to be in a preferred location for easy access to livelihood generating assets. These areas are frequently located on polluted land close to industrial facilities or where waste dumps are sited and water courses are contaminated, or on hillsides and river plains which are susceptible to landslides and flooding. In addition, men women and children working in informal sector enterprises normally work without protection and are vulnerable to accidents in the workplace and the health hazards associated with unsafe working environments and practices. In India using poverty lines it is estimated that, 40–50% of slum households live just below the poverty line, and 11% just above it. However it is estimated that only 40–60% of the urban poor in India actually live in squatter settlements – the rest live on pavement dwellings, in tenements, or commute daily from rural areas. This means that the conditions and sources of vulnerability faced by these various groups of poor people vary widely so they cannot be targeted by poverty lines (Barret and Beardmor, 2000).

Without any skill and assets the migrant worker tends to end up in the unorganised sector. The unorganised sector activities which are carried out on the site like building constructions, roads, highways bridge construction, stone quarrying, coal mining etc. absorbs such migrant worker. This sector attracts the population as it does not demand conventional qualification or skills and it has also minimum norms or restriction for entry. This group is more vulnerable to stress and shocks.

In sustainable livelihood analysis women must be able to live equally with men. Therefore gender equality is one of the key issues in livelihood analysis. This can be done through sex desegregation of broad based livelihoods data, or through undertaking a specific gender analysis (Kath Pasteur, 2002). Gender discrimination excludes women from the equal access needed to sustain livelihoods, increases their dependency and locks them into long-term poverty traps. Gender equality does not
necessarily mean equal numbers of men and women in all activities, or simply the same treatment. It signifies an aspiration towards a society in which neither women nor men suffer from poverty, and both are able to live equally fulfilling lives (DFID, 2000).

Ensuring adequate stock and flows of food is accepted as another essential requirement for the removal of poverty and for sustainable livelihood in all its dimensions. In this context the growing recognition of food security is reflected. A sustainable livelihood approach to food security is people centred. In the recent period for the sustainability of livelihood only food security is not accepted as sufficient and satisfactory matter. The biological absorption of food in the body is also an important factor influencing the living of the people. The absorption is related to the consumption of clean drinking water as well as to the environmental hygiene, primary health care and primary education. Along with this, long term sustainability of food security system requires satisfactory ecological condition (M.S. Swaminathan, 2001). In food security livestock provides income and food to the poorest people which play a significant part in the livelihood. Studies have found that women play a very important role in handling domestic produce all over the world (FAO). But their limited access to the marketing and services work as serious limitation in sustaining livelihood. This increases their dependency and locks them into long term poverty trap.

1.2 Evolution of the Sustainable Livelihood Approach

In 1972 at the United Nations Conference on Development held at Stockholm the issue of sustainability was first raised but economists were optimist about the limits to growth set by environment and natural resources. It was mainly believed that technological progress would overcome any limits. Earlier concern about sustainability was centred on the occurrence of pollution for the depletion of ‘non renewable inanimate resources’. In 1980’s the focus shifted to the ‘loss of biodiversity’. The ‘World Conservation Strategy’ of 1980 was a turning point, as the importance of conservation of natural biological resources for human welfare was realized. This focus was further strengthened in report ‘Our Common Future’ or ‘Brundtland Commission Report’ of World Commission on Environment and Development, 1987. The Brundtland Commission Report of 1987 offered the first appearance in policy debate of what was
conceptualised later as Sustainable Livelihood Approach. The report put the concept of sustainable development firmly on the global political agenda. As an official agenda the concept of Sustainable Livelihood thus first came into being in 1987 with a publication of this report. Gradually in UN Conference on Environment and Development held in Rio de Janario, 1992 adopted Agenda 21 which broadened the concept and sustainability in livelihood came into the discussion (Ahmed and Doelman, 1995).

It is thus found the concept of Sustainable Livelihood is linked to various aspects of development in various contemporary global meets such as Social Summit, Rio Conference, Beijing Conference and so on so forth (Asgar Ali Sabri, 2004). It is explained that from 90’s the environmental issues started playing a prominent role in livelihood studies. Solesbury (2003) explains that the 1987 Brundtland Report (WCED, 1987), ‘The Greening of Aid Conference’ at the International Institute for Environment and Development in the same year and the first Human Development Report in 1990 (UNDP, 1990) and finally the paper of Chambers and Conway gave out a finally a global insight to the approach.

From 1993, organisations like Oxfam, CARE, UNDP and DFID started adopting Sustainable Livelihood Approach in different development and poverty removal project. These organisations started regular publication on Sustainable Livelihood Approach from 1995 onwards. In 1999 DFID first publishes ‘Sustainable Livelihood Guidance Sheets’. In 2000 DFID commissioned and funded a livelihood connections and a website which serve as a learning platform for Sustainable Livelihood Approach.

From the above discussion we understand that the concept evolved as an integrating factor which allows dealing simultaneously - development, sustainable resources management and poverty eradication. As the approach developed it integrated production with resource conservation and enhancement. This made provision for an adequate livelihood base and equitable access to resources. Thus the evolution process indicates that with time the approach not only became ‘green’ but a new paradigm of livelihood which is much broader and ‘holistic’ came into application.
1.3 Literature review

A sustainable livelihoods approach adopts a distinctive perspective on the understanding of poverty. According to Moser (1996) and Chambers (1995) a sustainable livelihoods approach to poverty eradication is one that acknowledges, poverty is a condition of insecurity rather than only a lack of wealth. Broadly 'sustainable livelihood' is a means of living which is resilient to shocks and stresses, and which does not adversely affect the environment. Such livelihood strategies are multifaceted as men and women draw on their assets (DFID, 1998 & Moser, 1996) which are both tangible and intangible (Chambers, 1995) and entitlements (Sen, 1992).

By incorporating the term 'sustainable' the concept of development has been broadened. Development in its new version signify the process which initiates to stay, continues to grow and grows to last. The philosophy of development in its new interpretation, evaluation is man-nature interface, by which humankind continues to make progress by manipulating and managing the environmental resource base in time and area perspectives (Shukla and Sharma1996). The concept of sustainable development is a first major ideational breakthrough to halt the rape of nature. It is perhaps the most quoted word in past one decade especially after publication of Our Common Future- A Report of the World Commission on Environment and Development in 1987 (H.S Sharma and Chattophaday1998).

In Iftikhar Ahmed and J. A. Doelemans (1995), 'Beyond Rio', Charles Perrings (1995) made a detail overview of Sustainable Livelihood Approach on 'Sustainable Livelihoods and Environmentally Sound technology: Theoretical and Conceptual Approach'. He stated that the key elements in the concepts of sustainable development and environmental safety and soundness are respectively, the maintenance of the value of the asset base and the protection of the thresholds of eco system resilience. No development process may be said to be sustainable unless the value of manmade and natural capital together is non declining. On the overview of Agenda 21 he remarks that it seeks to promote sustainability not just of the development process but also of each aspect of the development process. The concept of the sustainable livelihood is introduced in Agenda 21 in the context of a program to combat poverty. The objective of the programme was to provide for everyone 'the opportunity to earn a sustainable
livelihood by tackling the causes of poverty, hunger the inequitable distribution of income and low human resource development. He remarks that it requires not only the sustainable ‘development’ of all communities within a society, but also the sustainable ‘livelihood’ of individuals within those communities, and the environmental soundness of each process. Sustainable livelihood can be secured by economic activities that are sustainable that do not threaten the integrity of the environmental assets on which both donor and recipient depend.

K. Appendini (2001), gave the central objective of livelihood approach is to search for more effective methods to support people and communities in ways that are more meaningful to their lives and needs, as opposed to readymade interventionist instruments. Appendini referred N. Long(1997), who defined livelihood as which best expresses the idea of individuals or groups striving to make a living, attempting to meet their various consumption and economic necessities, coping with uncertainties, responding to new opportunities, and choosing between different value positions. The improved understanding of the holistic meaning of livelihood (and subsequently of the multidimensionality of poverty which takes account of how poverty is perceived by the poor themselves) is an important achievement of livelihoods approach which can be clearly understood from the words of Wallmann(1984), Appendini(2001), Bebbington(1999)as stated by Leo de Haan and Annelies Zoomers on an article ‘Exploring the frontier of Livelihood Research’. They discussed the value of livelihood studies and examined the obstacles which have prevented it from making a greater contribution to understanding the lives of poor people over the past decade. They have taken out two major challenges after examining the roots of the livelihood approach: the conceptualization of the problem of access and how to achieve a better understanding of the mutual link between livelihood opportunities and decision making.

M. D. Asthana and P. Medrano (1999) gave a very simple and vivid approach of the concept. According to them ‘Sustainable Livelihood Approach’ is people centred and must begin with an investigation of the assets which people have the objectives that they hope to achieve, and the livelihood strategies that they adopt to achieve them. They stated that one of the foundations of sustainable livelihood approach is the belief in and pursuit of, various type of sustainability. This includes, but is not limited to
environmental sustainability. They remark that it is not only the existence of different types of assets that is important, for sustainable livelihood but also access, quality and how natural assets combine and vary over time is important.

According to M. Redclift (1994), the literature on sustainable development was boosted by the adoption of Agenda 21 in 1992. Redclift stated that in Agenda 21 the concept of sustainable livelihood was applied to the least well off members of society. He remarked that no matter how sustainable development is interpreted, the concept is still considered ambiguous as there is no agreement yet on what exactly to be sustained. In 'Beyond Rio' Iftikhar Ahmed suggested that the ‘sustainable livelihood’ requires the conservation of the productive potential of the produced and natural capital on which the entire community depends- currently and in the future, and a distribution of income that meets the needs of the dependent groups. On the analysis of the subject he suggests that the concern for equity in sustainable livelihood is greater than that for sustainable development.

R.K. Pachauri (2002), discussed on the evolution and on definition of the concept of ‘Sustainable Livelihood Approach’. He stated that the concept evolved out of recognition of the multifaceted phenomenon of poverty. The concept implies ‘to maintain or enhance resource productivity, secure ownership of and access to assets, resources and income earning activities as well as to ensure adequate stocks of food and cash to meet basic needs. He stated that though the concept of sustainable development was there from long period but it was at the United Nations Conference on the Human Environment at Stockholm in 1972 that the International Community came together for the first to focus on global environmental and developmental issue. The focus of the conference was to highlight the enormity of issues related to environmental degradation and ‘transboundary pollution’ and galvanizes public opinion around environmental concerns. It also led to the creation of the United Nations Environmental Programme. He explains that the close relation between environmental betterment and socio economic development is a well recognized fact and this growing concern is reflected in the well known definition of sustainable development.

Naresh Singh and Jonathan Gilman (1999), assessed the evolution of the concept starting from the report of World Commission on Environment and Development
(WCED) to United Nations Conference on Environment and Development (UNCED) and finally to the Fourth World Conference on Woman (FWCW). They explained that the idea of sustainable livelihood in WCED was a reflection of the growing recognition that food security is not merely a problem of agricultural productivity but also of poverty in all dimension. The UNCED moved the concept towards an action agenda, especially in the context of Agenda 21 which serves as an integrating factor that allows policies to address simultaneously development, sustainable resource management and poverty eradication. The links between sustainability, employment, social integration, gender and poverty eradication for policy and development programming was emphasized in FWCW. They also discussed about the problem of operationalizing the concept. As for many environmental assets there are no markets and no crises. The valuation of environmental resources depends to a high degree, on the use they have in either production or consumption. This may be direct (if the resources are used directly) or indirect (Usually in the form of the services provided by the ecological systems whose functions they support). The total value of environmental resource is the combination of this direct and indirect use value, together with any non use value they have. Any valuation of the asset based requires both a proper specification of the resource base to include all relevant environmental resources and proper valuation of these resources. Similar concern is also expressed by Richard B. Howarth (1995) who expresses that attempts to operationalize this criterion in terms of non decreasing utility or wealth meet with difficult conceptual and practical objections.

W. Beckerman (1994) criticised the concept of sustainable development for its poor definition and inoperative nature. He has referred about the strong criticism levelled by Richard B. Howarth on sustainability in the context of economic theory. Howarth argues that attempts to operationalize sustainability as non decreasing utility a position that enjoys substantial support in resource economics (Solow, 1993) are compromised by the uncertainty of future technology and preferences and by the paradoxes that surround interpersonal welfare comparisons. Beckerman, refers about argument of Page(1983) that inter generational justice can be assured by endowing future generations with a structured bequest package that include specific endowments of reproduced capital, technological capacity, natural resources and environmental quality.
Kultar Sigh (2005) in ‘Sustainable Development- concept and measurement’ states that sustainability is a broad concept, but it does not need to be ‘vague’ as Solow (1991) has argued. Interpretations that are acceptable both to natural scientists and economists should be possible. He has concluded that sustainability can be conceptualized simply and clearly by employing a conventional economics framework, based on discounted utilitarianism. In short a sustainable growth path is one which is both dynamically efficient and which is non decreasing over time i.e. it combines the concept of dynamic efficiency as well as intergenerational equity.

Alain Fowler (2000) has given the notion of sustainability as not a ‘thing’ that can be found or held. It is a condition or a property of complicated systems linking human behaviour to the natural environment. In addition, he explained that notion of sustainability is intimately tied to the idea of an enduring balance. To put another way it is implied as a given situation which is stable in a particular way. For example that resources are not being used beyond the rate at which they are being regenerated or upgraded. He concludes that sustainability implies that people are sufficiently ‘in harmony’ so that they are not upsetting a stable state of their relation and needs.

Christopher S. Sneddon (2000) asserts that the notion of ‘Sustainable Development’ has reached a conceptual dead end. At the core of these debates lies the dilemma of how to reconcile human, social and economic activities with the long term resilience, vulnerability and regenerative capacity of local global continuum of ecological systems. In this context he refers about sustainable livelihood and explains about the different stages of sustainable livelihoods model. The first stage of the sustainable livelihood model is an assumption that sustainability can only be analyzed with reference to an individual household’s livelihood patterns and what constitutes ‘a living’ under specific environmental and socioeconomic circumstances. The second building block of the framework focuses on sustainability, which consists of both environmental (‘the external impacts of livelihoods on other livelihoods’) and social (‘their internal capacity to withstand outside pressures’) aspects. Environmental sustainability stresses the impacts that efforts to sustain livelihoods have on local ecologies and how these impacts affect both the tangible and intangible assets of other people whose livelihoods, in one way or another, depend on those same local ecologies. Social sustainability by contrast.
refers to the ability of a human unit to achieve an ‘adequate and decent livelihood’ within a particular socioeconomic context (e.g. a rural village), and is made up of both reactive (coping with stresses) and proactive (adapting and creating) dimensions (Chambers and Conway, 1992). The third part of the sustainable livelihoods model emphasizes how to translate the abstract concepts of the livelihoods and sustainability into practical actions. Sneddon, states that the authors are silent on the details of community decision making that bring about changes. The notion of livelihood intensity involves a more workable move. It initially determines the capacity of poor rural communities to diversify resource uses and restore degraded land. Livelihood intensity also demands recognizing the importance of nonfarm activities and the benefits of the local circulation of goods and services.

John Brohman (1996), explains that frameworks for sustainable development are moving away from their prior technical fixation towards a more holistic focus which stresses the contextual specificity of environmental problems and includes a people oriented agenda based on the needs and rights of local people. He referred about the issues pointed by WCED in the context of sustainability. The WCED study acknowledged that sustainable development would require a radical transformation of contemporary economic structures, which would alter the way resources are owned, controlled and mobilized. To be sustainable, development must meet the needs of local people, because if not, many people will be obliged by necessity to take more from the environment than is advisable. The work of WCED made it clear that sustainability means more than just ecological and agricultural stability. It has strong political element linked to the needs and interests of the people. The concern for meeting popular need, without which the objectives of conservation cannot be attained. This inevitably gives sustainability an important component of livelihood. This connection has been made most explicit in the concept of ‘sustainable livelihood security’ developed by Chambers and Conway (1992). They stated that sustainable livelihood security is an integrating concept. Livelihood is defined as adequate stocks and flows of food and cash to meet basic needs. Security refers to secure ownership of and access to resources and income earning activities, including reserves and assets to offset risk, ease shocks and meet contingencies. Sustainable refers to the maintenance or enhancement of resource productivity on a long term basis. Sustainable livelihood security borrows ideas from
both the natural and social science. The concept implies conserving natural resources and other environmental factors that are essential to people’s livelihoods.

Sudhir Anand and Amartya Sen (2000), attempts to integrate the concern for human development in the present with that in the future. In arguing for sustainable human development, it appeals to the notion of ethical ‘universalism’ – an elementary demand for impartiality of claims. It is applied within and between generations. Economic sustainability is often seen as a matter of inter generational equity, but the specification of what is to be sustain is not always straightforward. The discipline of universalism requires extending the same concern for all human beings – irrespective of race, class, gender, nationality on generation.

Considering the holistic nature of sustainable livelihood approach and its inter linkage existing between the various variables the framework for the study is set. Koos Neefjes (2000) has expressed that the sustainable livelihood framework is essentially people centred and aims to explain (in a necessarily abstract and simplified way) the relationships between people, their livelihoods, and their environments, (macro) policies, and all kinds of institutions. Alex Farrell and Maureen Hart (1998) stated that sustainability indicators sets are generally developed within a framework, that not only organizes them but also shows whether or not they are balanced, that is whether or not they reflect the full range of sustainability concerns.

Different development organizations in past few years have carried out lot of research on rural livelihood systems and on possible intervention by development organizations. Development agencies such as DFID, UNDP, ODI, CARE, Oxfam and many others have developed their own methods and approaches in designing livelihood intervention. Details of the DFID framework are much discussed in the literature of Koos Neefjes (2000) and by Per Knutsson (2006). This framework uses the concept of capital assets as a central feature and considers how these are affected by the ‘vulnerability context’ in which they are derived, and by ‘transforming structures and processes’ (alternatively labelled ‘policies, institutions and processes’), to constitute ‘livelihoods strategies’ which lead to various ‘livelihoods outcomes’.
Scholars have given different views regarding framework of sustainable livelihood approach. Diana Carney (1998), remarks that sustainable livelihood framework is helpful in linking macro level trends to the ground level realities of everyday life. She has also pointed out that the framework does not aspire to capture all of sustainable livelihood thinking. Nor does it supply methodologies or guidance on implementing sustainable livelihood approach. The DFID (2000) ‘Sustainable Livelihood Guidance Sheet’ expresses that the framework summarizes the main components which influences the livelihoods; it does not provide an exhaustive list of the issues to be considered. Ruth Meinzen-Dick and Michelle Adato (2001), pointed out the function and limitation of the model. They explained that using Sustainable livelihood framework involves acknowledging complexities that can be hard to manage in a study. Rather than shy away from complexity, using the framework implies a willingness to acknowledge that livelihoods – and the process of impacting these livelihoods – are complex, and implies an effort to achieve the most comprehensive understanding of these issues within a given set of time and financial constraints.

The limitations of the model as given by them are:

- ‘Cultural capital’ is not taken into account.
- The notion of agency, power and empowerment is missing.
- Ignored the importance of historical factor.

Considering these limitations they suggested that the framework must be used in a manner that can incorporate change rather than taken as a snapshot of livelihoods at one point of time.

Ian Scoones (1998), on IDS Working Paper ‘Sustainable Rural livelihoods: A framework for analysis’ stated that the concept of sustainable livelihood is a composite of many ideas and interests. Indicators of sustainable livelihood are different in scope, with a range from very precise measures, amenable to quantitative assessment to very broad and diffuse indicators requiring more qualitative techniques for assessment.

On a critical review of the methods and tools used for exploring rural-urban interactions in Tanzania, it is found that combination of qualitative and quantitative technique is necessary, as the study needs both the combination of descriptive analysis
and causal explanation (Bitrina Diyamett et al. 2001). It is stated that with the help of qualitative, participatory technique the main lines of interactions between rural and urban in selected area is determined. Karen Westley & Vladimir Mikhalev (2002), made a study on use of participatory methods for livelihood assessment in situations of political instability. They made a case study on Kosovo. The methodology was based on two key designs: the livelihoods framework and participatory learning and action approaches. Ruth Meinzen-Dick and Michelle Adato(2001), expressed that use of both quantitative and qualitative method provide a richer base for analysis, where data from each method helps to interpret the other. Numbers are required to convince some audience, he states, while others will be unimpressed by numbers. Thus when in depth and contextual information is required qualitative technology is found to be useful. The major data collection methods used by them in application of sustainable livelihood framework for impact assessment in Integrated Natural Resource Management are – surveys, focus groups, key informant, interview, in depth household case studies and secondary data.

C. Cocklin (1995), discussed about the range of perspectives on sustainability focusing particularly on the interpretation in the context of agriculture and rural systems. He has referred about Gordon Conway and Edward Barbier (1988), who have addressed the question of sustainability in respect of agriculture in developing world. Their starting point is to acknowledge the significant problems that have emerged out of Green Revolution in respect of equity, stability and the sustainability of production, whatever the benefit in terms of increased output over the short to medium term. The detail of their discussion is focused at three levels- first, the international constraints to sustainable and equitable agriculture, second the influence of national policies and third on the needs of rural households in terms of livelihoods and farming systems. At the international level, sustainable and equitable agriculture development is affected by international relationships and patterns of world trade. Conway and Barbier, also refer about the various external stresses and shocks that will impinge severely upon developing countries. These include falling international commodity prices, protectionism, the international terms of trade and the cost and availability of credit and capital. Some of these are endogenous to the agricultural system whereas others are characteristics of world economy in more general terms.
Moser (1996) stated that the poor behave as 'strategic managers' in negotiating their livelihoods outcomes, by selecting from a range of options available within a particular locality and context. Beall (2001) in this context remarked that it may not be helpful to view the poor in this way as it assumes that the poor always make 'rational' choices in the construction of their livelihoods. Instead, he suggested that a broader view is required that takes account of the resources that people need in order to compose a livelihood. Beall, goes on to suggest that mechanisms for redistribution may be more critical for the alleviation of poverty than production and reproduction.

A group of scholars debated the greening of development and sustainability concept in the context of urban issues (Gordon M.C Granhan et al. 2001). On the study of deprived urban settlement in the context of the challenge of improving environmental health they have referred about two urban environmental agendas- 'brown' agenda and 'green' agenda. Of particular relevance to poor urban dwellers is the 'brown' agenda, prioritizing environmental health, and addressing the local issues. For example – inadequate water and sanitation, urban air quality and solid waste disposal. Of particular relevance to future generations and natural systems is the 'green' agenda prioritizing ecological sustainability and addressing issues relating to resource degradation, contribution to global environmental burdens and other largely extra urban problems. They suggested that it is the need for better governance to ensure that complex environmental issues are actively addressed, and both intra and inter generational equity are to be taking into account.

Studies by Cecil C. Konijnendijk, Syaka Sadio, Thomas B. Randrup, and Jasper Schipperijn (2004), explain that in the developing world, where most emerging megacities are located, managing and catering for urban populations will be one of the main challenges of present time. The influxes of rural populations will not stop which will lead to increased urbanization. Farrington John, Tamsin Ramasut Julian Walker (2002), stated the fact that in most countries population levels in urban areas are growing at double the rate of rural areas. Continuing urbanization in the developing world has led to major problems in terms of hunger; poverty; inadequate shelter; social segregation; unemployment; pollution of water, soil, and atmosphere; and so forth. Those responsible for managing cities are under tremendous pressure to develop strategies for
alleviating poverty and sustaining urban livelihoods. They argued that the development of multifunctional urban green structures can be an important contributor to sustainable urban development in terms of improving the quality of life and environment for current urban populations, without endangering the opportunities of future generations. In the developing world, green structures have an important role to play in poverty alleviation and provision of livelihoods. The Food and Agriculture Organization (FAO), of the United Nations has acknowledged its urban mandate and has developed a new program for promoting urban and peri-urban forestry, in particular for the developing countries.

Sapir Guha (1996) made a health survey of Calcutta and revealed that many slum areas covered in Calcutta had small scale economic activities which seriously threatened the health of residents and workers. For example, factories producing sulphuric acid vapour in Biplabi khudirampally slum, producing metal dust in Auxilium or the use of heavily polluted water in spoon production in Salt Lake slum. E. Wratten, (1995) have stated that the urban poor are frequently vulnerable to significant environmental and health hazards. The urban poor suffer from disease and injuries resulting from proximity to toxic and hazardous wastes, lack of clean water and sanitation and water, air and noise pollution (Satterthwaite, 1997). They are particularly vulnerable to typhoid, diarhoeal diseases, cholera and intestinal worms from contaminated water and food as well as diseases associated with poor drainage and garbage collection such as malaria (Wratten, 1995; Werna and others, 1998).

M. Douglass (1998), made a very interesting observation of poor urban livelihood. He explained that in addition to the poor urban environments which threaten men and women’s health and security, it may directly affect their ability to undertake livelihoods activities by occupying time which could be otherwise be used for productive tasks. He gave an example of women and children who simply for potable water and fuel absorb the time and energies. They are compelled to allocate their time and energy to these tasks at the expense of seeking income generation work.

In Cedric Pughs (ed.) (1996), ‘Sustainability, the Environment & Urbanization’ authors have examined the positive and negative aspects of rural and urban linkages. According to Pugh for most urban centres worldwide, an examination of the use of renewable resources by consumers and enterprises within their boundaries reveals a scale and
complexity of linkages with rural producers and ecosystems within their own region or nation which implies that ‘sustainable urban development’ and ‘sustainable rural development’ cannot be separated. He explained about the two aspects of linkages on the basis of developmental and environmental terms. For instance, in positive linkage demand for rural produce from city based enterprises and households can support prosperous farmers and prosperous rural settlements. In this condition the environmental capital is not being depleted. Similarly in negative linkage for example agriculture land can be lost as cities, built up areas expand without control and land speculation on urban fringes drives out cultivators. It is concluded that the negative linkage appears to be more common in most nations.

De Haan (2000), while discussing about migrants, livelihoods and rights argues that the holism of livelihoods theory enables us to achieve a better understanding of the contribution that migration can make to poverty reduction. Quantitative studies demonstrating the importance of remittances in reducing vulnerability have been carried out in India (Rosenzweig and Stark 1989), Botswana (Lucas and Stark, 1985 and Stark and Lucas, 1988), Peru (Cox et al. 1998), and in the Kayes Area of western Mali (Gubert, 2002). De Haan (2000) found that migrants in Bihar, migrated to reduce the uncertainty of a family income, provide investment funds, and livelihoods for those with small plots. Similar findings are reported of households in rural Andhra Pradesh (Deb et al. 2002). Rogaly (2003) documented how one group from Puruliya district have managed to shift from a position of dependency to a loosening of obligations to the ruling (land owning) classes. This has been brought about because of the increased access to seasonal out-migration for agricultural and manual work, contributing to the diversification of their livelihoods. Also, the labour shortages experienced by the richer classes during certain seasons (because of the migration) have led them to improve the conditions of land and labour contracts for the (migrant) labourers. Rogaly and Rafique (2003), note how in West Bengal agricultural employers are anxious about their labour supply and performance, since workers are part of their own livelihood strategy.

Enhancing food security is one of the most essential requirements for livelihood security. Timothy R Frankberger & M Katherine Mc Caston (1998) stated on their paper that research work carried out in early and late 90’s the focus on food security and
nutritional security as they were currently conceived needed to be broadened. It is also stated by them that issues related to household food and nutritional security led to the development of the concept of household livelihood security. The household livelihood security model allows for a broader and more comprehensive understanding of the relationship between the political economy of poverty, malnutrition and dynamic and complex strategies that the poor use to negotiate survival.

Nira Ramachandran on an article titled ‘Sustainable Livelihood and Economic Access to Food’ in M.D. Asthana and P. Medranos (2001), ‘Towards Hunger free India: Agenda & Imperatives’ explained about the sustainable livelihood approach to food security. Nira Ramachandran very clearly stated that the sustainable livelihood approach to food security is necessarily people centred, and must begin with an investigation of the assets which people have, the objectives that they hope to achieve, and the livelihood strategies that they adopt to achieve them. Unlike the conventional community needs assessment approach, she explains, the sustainable livelihood approach emphasizes assessing community strengths and assets. The approach is founded on the belief that people require a range of assets to achieve positive livelihood outcome. No single categories of assets on its own being sufficient to yield all the many and varied livelihood outcomes that people seek. In conclusion it is stated that various elements of the sustainable livelihood approach have been incorporated by government, donor and NGO efforts at ensuring food security to all.

M.S. Swaminathan (2001), in the convocation address of Assam Agricultural University highlighted about the position of food security in Assam based on the ‘Food Insecurity Atlas of Rural India’. He expressed that Assam is quite secure in terms of food availability. Even though it has a deficit of food production over consumption, it fares well in terms of overall food availability because of its relative position with regard to the Sustainability index and Disaster index. In the early nineties, net production of cereals per capita per day was 341.40 grams while per capita consumption of cereals was 439 grams per day. Sustainability index was calculated using indicators such as area under forests, ground water depletion, extent of wasteland and area under legumes in the rotation. According to this index, Assam ranks 5th as the environmentally most sustainable state among the 16 states considered. Ground water is
not being exploited to its potential in Assam. Just about 5 percent of available ground water is used in Assam, although there is a rapid change now. The level of ground water exploitation in Assam is the lowest in the country. Assam is not badly affected by drought or earthquake in comparison with other states and the impact of natural disasters excepting floods is relatively low.

The Atlas has ranked Assam very low in terms of access to food and food absorption. This is essentially because Assam fares poorly in terms of levels of per capita consumption, has a relatively high percentage of population below the poverty line, 45.01% in 1993-94, and a very poor development of rural infrastructure. Rural Infrastructure Index has been worked out taking into account the percentage of villages without electricity, percentage of households without electricity and piped water and road length. Among the 16 states Assam is the fifth lowest state with regard to food absorption and nutritional status. While Assam fares well in terms of Adult Health index as well as Child Health Index, it fares poorly in terms of development of Rural Health infrastructure. Swaminathan suggested that Assam has to intensify its efforts to attain a level of rural infrastructural development, essential for accelerated agricultural progress. He appealed to all to pay concurrent attention to sustainable food production, enlarging livelihood opportunities and improving the biological absorption of food in the body.

FAO, on 'A new framework for development' addressed the priority areas for the problem of persistent poverty and food insecurity for enhancing the status of rural women and achieving food security, poverty alleviation and sustainable development. Highlighting the importance of women for sustainable development it stated that the advancement of women is central to achieve sustainable development. Women are responsible for natural resource management through their day-to-day productive and reproductive tasks of providing fuel, water and food for household consumption and for sale. However, they are rarely in a position to influence decisions that determine the allocation of resources and on use of land, water and woodlands. Women are often the major suppliers of household subsistence. When their access to productive resources declines, more people suffer from poverty and its related effects, including hunger, malnutrition and illness. Improving women's access to resources and services increases
farm productivity, provides a more efficient use of resources, and ultimately yields higher profitability (FAO).

DFID (2000), on their key sheets committed to the provision of gender equality in all aspects of the work. It has stated that gender equality is essential for poverty elimination. The International Development Targets can only be achieved by addressing the disproportionate burden of poverty, lack of access to education and health services and lack of productive opportunities borne by women (ODI).

Rekha Mehra (1996) explains about the poverty and livelihood of the women in developing countries. She explains that women in developing countries through their economic and household roles have a significant impact on the use of natural resources and sustainable development. Women she explained are at particular disadvantageous position in attempting to overcome poverty because of various additional institutional, educational and social constraints. These constraints may also pose problems regarding women's ability to adopt certain practices that ensure environmental sustainability. The specific constraints which restrict women's progress are lack of access to assets and productivity enhancing resources, new technological training and extension services.

R. Masika and Joekes (1996), explains about the income from female headed household in 'Employment and Sustainable Livelihood', They stated that the rate of return to their labour, that is the level of income over which female heads of household have control, is likely to be less than that of other women. They referred about an econometric study in Morocco which shows unequivocally that female heads of household earn lower wages than women in male headed household with equal education and qualification. In the issue of BRIDGE (1995), 'Development and gender in brief' stated that in many countries the evidence is that female headed households are on average poorer than others.

In Gender mainstreaming by DFID sustainable livelihood is discussed in the context of gender discrimination. It excludes women from the equal access needed to sustain livelihood, increases the dependency and locks women into long term poverty trap. For example land is owned and controlled by men and women's access is mediated through men. Their access to formal channels of credit is also limited since they lack the kind of
collateral provided by land. Policies, institutions and processes influencing access to assets tend to reflect and reinforce gender difference and inequality. Women seldom participate in consultation and their interests figure little in public policy-making.

In the context of rural food security Nira Ramchandran in ‘Rural Food Security: Unresolved Issues and Emerging Challenges’ have highlighted the importance of women empowerment and equal status of woman in the area of food production. She pointed out that ownership rights, equal wages and education is as essential as providing nutrition supplement and health care to the women in the effort to achieve universal food security which is essential for sustainable livelihood.

Frank Ellis (1998, 1999a, 1999b, 2000), has suggested diversification as a strategy for poverty reduction in developing countries. He argues that rural households depend on a portfolio of income sources and activities. Poverty reduction strategies should therefore promote the opportunities of the poor to diversify such activities, through reform for good governance to create a facilitating and enabling environment.

P.B. Hazell and Haggblade (1993), on their working paper ‘Rural-urban growth linkages in India’ explained the significance of non farm sector in rural economy for poverty reduction and for livelihood diversification. They showed that share of household non agricultural income is inversely related to farm size. They stated that landless and near-landless workers are deriving between a third and two-thirds of their income from off-farm sources. With time we understand that the rural and urban economy will need to integrate more and more and the synergies between rural and urban economy is to be promoted.

Group of scholars made a detail study on non farm sector and its linkages. They explained the significance of small rural towns and urban centres for the livelihood diversification and for the development of non farm sector (Bhalla 1997, Shukla 1992, Jayaraj 1994 and Eapen 1995). These linkages are well discussed by T. Wandschneider (2004), who studied the impact of small rural towns in local economic development in Madhya Pradesh and Orissa, two poor states of India. The author found that small rural towns and nearby villages are strongly linked through consumption, production, employment, and financial linkages, and various types of
economic and social service provision. While villages benefit strongly from small towns through these linkages, the reverse is also true. Small towns and urban centres depend and benefit from labour, inputs, and markets of nearby villages. With time we understand that the rural and urban economy will need to integrate more and more and the synergies between rural and urban economy is to be promoted.

JB Ganguly (1996), in the appraisal of India’s approach to sustainable development and achievements referred about M.S. Swaminathan, who cautions that slowing down of the process of agricultural intensification and diversification in our country will be socially disasters as 70% of our population is dependent on agricultural and allied activities including agro industries. He thus suggested an environmentally sustainable and socially equitable green revolution which can be termed as evergreen revolution.

Shenggen Fan, Connie Chan-Kang, and Anit Mukherjee(2005) on their discussion paper explained that China and India both implemented development policies biased in favour of the urban sector. The terms of trade for agriculture have improved as part of the reform process, leading to some correction in urban bias. But other types of biases still exist. Among these, government investment has been one of the most important. They suggested that to achieve greater poverty reduction, both governments need to correct this bias urgently by investing more in rural areas. Infrastructure such as transportation and communication, for example, is crucial for achieving better rural-urban linkages as it facilitates mobility and therefore access to markets, employment, and services for the rural population. Moreover, empirical evidence on the economic returns to public investments from both countries has shown that more investment in rural infrastructure as well as in agricultural research and development, and education will yield the largest returns in terms of both growth and poverty reduction. They also suggested that in poor areas such as western China and Eastern India, the poverty reduction effect from these investments is particularly high, and therefore deserves more investments from the government.

N.R. Bhanumurthy and A. Mitra (2003) decomposed changes in poverty in India into a growth effect, an inequality effect, and a migration effect for two periods: 1983-1993/94 and 1993/94-1999/2000. The decomposition analysis showed that rural-to-urban migration contributed to poverty reduction in rural areas by 2.6 percent between
1983 and 1993-94. Poverty in the urban sector increased during the same period, but by a smaller rate than the reduction of poverty in rural areas. Therefore, the net poverty incidence for the country as a whole decreased over the period studied. Similar findings were reported for the 1993/94-1999/2000 period. Rural poverty declined by 1.64 percent as a result of rural to urban migration, while urban poverty increased by 1.43 percent. They commented that despite these overall positive effects generated by migration, formal and informal institutions and policy barriers still restrict the movement of the population. They pointed out that lack of education and access to information and infrastructure are the most critical constraints.

In rural and urban linkage the UNDP Report of 2000 titled 'Rural- Urban linkage: An Emerging Policy Priority' explained that the sheer numbers of people that arrive every year to some cities- hundreds of thousands, is approaching one million per year in some Asian countries. It signifies the massive rural and urban changes that are underway in developing countries. Accompanying their problem is also in question the future sufficiency of world food production. Since urban dwellers are captive to rising prices as they cannot grow their own food, the problem of poverty, social discontent and political instability will become pronounced. This has led policy makers to concur that urbanisation is a complex phenomena that cannot be simply curbed by policy making (UNDP, 1998). UNDP suggested that synergies between rural and urban development is to be promoted rather than to continue to treat them as autonomous sectors in policy and planning.

On discussing about the agriculture and poverty Fan, Fang, and Zhang (2003) stated about the several channels of linkage between rural and urban areas. They cited the example of various urban businesses and enterprises which depend on rural demand for their goods and services. These urban people again rely on rural areas for the supply of raw materials. Urban consumers, benefit from cheap and sustained food supply from rural areas. Furthermore, many poor urban households partly depend on rural activities (e.g. farming) for their livelihoods (DFID, 2003). The rural sector can also act as a buffer from the impact of macroeconomic shocks on the urban economy (World Bank 1999).
Studies have shown that migration influences male and female labour force separately. S. Go and L. Postrado (1986), made a study on the family and communities of contract worker of Philippines. They found male labour force participation in households receiving remittances from migrant member(s) appears to decline whereas women's remains constant. On the other hand S.M. Ilcan (1994), on his 'Peasant struggles and social change: migration, households and gender in a rural Turkish society' stated that in some areas of Turkey, the migration of men has involved changes in land use. The share-cropping which was traditionally men’s work is now usually abandoned but women remain responsible for subsistence agriculture in some communities. H.S. Simeline (1995), made a very interesting observation of Swaziland in Labour migration and rural transformation in post-colonial Swaziland. In Swaziland, he explained the combination of remittances from their male relatives, employed in South Africa’s mines, and the governmental provision of a tractor-hiring service, has allowed women to increase agricultural productivity despite the lack of male labour. Thus, when policies are grounded in local needs and build upon the resources provided by migrants, they can play an important role in improving conditions in areas of out-migration.

U. Sharma (1986) made a study of families in Himachal Pradesh and showed a typical pattern of financial affluence of families where members work outside and money sent by them. He found that whichever family members are currently most employable for wages in the army or industry and sending back money in rural, which is used in rural for investment in assets such as jewellery or wedding expenses, or to increase family land holdings. In the instance of Sharma’s study, women normally remained in the village to care for children and farm land, and migrants did not typically come from the poorest households. But the dominant land owning castes were the earliest and most successful migrants. In addition, he stated that migrants might not retire to their source villages but generally continued to hold some stake such as ‘social credit’ and maybe land holdings.

According to A. Barret and R. Beardmor (2000), India show different patterns of migration, with increased female migration to cities for wage labour, and some instances of rural ultra-poor migrating to cities. Despite the stereotype of migration as rural people coming to cities to work, he examined the process is in practice two-way.
The urban poor, especially in peri-urban areas, are often involved in agricultural work, especially in smaller cities and in areas or states where the rural economy dominates. They may migrate seasonally to work in agriculture or commute daily to rural areas. As stated by R. Brook and J. Davila (2000), in Karnataka state 25% of the female urban labour force and 13.8% of the male urban labour force rely on agricultural activities for income.

Thus in the review of literature the sustainable livelihood approach is discussed in definitional and framework context, its operational problem and different issues influencing livelihood.

1.4 Objective

The primary objective of the work is to know the livelihoods of rural and urban Assam and examine their sustainability.

Attempt is made to know the differences in the vulnerability of rural and urban Assam and different external and internal factors that make livelihood vulnerable is identified.

To understand the gap between Assam and all other states of India effort is made for a comparative analysis of rural and urban livelihood between India and Assam.

Attempt is also made to examine the micro aspect of livelihood strategy. The linkages among the factors of livelihood and the impact of ‘change’ in the livelihood strategy at household level in rural and urban areas of Assam is analysed.

With the analysis of livelihood outcomes derived from the strategies, the difference of sustainability between the rural and urban Assam are estimated.

1.5 Significance

The sustainable livelihood approach places the poor at centre stage and it explores the aspects of the livelihoods which are commonly neglected. These include the multidimensional nature of poverty itself, the diverse and dynamic nature of their ‘portfolios’, the complex nature of vulnerability, and the complexities of accessing the capital assets. Thus the approach has a special significance as it brings all issues
influencing livelihoods together at the same time and combine them with the core emphasis on poverty elimination. It recognises the need of knowing livelihood holistically. The economic well being or calorie intake or such other indicators can only give a partial view of the living condition. In this situation the people centred and multi level sustainable livelihood approach can give complete idea on the living condition. In addition to this it helps to understand the links between the factors and the dynamism of the whole. One important reason for the success of the Sustainable Livelihood Approach in winning the attention of key policymakers in donor institutions was that it offered a fresh vision of a holistic and/or integrative approach with the capacity to analyse and understand the complexity of rural development (Chambers and Conway 1991; Solesbury 2003; UNDP 1999). The concept of Sustainable Livelihoods was an important element in the new Labour administration’s 1997 White Paper on international development. Its core commitment was to refocus international development efforts on the elimination of poverty and encouragement of economic growth which benefits the poor. It can be done through support for international sustainable development targets and policies that create sustainable livelihoods for poor people, promote human development and conserve the environment (DFID, 1997).

Rural and urban life is closely interlinked and to understand the livelihood of the people in the comprehensive manner both are to be taken into account. Effective suggestive policy can only be possible when all aspects affecting livelihood is considered. The multiple and interactive influence of factors on livelihood of rural and urban areas can be known from the study which can help to understand the strength and weakness of the factors in respective areas. Earlier no such study is made in Assam and thus effort is given first to know the living condition of the people in the context of sustainable livelihood approach and then to suggest effective policy which can be implied in true sense for sustainable livelihood. The approach is well accepted as a way of capturing and bringing together practice from many different areas in order to address the long-standing challenges of poverty.

1.6 Hypothesis

The livelihood in rural Assam is as sustainable as in urban Assam.
1.7 Methodology

The study on the livelihoods of rural and urban Assam is undertaken on the basis of Sustainable Livelihood Approach. The research is designed mainly with the reference of DFID framework of sustainable livelihood which is elaborated above. With the limitation of considering all the variables of model in single study some adjustments according to the objective and priorities are made.

Framework of Sustainable Livelihood

![Framework Diagram](image)

(Based on the DFID model)

The component Policies, Institutions and Processes (PIPs) is not taken into account for detail study as it is beyond the objective of the study. Other minor modifications are stated while discussing the limitations of the study.

Vulnerability, livelihood capitals and livelihood strategies are the factors composed of some elements which interact to lead an outcome. The elements are explained in the respective chapters which are in line with the DFID framework. To name the elements of the component of livelihood capitals-

*Physical*- Drinking water, Dwelling unit, Sanitation and Use of energy for cooking and lighting.

*Human*- Health, Nutrition and Adequacy of food.

*Financial*- Assets and Liabilities.

The vulnerability context is examined by trend and shocks. The term ‘trend’ is used here to explain the movement in time period. The movement mostly within two decade is observed by secondary data. To understand the increasing or decreasing trend in the
time period simple percentage method is used. Simple graphical tool is also used to see the gap between the rural and urban Assam. Accordingly by ranking high and low to the factors the vulnerability of rural and urban is estimated.

The present status of livelihoods capital is understood from the recent secondary data. A comparative study is made between rural and urban of Assam and national average. Both at inter and intra level the gap between rural and urban is understood by percentage method and by ranking the factors.

The strategy of livelihood is studied both at macro and micro perspective. In the beginning by secondary information an idea on the present livelihood strategy of rural and urban Assam and in the country are given. The changes occurring in the last decade is also taken into account to understand the influence of liberalisation on the livelihood activities. Later the micro elements of livelihoods which generally get overlooked by secondary information are observed by field survey. Following subjects are given special reference in field study

i. The linkages between the factors
ii. The coping and adaptive strategies taken up during the stress and shock period
iii. Changes influencing the livelihood by occupation, by age and by sex
iv. Social capital and its influence on livelihood.

The combinations of both qualitative and quantitative tools are used for assessing the variables as indicated in the framework as the study required both the descriptive as well as causal explanation. The information on above subjects is collected by well structured questionnaire. The research work started with the quantitative method which is followed by qualitative technique. Use of qualitative and quantitative method is used to get a richer base for analysis where data from each method helps to interpret the other. The combinations of both qualitative and quantitative tools are used for assessing the variables as indicated in the framework that livelihood study required both the descriptive as well as causal explanation. By piecing the data from variety of sources the key aspects of the livelihood can be understood. The research work started with the quantitative method which is followed by qualitative technique. Use of qualitative and quantitative method is used to get a richer base for analysis where data from each method helps to interpret the other.
The primary data is analysed by -

i. Principal Component Analysis

ii. Percentage and graphical- Food Security, Health security and Gender security

iii. Qualitative- Perception of 'change'

Case studies are given in between the analysis.

The secondary data is analysed by

i. Descriptively

ii. Composite index

Different tools are adopted for primary and secondary data mainly for the constraint of data. There is lack of uniformity in the data of NSS reports and thus according to the purpose of the study combination of tools had to be used. In addition to it as reviewed in the literature the subject needs qualitative information to get a holistic idea thus qualitative analysis are integrated with other tools.

**Primary data analysis:**

*Principal Component Analysis*

The livelihood outcome is evaluated by Principal Component Analysis Method. 18 variables are chosen to reflect the specific component affecting livelihood of rural and urban areas. Theoretical foundation of the Principal component analysis lies in expressing the components as linear combinations of variables with highest possible variation. If \( x, y \) and \( z \) are three indicators to be examined into two principal components then it would require to estimate two linear equations:

\[
\text{Component 1} = \beta_1 x + \beta_2 y + \beta_3 z \\
\text{Component 2} = \alpha_1 x + \alpha_2 y + \alpha_3 z
\]

Here coefficients of the equations either represent correlations or loadings of the indicator with the components which gives a particular dimension.

In order to improve the interpretation in terms of maximising the factor load on to one component and for unique identification of factors of a component various rotations are normally applied both orthogonally and obliquely. For the given set of data orthogonal
rotation varimax is applied. In the next stage factor scores were obtained by using the method suggested by Anderson and Rubin (by SPSS programming) and the factor score matrix is presented. Using the factor score matrix the factor scores for all the four components along with the total factor score for each of the sampled villages and urban area is estimated. The mean scores are then tested through independent \( t \)-test for rural (all villages) and urban (all towns) areas at 5 percent level of significance.

**Percentage and graphical method- Food security, Health security and Gender security**

Few indicators are selected to represent the difference in securities of food, health and gender.

i) The indicators of food security - Sufficiency of food, PDS support, Sufficiency of PDS.

ii) The indicators of health security - Ailment, Can’t work for ailment, Average expenditure on health

iii) The indicators of gender security - Female Work Participation, Average income of Female Headed Household, Female ailment and female literacy.

By the percentage and average method these indicators are compared between the rural and urban areas to see if any difference exists between the two at micro level. Differences are presented by column diagram.

**Qualitative- Perception of 'change’**

In a qualitative data analysis on the perception of change, comparative study is made to the responses on changes (if any) by area and by occupation. The response is discussed to understand the way people are adapting the changes and how it is affecting their livelihood.

**Secondary data Analysis:**

To understand vividly the present living condition of the people in Assam a descriptive analysis of livelihood is made by areas and by occupations. A concise result on the changes in the living condition of people and difference in sustainability of Assam and India is taken out on the basis of composite indices.
Changes in livelihood outcome during post reform period in India and Assam is compared by index of sustainability. Sustainability of livelihood is greatly limited by certain vulnerabilities. Some measurable livelihood capitals are selected as an indicator of ‘vulnerability’ and ‘quality of livelihood capital’. Sustainability of such strategies adopted by the individuals gets revealed by the upward revisions of ‘quality of livelihood capital’. Two composite indices are estimated – one for quality of livelihood capital and the other for the vulnerability. Vulnerability would inversely affect the sustainability measured in terms of (better) the quality of livelihood capital. Therefore, composite index of physical quality of life may be inversely weighted by the composite index of vulnerability to obtain an overall index of sustainability.

To see the movement of these set of indicators for the maximum possible period over the last two post reform decades, the earliest possible data for the 1990s and latest possible data for 2000s are referred to. To overcome the problem of direction, only those data are selected which refer to an ascending direction. More the value more is the extent (of better in case of quality of livelihood capital) of the relevant indicator. The issue of scale is handled by locating the value of the indicator in terms of possible fixed minimum and maximum (in the line of UNDP Human Development Index) so that some “dimension values” may be obtained. Since these dimensional values will be pure numbers, therefore, simple average of these numbers would give a set of two composite indices.

Let $X_i$ be the value of the $i$th indicator of quality of livelihood capital. The dimension value then will be

$$x_i = \frac{Max - X_i}{Max - Min}$$

The composite index of quality of livelihood capital is

$$P = 1 - \frac{\sum_{i=1}^{7} x_i}{7}$$

(7 is the number of quality of livelihood capital indicators)
Likewise, the composite index of vulnerability will be
\[ V = 1 - \frac{\sum_{i=1}^{5} y_i}{5}, \]
where \( y_i \) is the "dimension value" of \( i \)th vulnerability indicator. The overall index of sustainability is then weighted value of \( Q \) where weight is inverse of \( V \). This implies, sustainability index is

\[ S = \frac{1}{V} (Q) \]

The more is value of vulnerability less will be the value of sustainability. The greater value of \( S \) is indicative of greater degree of sustainability measured in terms of sustained improved quality of livelihood capital.

### 1.7.1 Data sources

The major data source in the research is both secondary and primary. The different reports of the National Sample Survey are taken for the study of parameters in the state. The latest report on various subject like energy, sanitation & hygiene, dwelling structure, health is taken into account to know about the living condition of people. The Debt and Investment Survey under NSS rounds often called All India Debt and Investment Survey Report (AIDIS) is taken as principal sources of data on assets liabilities and capital expenditure of the household sector. In addition to NSS reports, information are also collected from Statistical Handbook of Assam 2001, Census of India, 2001, NFHS-I, NFHS-II, NFHS-III, Economic Survey of Assam of different years and Human Development Report.

The household survey from selected occupation is done on the basis of well structured questionnaire by simple random sampling method. The household quantitative data is collected by occupation. Rural area occupation is categorically divided into four groups-

i. Agricultural labour
ii. Cultivator
iii. Self employed and
iv. Artisans.
Urban area occupations of unorganised sector are divided into three groups-

i. Self employed

ii. Regular worker and

iii. Casual labour.

Qualitative information is collected from Focus group discussion (FGD), Key informant interview, Case studies, direct observation. The FGD is carried out to elicit collective experience and take the opinion of three groups- a) Women b) Youth and c) Working group from dominant occupation. Thus there are 18 FGD’s. Information from six key informants (six villages) is also included in the analysis. FGD and key informant interview is carried out in rural areas only. Case studies are given while discussing the livelihood outcome explaining the transition, problem, social taboos etc. affecting the livelihood, with special reference to women and children. The entire pathway followed for the data sources are presented by flowchart 1 (Annexure A).

1.7.2 Area of the study

Kamrup and Nagaon are the two districts taken for primary data collection. These two districts have highest urban and rural population respectively on the state (Statistical Handbook of Assam, 2001). From the above stated district villages are purposively selected on the basis of dominant occupation – cultivator and agricultural labour (Census of India, 2001). In Kamrup district Dhopguri and Ganakpara and in Nagaon district Chakori Gaon and Pachim Salpara are taken dominated by cultivator and agricultural labour respectively and another village Kuch Gaon is selected on the basis of direct observation having agricultural based business and other businesses. In addition to these, two villages from Nagaon are taken dominated by artisans- Bhakatgaon and Kalapani which have pottery and making bamboo work as major source of income. The difference of the two artisan village is that in one (Bhakatgaon) the artisan group is almost perishing and on the other people is still living as artisans (Kalapani). To understand the problem and adoption to the changes taken in time period, these two villages are taken for the study. Guwahati is selected from Kamrup district for understanding the living of urban. Urban living condition of Nagaon district is collected from Haibargaon and Dhakaipatti.
1.7.3 Sample Design

Sample size of rural area is 240 and of urban area are 160. Thus the total sample size is 400. 40 households are taken from each of the three villages dominated by cultivators, agricultural labour and self employed. Among 40 households, 20 households are taken from dominant occupation and rest are from other occupation. 20 households are taken from each of the artisan’s village. 15 artisan households are taken from (Kalapani) village where artisans are still living. From other artisan village 10 households are taken. Rest are taken from other households present in the respective villages. All total the sample size of five villages in Nagaon district becomes 160. The total size of sample of two villages in Kamrup district becomes 80.

The sample design of urban area is also made on the basis of occupation. From Guwahati city 40 households are taken each from self employed, casual labour and regular worker with a total size of 120 samples. From Nagaon town 40 samples are collected where 20 were self employed and rest were from other two categories.

1.7.4 District and village/urban profile

According to 1991 census the area of Nagaon district is 3973 sq.km. On the basis of 2001 census the total population size is 2314629 with density of population 582. The size of rural population is 2036342 and urban population is 278287. The sex ratio of the district is 944 and the percentage of literacy is 61.73. In the same time period in Kamrup district the total population size is 2522324 with rural and urban population of 1614107 and 908217 respectively. The area of the district is 4345 sq.km (1991 census) with the density of 581 per sq.km. The literacy rate of Kamrup district is 74.16 with 901 number of female per 1000 of male (Census of India, 2001).

District- Nagaon
Village: Paschim Salpara
Dominant occupation- Agricultural labour

The village is located in Rupahi circle with 468 household and the population strength is 2559. The male - female population is 1300 and 1259 respectively. The village does not have population either from schedule caste or schedule tribe. The size of literate
population is very less (727) in the village but there is less gender difference in the literacy level. The working population of the village is only 26.49% and female working population is very negligible. Almost 70% of the main working population is agricultural labour and 23% is cultivator. Household industry is almost not present in the village and very insignificant percentage is dependent on other source of earning (Census of India, 2001). The village is 17 km far from Rupahi market but within a km from Samuguri point. The village is dominated by the people from Muslim religion and linguistic group is Bengali. The village is surrounded by Pub Salpara, Koroiguri and Larimukh village.

Village: Chakori Gaon
Dominant Occupation- Cultivation

The village is located in the Nagaon circle. The population strength of the village is 662 with 137 household. The male - female population is 350 and 312 respectively. There is no schedule tribe in the village but 267 of them belong to schedule caste. The literate population size is 477 and among them 204 of them is female. Only 26.13% of the population is working and among them almost all are main working population. The female percentage of working population is very insignificant. Almost 90% of the population is cultivator in the village and rests are dependent on other and household industry as source of income (Census of India, 2001). The village is 14 km far from Nagaon Township and is situated on the right side of N.37 towards Tezpur. The religion of the people is Hindu and they belong to the linguistic group of Assamese.

Village: Koach Gaon
Dominant Occupation- Business based on agriculture and others

In Rupahi circle the village is situated with 233 household and population size of 1450. Male- female population size is 742 and 708 respectively. The schedule caste population size is 46 and there is total absent of schedule tribe. The literate population is 636 in the village and among which female literacy percentage is 44.33. Almost 30% of the population is working and size of female working population is less (49). The percentage of the cultivator in the village is 45 and rest of the population is dependent on other and agricultural labour as main source of income (Census of India, 2001). The
village is 1.5km from Rupahi Chariali (market) and surrounded by Saiduri and Hathipukhuri. The religion of the people is Muslim and linguistic group is Bengali.

**Village: Bhakatgaon**

*Dominant Occupation: Other (Pottery)*

In Nagaon circle the village is located with 603 household and population strength is 3353. The male female population size is 1699 and 1654 respectively. There is total absent of schedule caste and schedule tribe population. The literate population size is 1342 and female literacy rate is only 43%. The working population percentage is 26 and female population size is less (55). Almost 51% of population is dependent on other source of income and rest is dependent on cultivation and agricultural labour (Census of India, 2001). The village is 1.5 km before Rupahi and people from Hindu and Muslim community is settled here and few people from Kachari tribe also live in this village. People from linguistic group of both Assamese and Bengali are there.

**Village: Kalapani (Buridua)**

*Dominant occupation: Other (Making fencing and other things of bamboo)*

The village is located in the Kaliabor circle with 54 household and 242 population sizes. The male female population distribution is equal and thus 121 is the population size of male and female. Schedule tribe population size is 84 and schedule caste population does not exist on the village. Only 41 of them is literate and among them female literate population size is only 12. The percentage of working population is 24 and female workers are almost not present. Almost entire population is found to be dependent on other as main source of income (Census of India, 2001). The village is 6km far from Aambagan, 36km from Rupahi and 10km from Koliabar. It is surrounded by Dighalihati and Lakna. The religion of the people is Hindu and they belong to Khatriya cult. The linguistic group is Bengali.

District- Kamrup

**Village: Ganakpara**

*Dominant Occupation: Agricultural labour*
The village is situated in the Chaygaon circle with 481 household. The population size of the village is 2433 with male population of 1283 and female population 1150. The schedule caste and schedule tribe population of the village is 46 and 696 respectively. Total number of literate is 1493 and the total working population is 958. The male working population is almost twice of the female. 65.34 percentages of workers are main workers and rests are marginal workers. Almost 40% are agricultural labour and 28% are cultivator. Thus almost 68% are dependent on agricultural labour and cultivation. 199 household is dependent on other and very insignificant number (9) of household have household industry as occupation. The percentage of male population dependent on agricultural labour as main worker is slightly more (58.19) than female(Census of India, 2001). Ganakpara have following villages in surrounding Palashtarturi, Chandrapur and Bamunigaon. River Sorsori is in west part of the village. People of this village are settled from last twenty years

**Village: Dhopguri**

**Dominant Occupation: Cultivator**

The village is situated in the Boko circle with 626 household. The male-female, population in the village is 1762 and 1702 respectively. It is a scheduled tribe dominated village with 2052 population size in the category. The literate population size is 1977 and working population percentage in the village is 41.22. The woman percentage of literates and working population is 42 and 37.88 respectively. The main working population is 58.40% and among them 71.34% is cultivator and 15.94% is dependent on others. Among the cultivators almost 80% of them are male(Census of India, 2001). Borgaon, Rajakata, Kadampara and Singra are the villages around Dhopguri.

**City: Guwahati**

Guwahati is situated on the southern bank of river Brahmaputra with its cardinal points as 26°10’ north latitude and 92°49’ east longitude. It is located towards the south-eastern side of Kamrup district surrounded by Nalbari district in the North, Darrang and Marigaon districts in the East, Meghalaya State in the south and Goalpara & Barpeta districts in the West. The city is situated on undulating plain with varying altitudes of
49.5 m to 55.5 m above mean sea level (MSL). The southern and the eastern sides of the city are surrounded by hillocks. The central part of the city has small hillocks namely Sarania hill (193 m), Nabagraha hill (217 m), Nilachal hill (193 m) and Chunsali Hill (293 m). The city is also covered by swamps, marshes and water bodies like Dipar Bil, Dighali Pukhri, Silsakoo bil.

In 2001 the population size of Guwahati was 809,895 and the decadal growth of population from 1991 to 2001 was 38.60%. The workforce participation rate (WFPR) as per the 2001 Census is computed at 33.4% for Kamrup District. The same for Guwahati Metropolitan Area and Guwahati Municipal Corporation Area are respectively 34.8% and 35.1%. It is estimated that in 2001, other services and trade and commerce had highest concentration of workforce (GMDA, 2007).

1.8 Line of analysis

The research work started with an introductory chapter in which at the opening different issues and the gaps affecting livelihood in rural and urban area is discussed. In the next part the evolution of the approach is given which is followed by the review of the literature on which the views on the concept and on framework along with the issues related to sustainable livelihood approach is discussed. The other technical part of the research like significance, objective hypothesis, methodology of the work is detailed in this segment.

Second chapter started with the discussion on vulnerability of the livelihood. The vulnerability context encompasses trend and shock. Taking the different livelihood capital separately the change occurring within two decade is separately discussed for rural and urban area and the vulnerability is compared. The shock is mainly studied under two heading- man made shock and natural shock. Violence against woman and flood are the two types which came under the two broad heading respectively.

In the third chapter the recent status of the living condition of people is discussed at the household level for rural and urban areas. This is done on the basis of livelihood capital – Financial capital (Asset level, Debt asset ratio), Physical capital (dwelling unit, water supply, sanitation & hygiene and energy) and Human capital (Health and Nutrition) are
analysed. Difference in the living condition of people in Assam and India is also highlighted in this section of the thesis.

In the fourth chapter the livelihood strategy of the rural and urban area is discussed. Initially the activities of rural and urban people are studied from secondary information. Based on the 61st report of NSS on ‘Employment and Unemployment’ and 63rd report on ‘Household Consumer Expenditure in India’ the recent activities carried out on the state and differences with the country are stated in a detailed manner. In the later part the micro aspects of livelihood are analysed on the basis of survey findings. By the qualitative information the livelihood activities by sex and by occupation is explained with special emphasis on changes in the livelihood activities occurring in time period.

Finally in the concluding chapter the livelihood outcome of rural and urban area is analysed. On the basis of 18 indicators by Principal Component Analysis the sustainability of rural and urban Assam is compared. To get into the subject at more individual level a comparison of three securities - health, food and gender is done between rural and urban area by primary data. The different aspects of livelihood which are qualitative in nature and which cannot be understood by strict econometric tool are analysed in this chapter. The difference on the outlook of change occurred during last ten years is analysed here by occupation and by area. On the basis of secondary data by composite indices the sustainability of the country and Assam is compared. Thus on the basis of these different analytic tool and by the qualitative information the livelihood outcome of rural and urban is examined on the basis of sustainable livelihood approach.

1.8 Limitations

The livelihood study covers a wide range of subjects. All of them could not be included in the study. Among the five livelihood capital as given in DFID model, the natural and social capital are not included in the scope of the study as they cannot be related directly to the individual livelihood. The livelihood outcome is also slightly adjusted according to the purpose of the study and on the availability of the data. In the vulnerability context the seasonality factor is not taken separately.
For the lack of uniformity and availability of NSS data of different rounds the trend analysis of the chosen variable mostly could be done within two decades. The latest condition of drinking water along with sanitation and hygiene is observed from the report of 54th round of NSS whereas status of other variable is mostly studied from the report of 60th, 61st and 63rd round.

Comparison between rural and urban could not be made for the limitation of the availability of data on domestic violence of Assam.

Within these limitations attempt is made to understand the livelihood of rural and urban Assam and examine sustainable livelihood approach. Chapters are structured on the basis of the DFID framework. Vulnerability is the first component of the model thus the analysis begins with the identification of vulnerable factors and comparison of vulnerability in rural and urban Assam.