

**Sustainable Development and Indigenous Knowledge:
A Study of Agricultural Practices in Phek District of Nagaland**

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JYOTI DAS



CENTRE FOR THE STUDY OF SOCIAL SYSTEMS

SCHOOL OF SOCIAL SCIENCES

JAWAHARLAL NEHRU UNIVERSITY

NEW DELHI- 110067

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जवाहरलाल नेहरू विश्वविद्यालय
JAWAHARLAL NEHRU UNIVERSITY
NEW DELHI-110067

Chairperson

Centre for the Study of Social Systems
School of Social Sciences

Tel.: 26704408

Dated: 23/07/2018


DECLARATION


This is to declare that this thesis entitled *Sustainable Development and Indigenous Knowledge: A Study of Agricultural Practices in Phek District of Nagaland* submitted in partial fulfilment of the requirements for the award of the degree of Doctor of Philosophy, has not been previously submitted for any other degree of this or any other university. It is my original work.


Jyoti Das

CERTIFICATE

We recommend this thesis to be placed before the examiners for evaluation for the award of Doctorate of Philosophy of this University.


Dr. A. Banol Akoiyam
(Supervisor)
Associate Professor,
Centre for the Study
of Social Systems
School of Social Sciences
Jawaharlal Nehru University
New Delhi


(Chairperson)
Chairperson
CSSS/SSS
Jawaharlal Nehru University
New Delhi - 110067

*For my loving Mom because her love
and
support remains unparalleled*

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ABSTRACT

A detailed interaction between environment and society; culture and development demand sharp attention in contemporary sociology. This research intends to explore and evaluate the scope of indigenous knowledge in forming a revised understanding of sustainable development. In recent years indigeneity has found voice on two grounds- one regarding the struggle for rights of indigenous people across the globe, and the other is a growing awareness of the relevance of indigenous knowledge for a greener development practice. The focus here is on the second direction. One prime limitation often put forward against concretization of indigenous knowledge for sustainable development is the limitation of cultural relativism. Riiza is an indigenous integrated farming system known for its excellent water harvesting method, said to have originated in the Chakhesang community of Phek district, Nagaland in North-East India. Can such a practice serve as a non-arbitrary symbol of development in general and that of sustainable development in particular? The study adopts mixed methodology approach including survey and ethnographic work conducted in Phek district; the idea is to move beyond mere incorporation of indigenous practices as elements of technical knowledge judged on the parameters of science and modernity. Accordingly, it tries to map out the relation between local- global interactions; the thrust is to identify characteristics of environmental sustainability embedded in indigenous practices on the backdrop of power-knowledge complex. Methods of primary data collection are survey, observation and interview apart from the secondary sources. The research attempts to highlight the dynamics between indigenous and modern scientific knowledge system in a globalizing world vis-à-vis sustainable development.

Keywords: Indigenous Knowledge, Sustainable Development, Riiza, Scientific Knowledge System.

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LIST OF ABBREVIATIONS

AASSREC	Asian Association of Social Science Research Councils
ADP	Alternative Development Perspectives
CWS	Chizami Womans' Society
CWWS	Chakhesang Women Welfare Society
DHDR	District Human Development Report
FAO	Food and Agriculture Organization
HDI	Human Development Index
HEAP	Hygiene, Environment, Agriculture and People-friendly
ICAR	Indian Council of Agricultural Research
ILO	International Labor Organization
ITK	Indigenous Technical Knowledge
KVK	Krishi Vigyan Kendra
LPG	Liquefied Petroleum Gas
MDP	Mainstream Development Perspectives
MGNREGA	Mahatma Gandhi National Rural Employment Guarantee Act
NBHM	Nagaland Beekeeping and Honey Mission
NEN	North East Network
NGO	Non-Governmental Organization
NSM	New Social Movement
TEK	Traditional Ecological Knowledge
TEKS	Traditional Ecological Knowledge System
TRC	Terrace Rice Cultivation
UNDP	United Nations Development Programme
UNESCO	United Nations Educational, Scientific and Cultural Organization
VCC	Village Council Chairman
VDB	Village Development Board
WCED	World Commission on Environment and Development
WIPO	World Intellectual Property Organization

SECTION I

CHAPTER 1 INTRODUCTION: THE TWISTED TALE OF DEVELOPMENT

CHAPTER 2 SUSTAINABLE DEVELOPMENT AND INDIGENOUS KNOWLEDGE:
A STOREHOUSE OF POSSIBILITIES OR JADED REALITY

CHAPTER 3 RESEARCH METHODOLOGY AND FIELD WORK: WHAT LIES
BENEATH NUMBERS AND NARRATIVE

CHAPTER 1

INTRODUCTION: THE TWISTED TALE OF DEVELOPMENT

Wars of the future will be fought over water as they are over oil today, as the source of human survival enters the global marketplace and political arena... Past civilizations have collapsed from poor water management. Can the human race survive?

(Sam Bozzo, *Blue Gold: World Water Wars*, 2008)

Questions concerning development and environment have always bothered me. *Blue Gold: World Water Wars* (Achbar, Litvinoff & Bozzo, 2008) is a critically acclaimed documentary that captured the seriousness of global water scarcity – one of the most critical elements of *world development crisis*¹ in society today. I had watched that documentary some time in the year 2010, only to find myself even more intrigued by paradoxes ingrained in popular understandings of development. Then in 2012, I happened to watch a short film titled *Zabo: A Traditional Way of Integrated Farming* (Das, 2012) that stood in complete contrast with the former. It was based on indigenous rain water harvesting, an ancestral practice in Phek district of Nagaland that makes use of rain water for integrated agriculture. Talking about water problems, even my hometown Guwahati otherwise a thriving city, popularly known as the hub of North-East India is not immune to the growing crisis. The sight of Bharelu – a dying river, more of a drain in contemporary times is deeply perturbing. In popular perception, the city has witnessed tremendous development over the last two decades but what is the essence of development in a city that cannot even take care of its rivers? These and many more such questions led me to think about development in terms of sustainability, globality and locality. It was on the background of such compelling queries that it seemed befitting to base my PhD research on *sustainable development and indigenous knowledge*.

Development, in its modern avatar (post World War II), has primarily rested on conceptual bi-polarity between *developed North* and *underdeveloped South*. Over the

¹ World development crisis is used here as a conceptual frame to understand paradoxes found in West-centric global development paradigm followed by state-market nexus worldwide; a detailed analysis was done by Benjamin Selwyn in his book *The Global Development Crisis*, 2014.

years, the bandwagon has been joined by newer categories such as developing country or least developing country. So to say, Western experts have created a permanent vacuum of *artificial polarization*² that reproduces age-old colonial dichotomy of civilized/uncivilized, wrapped under the notion of development as a signifier of desirable progress (read progress as qualified life). One may argue that a critical analysis of historically biased dichotomies in relation to development, in search for a meaningful alternative is not a new venture. The idea of diving into the murky waters of development was to envisage moving beyond mere intellectual criticism so as to provide a consolidated conceptual framework in tandem with long-sighted development goals. It aimed to develop newer theoretical understandings concerning relationship between sustainable development and indigenous knowledge.

Renowned anthropologist Arturo Escobar problematized development discourse as external, based on the model of industrialized world, arguing that what was needed instead were more endogenous discourses (Pieterse, 2010). Today, in an increasingly conflict-ridden world, one cannot agree more on a need for plurality of approaches to the concept of development. Visual media is a powerful mode of communication. Aforementioned documentaries not only provide fresh insights to an otherwise taken for granted notion of development but also compels us to dig deeper into the root of such understandings. Once a researcher starts questioning in these lines, importance of critical thinking in unraveling the twisted tale of development becomes more than evident. Development is a highly value-laden concept with universalized symbols of progress and change, significantly dominated by modernizing ethos of the West. How do we comprehend rather challenge these *culturally biased symbolisations*?

Textual sites such as film, drama, novel, videos, internet, and television and so on need to introduce new forms of archiving for easy interface between knowledge systems and global audiences. These sites are important as they play a crucial role in constant delivery of symbols to the society at large. As stated by Baggethun, Corbera and Reyes-Garcia (2013), it is the application and re-generation of knowledge that

² The concept of Artificial Polarisation is used here to understand the process of artificially created divisions by the Western world based on ethnocentric perceptions of development.

matters and not knowledge by itself. For that matter, knowledge could be from any source.

PhD study provided me with an opportunity to conduct field research. Zabo, an integrated agricultural practice based on rain-water harvesting struck my mind as a potential non-arbitrary symbol of development. Accordingly, I chose to study agricultural practices in Phek district as a part of empirical fieldwork.

1.1 Development: A Double-edged Sword

Development is a highly contested concept, popular across disciplines in academia. To start with, one can possibly look at it from two broad perspectives – First, as an intellectual pursuit that unfolds itself as layers of diverse social change theories ranging from antiquities to date, all linked with a notion of advancement or progress that may be linear, non-linear or cyclical. Second, as a policy-oriented tool in context of institutionalized, generally (state) sponsored development model, by and large a product of West-centric modernity. Both these perspectives have their own set of critique(s), especially so, for being ideologically loaded with West-centrism. Consequently, there has been a proliferation of alternative approaches in development which lend a significant bearing on the present study.

One such approach that hushed aside long-standing debates on development is the concept of sustainable development. It not only succeeded in resolving frictions created by tensions between ecological conservation and economic development (by merging the two) but also re-legitimized modernizing agendas of global development policies (Ghosh, 1992). All forms of development act as double-edged swords; they constitute both act of being developed and consequences of such act(s). Sustainable development is no exception; it is increasingly critiqued for being engulfed by global development policies.

The idea behind this study was to pursue some critical questions raised by global debate on development crisis in light of Western-scientific versus non-Western-indigenous practices. I used two qualifiers for the word practices - scientific and indigenous. Just as scientific practices are supported by modern scientific knowledge, so are indigenous practices backed by indigenous/traditional knowledge.

How far can these two knowledge systems work in unison to solve development-led crisis?

In his work on *Indigenous and Scientific Knowledge*, Agarwal (1995) pointed out that traditional knowledge, seen as an obstacle to development not very long ago, is now claimed by many as pivotal to discussions on sustainable resource management and balanced development. However, as suggested by post-colonial theory³, indigenous knowledge is often treated with a certain pattern of ingrained bias that delimits its validity as a knowledge system. This reminds me of T.K Oommen's work on perspectives of development, where he discussed that *alternative development perspectives* (ADP) pass on to become mere add-ons to *mainstream development perspectives*⁴ (MPD) (Oommen, 2004). In a similar vein, it can be said that indigenous knowledge is reduced to become mere technical inputs to so called mainstream scientific knowledge.

1.2 Underlying assumptions of the study

Whether seen as a myth, a reality or hyper-reality⁵, development appears to be an inescapable phenomenon that confronts our quotidian life in various forms and manifestations. However, it is equally a highly misused term. For it to make sense in contemporary world, a revised understanding of it could be a great catalyst. This is possible only when it distributes equal relevance to practices informed by so called scientific knowledge as well as those informed by indigenous knowledge in sync with sustainability issues. So to say, an association between indigenous knowledge and sustainable development can go a long way in addressing larger world development crisis.

³Post-colonial studies analyze the politics of knowledge (creation, control, and distribution) by reflecting upon the functional relations of social, political and cultural domains that sustain colonialism and neocolonialism. Akhil Gupta (1998) discusses post-coloniality in details in his work *Post-Colonial Developments*.

⁴Please refer to *Development Discourse: Issues and Concerns* by T.K. Oommen, 2004 for a detailed understanding of mainstream development perspectives versus alternative development perspectives.

⁵ The concept of Hyperreality was popularised by French scholar Jean Baudrillard as a process that involves creating a symbol or set of signifiers which represent something that does not actually exist e.g., Santa Claus. Other scholars like Umberto Eco used this concept to explain contemporary consumerist cultures where false realities are fabricated to be consumed as real based on particular signs-systems. For details, please refer to *Simulacra and Simulation* by Jean Baudrillard, 1994 and *Travels in Hyperreality* by Umberto Eco, 1990.

1.3 Historical tracing of development discourse

Conceptualizations in social sciences are contextual, largely determined by ideological, epistemological and methodological orientation of respective commentators. This is reflected in various labels associated with development over course of time, namely, economic development, modernization theory, state sponsored development, dependency theory, world-systems theory, basic needs approach, top-down development, bottom-up development, another development, autochthonous development, endogenous development, indigenous development, ethno-development, post-development, anti-development, sustainable development and human development.

Ostensibly debates, dissensions, contestations and negotiations have been ever present both at ground level (local) and amongst numerous official and unofficial agencies (global) engaged in development work (Simon, 1999). Whether as a philosophical discourse or as a modernizing tool, development qualifies to be a notion of desirable change and progress *ab antiquo*. Though in present academic literature, it gained impetus only after Second World War but its historicity is traceable to last quarter of 18th century when Western societies underwent enormous transitions and various scholars particularly sociologists tried to capture essence of such revolutionary changes. Thus, the ambit of development grew by leaps and bounds from being a biological metaphor to an extensive socio-cultural engagement over years. Saint-Simon and August Comte seem to be original theorists of development who propounded idea of an evolutionary change seeded in a notion of progress through development of human intellect, particularly through its development in scientific thought. Theories of biological evolution have had their major share of influence on social change studies. Herbert Spencer equated evolution in human society to that of biological evolutionism, treating societies as organisms; he argued that it is a character of social bodies, as of living bodies that, while they increase in size they increase in structure as well. Durkheim advocated a functional view of society relating changes in society to transition from mechanical solidarity to organic solidarity. In contrast to Durkheim, Max Weber focused more on individual than society and an underlying hint of paradox of development can be found in Weber's

notion of modern world associated with rise of capitalism advanced by processes of increasing rationalization, bureaucratization and so called disenchantment in an iron caged world. Karl Marx observed these changes in society as a part of conflicting interests of two antagonistic classes that paves way for a new social order. He linked social problems with expansion of capitalist structure and foresaw an end to those problems with advent of communism via socialism. A staunch opposition to Marxist interpretation was given by modernization theorists who made prophetic subscription to market economies as future of contemporary world, however, its adverse impact can clearly be observed in present day world with burgeoning environmental and other crisis.

Thus, classical worldview on development comprises theoretical perspectives of social change by stalwarts of Sociology namely Auguste Comte, Henry Morgan, Herbert Spencer, Emile Durkheim, Karl Marx and Max Weber. As these names suggest, it is hugely sabotaged by Western scholarship. This is indicative of a larger debate of Western hegemony over knowledge domains so much so that even existing literature is flooded with research works on development, modernity and indigenous knowledge by Western scholars with comparatively very less material available from non-Western vantage points.

1.3.1 A little back in time

Once it entered popular social vocabulary, West-centric development discourse(s) acquired robust colonizing power; soon employed by politicians, policy-makers and so on. Wolfgang Sachs (1997) pointed out that failures in *MPDs* necessitated an emergence of new theoretical frameworks in Western world for sustenance of development. This postulation is cornerstone of various critical work pertained to sustainable development.

Truman's speech (Truman, 1949) declared the need of a collaborative international effort for developing so called underdeveloped regions. Post International Development Strategy, 24th October 1970, a quest began for a unified approach to development planning that would focus on integrated regional approaches for instance participatory development and community development. The Declaration

of Cocoyoc in 1974 delineated development's purpose as not to develop things, but to develop man, that any process of growth which does not mature to fulfilment of 'basic needs' or, even worse, impedes them – is a mockery in the name of development. The declaration thereby called for diversity, making room for several self-reliant roads to development. Accordingly, it raised a call for fundamental changes at economic, social and political level of *state sponsored regional planning*. India was not far behind. Planning Commission report on development of backward areas, 1981 reflects regional planning by Government of India and state sponsored modernisation strategy designed from policy perspective. Though importance was given to agriculture and other local concerns clubbed with larger global scheme of development platter yet desired results are still far away. Rather some pressing problems- environment, population, hunger, poverty, gender, employment etc. continue to grow.

When MPDs started attracting more critiques than takers, several APDs showed up in later part of 20th century, some of which were subsequently incorporated in mainstream model. In 1975, Dag Hammarskjöld Foundation suggested *another development*, premised on human-centred development. The Conference on Employment, Income Distribution and Social Progress, organized by International Labor Organization (ILO) in June 1976 emphasized on the concept of 'basic needs', aiming at achievement of a specified 'minimum standard of living' before end of the century. Experts from UNESCO at the same time promoted the concept of *endogenous development*. In a vehement critique of modernization theory (especially Rostow's *stage theory* of growth), it sought for total abandonment of mechanical way of life, typical of industrial societies. Then there was the concept of *indigenous development*, formulated as a result of a series of co-ordinated efforts, usually by so called first world organizations like World Bank in collaboration with respective governments, Ngos and financial as well as environmental organizations aimed at promoting well-being of indigenous populations and to aid a holistic development process, premised on inclusion of local voices reflective of indigenous worldview(s) aspiring to render empowerment. None of these perspectives, essentially meant to address flaws in mainstream perspective seemed to work. The next decade, the 1980s, was called the lost decade for development and by 1985, *post-development*

including an anti-development stance emerged, calling for alternatives to development rather than alternatives in development.

Post-development successfully pinpointed fallacies of modernization induced development agenda. Realizing primacy of market-driven modern state's role as one of the main actors of development, it emphasized significance of delving into a critical engagement with state. However, negligence of agency became one of the major weaknesses of post development theory. Some scholars pointed out the necessity of supplementing post development theory with an actor-orientated approach (Lie, 2008). It may be useful to explore ways in which post development connects to famous economist Amartya Sen's concept of *development as freedom*⁶ as a possible means of evaluating development initiatives that ought to expand peoples' capabilities.

Implicit in the notion of alternatives to development is a search for an emancipator politics through creating space where indigenous people can reclaim their autonomy with regard to articulating and pursuing goals of social transformation that correspond to their ideas of development corresponding to their own worldview(s). This implies a total refurbishing of development practices; firmly relocated within a radically democratised political process which at a local level provides a means of emancipation for people by exerting control over shaping their own lives. Kippler (2010) discussed protests and social movements that struggled for liberation from global project of development. In Esteva and Prakash's (1998) words, these were epics unfolding at grassroots. In fact new social movements⁷ (NSMs) can be seen as attempts by people at grassroots to exert control over unaccountable power centres. They strive to deconstruct dominant culture(s) as defined by power centres and reinstate excluded cultures such that they have a voice in ongoing definition of socio-cultural and political systems. It is ab intra this context that role of new social movements, civil societies and that of indigenous communities are identified as

⁶ The concept of development as freedom views economic development as a means to extending freedoms and choices rather than an end in itself; for further details, please refer to Sen's book *Development as Freedom*, 1999.

⁷ NSM is a theory of social movements that captures diverse new movements that emerged roughly since mid-1960s whereby rise of post-industrial economy is believed to be responsible for new wave of movements that focus not on materialistic well-being but on issues such as human rights; they are primarily social and cultural and only secondarily political, if at all.

driving forces behind reinvention of democracy, community and that of development. This demands invigoration of local communities from within. These grass-root level initiatives, although limited, nevertheless are highly significant (Kippler, 2010).

1.4 Sustainable Development and Indigenous Knowledge: The Road Ahead

Sustainable development is a popular concept in applied/action theories as well as in policy-oriented approaches. The challenge in this study was to test whether indigenous knowledge backed practices can act as non-arbitrary symbols of sustainable development. Nakashima and Rou'e (2002) defined *indigenous knowledge* as a vast body of practices handed down from one generation to other that guide communities in their daily socio-cultural encounters with natural world. Some scholars criticise this body of knowledge for being stuck at a technical level, hence of little significance (Briggs & J. Sharp, 2004). What is indigenous may be under flux as it undergoes constant negotiation amongst different knowledge domains.

Indigenous knowledge perspective broadened its horizon over the years principally on two platforms- *academics* and *global development policy*. Former deals with studies undertaken over past four or five decades in various areas: ethno science, human ecology, anthropology, sociology, medicine and so on. Latter has emerged over past one decade or two, stemming from two broad approaches: (a) Farming and agricultural systems and (b) Participatory development. Until a decade or so ago, development policies were accentuated by modernization theory, dependency approach and so on (Sillitoe, 1998); now things appear to be tad different. One could very well argue that the world of academic research and writings is not immune to the politics of development policies.

Indigenous knowledge on the platforms mentioned above endeavours to promote *culturally rich* and *environmentally sound* development practices albeit not necessarily in an *anti-modernity* spirit. In an era known for rampant exploitation of resources, idea underlying most works pertained to indigenous knowledge is to facilitate sustainable development. So far this line of work is only confined to theory; neither been an alternative to development nor an alternative in development in true sense of the term. Its intellectual and philosophical grounding holds close affinity to

ecologically informed ethnography but none of it elaborates upon any theoretical or conceptual framework that mirrors intended objectives and also lacks methodological coherence (Apffel-Marglin&Marglin, 1990). Even in sociology, in spite of a voluminous increase in studies concerning ecology and development, this growing body of work is not yet coherently shaped (Patel, 1997).

Present study tries to delineate the context of indigenous in Phek district and connect it with the anchor of sustainable development to offer fresh insights. Thus, the research aims to build upon larger debate on world development crisis by analyzing tradition-modernity complex visible in convolutions between man-made environment (culture) and natural environment (nature). These interactions are best seen at work in dynamics between elements of global market forces and local community forms of life.

1.4.1 Sustainable Development and Agriculture

Two approaches that rekindled development zeal post 1990s are *sustainable development* and *human development*. For the purpose of this study, I will dwell upon the former. As a concept, sustainable development grew out of two significant concerns- (a) Recognition of severe global environmental crisis and (b) Growing emphasis on community (i.e. local) as site of development. Thus, it is not entirely wrong to say that it was another attempt to save state induced development agenda from losing its mass appeal. The very nature of sustainable development being future-oriented (conservation of resources for future generations) accelerated its popularity, creating a snowball effect on other related domains especially agriculture and rural development. Consequently, notion of *sustainable agriculture*⁸ came to the fore. Food and Agriculture Organization (FAO) formed a framework for assessing prospects of agriculture globally with strict adherence to guidelines safeguarding productive potential and broader environmental functions of agricultural resources for future generations, while satisfying food and other needs of present generations (Duhaylungsod, 2001).

⁸Sustainable agriculture found expression in 1980 book *New Roots for Agriculture* by Wes Jackson; the term was reportedly coined by Gordon McClymont to mean farming in sustainable ways based on an understanding of ecosystem services.

The present study benefited from field research conducted in Phek district of Nagaland in North-East India. Most of the empirical observations draw a renewed theoretical engagement in the context of research theme. Inspired by stalwarts of sociology in India, impressed by aforementioned documentaries and after consideration of broader research theme, I premised my fieldwork on indigenous agricultural practices in Phek district of Nagaland. However, during the course of fieldwork, as a researcher, I discovered a few interesting non-agricultural practices as well, discussed in chapters four and five.

1.5 Organization of the thesis

The thesis is divided into two sections with a total of six chapters:

The first section comprises first three chapters – Chapter one, two and three that introduce the research theme, discusses the research problem in the light of literature review followed by research methodology.

The first chapter titled *Introduction: The Twisted Tale of Development* serves as a general introduction to the broad research theme. It begins with an epigraph, highlighting entry point (empirical) of the research, graduating onto underlying assumption, followed by a quick glimpse of research field, concluding remarks to the chapter and ends with chapterization of the thesis.

The second chapter titled *Sustainable Development and Indigenous Knowledge: Storehouse of Possibilities or Jaded Reality* highlights conceptual frameworks pertained to development, indigenous knowledge, their agencies and trajectories across time and space respectively and other relevant concepts. It also juxtaposes secondary data with a few snapshots from field, highlighting some lacunae in existing literature. It lastly points out statement of problem.

After an extensive review, showcasing strength of study, the third chapter titled *Research Methodology and Fieldwork: What lies beneath numbers and narrative?* begins with what and how of research, quickly followed by research

questions and objectives in light of statement of problem, moving on to explain methodology including philosophical moorings and theoretical support. While doing so, it dwells upon relationship between theory and facts and also broadly discusses research strategy comprising survey and ethnography in mixed model spirit. Then research area is introduced, followed by methods (sample and sampling techniques), tools and techniques of data collection and data analysis procedure. The chapter progresses with snapshots from fieldwork experiences, followed by concluding remarks.

The second section comprises remaining three chapters – Chapter four, five and six that are based on primary fieldwork that is field findings and comparisons with secondary data followed by concluding remarks.

The fourth chapter titled *Phek district: Socio-economic profile*. It elucidates socio-cultural and economic structure of given society based on primary data obtained from empirical fieldwork. It starts with a quick preview of research field including geographical, cartographical and demographic profiling (through secondary sources), then graduates on to quantitative survey data presented graphically with the help of tables, charts and diagrams organized theme-wise, followed by brief explanations. It includes a few comparisons with some data from secondary sources.

The fifth chapter titled *Chakhesangs and Pochurys –The Natives of Phek District: Agricultural Practices and Beyond* presents qualitative data in narrative style, maintaining contiguity with quantitative (survey) data discussed in preceding chapter. The findings from quantitative data are juxtaposed with that of qualitative data, thereby suggesting unity or disjunction between two sets of data; larger goal being to address research questions and objectives. It explores and evaluates changing trends in local indigenous culture vis-à-vis emerging complexities of a globalizing world. Thus it engages a holistic study of given indigenous communities to discuss several sub-themes such as ‘local village administration and traditional land-holding system as per customary laws’, ‘commercialisation, festivals and socio-cultural legacy of monoliths: the surplus connection’, ‘change and continuity in tradition: moving beyond deconstruction of tradition-modernity bipolarity’ and so on. Empirical reality

of field is juxtaposed with theoretical debate(s) and secondary data as and when necessary.

There are three sets of primary data from which research findings were enumerated in chapters four and five respectively:

- (1) Survey data
 - (a) Basic household information and (b) Research question related information
- (2) Ethnographic data based on observation and interview
- (3) Interview data of representatives of institutionalised settings: government officials, bureaucrats, scientists, research scholars, NGOites, politician.

The final chapter that is the sixth chapter titled *Sustainable Development and Indigenous Knowledge: A Conclusion to a Revised Beginning* summarises entire research, specifically interrogating as to how existing literature relate to and/or contradict researcher's field findings. It places research findings in broader spectrum, pinpointing shortcomings of the study, allowing suggestions and scope for further research. The chapter is then followed by bibliography and appendix.

CHAPTER 2

**SUSTAINABLE DEVELOPMENT AND INDIGENOUS
KNOWLEDGE-A STOREHOUSE OF POSSIBILITIES
OR JADED REALITY**

The Western domination of history and development dialogue has resulted in “robbing peoples of different cultures of the opportunity” to express their worldviews based on their lived experience (Sachs, 2001). Can we envisage a new metaphor of development fed by diverse knowledge systems that may include indigenous and science, non-western and western in symphony? Can a revised understanding of sustainable development in unity with indigenous knowledge open new doors for meaningful and inclusive development?

The inception of global development era in its popular policy-oriented approach is usually associated with widely quoted inaugural speech by U.S. President Harry S. Truman on 20th January, 1949. Though such an ethnocentric notion of *developing the underdeveloped areas* can be traced back to hey days of British colonialism whence it was used as one of the trademark justifications by colonial administration but Truman’s speech invariably divided entire globe into two halves: *developed we* that would provide aid and *underdeveloped others* who required aid. It also marked proliferation of a host of international institutions, organizations, and sub-disciplines to act as torchbearers of global development policies in an institutionalized setting. Following is the famous fourth course of action from Truman’s inaugural address (Truman, 1949):

Fourth, we must embark on a bold new program for making the benefits of our scientific advances and industrial progress available for the improvement and growth of underdeveloped areas. More than half the people of the world are living in conditions approaching misery. Their food is inadequate. They are victims of disease. Their economic life is primitive and stagnant. Their poverty is a handicap and a threat both to them and to more prosperous areas. For the first time in history, humanity possesses the knowledge and skill to relieve the suffering of these people... I believe that we should make available to peace-loving peoples the benefits of our store of technical knowledge in order to help them realize their aspirations for a better life. And, in cooperation with

other nations we should foster capital investment in areas needing development. Our aim should be to help the free peoples of the world, through their own efforts, to produce more food, more clothing, more materials for housing, and more mechanical power to lighten their burdens...

Apart from its latent implications, the speech also caught attention of many for the geo-political context in which it was embedded that is famous American Foreign Policy of Containment on the backdrop of Cold war history. The fundamentals underlying the speech continue to influence normative aspects of global development policies to date. Culturally universalized symbols of Western development agenda and that of sustainable development are resonated through such persistent influence.

Even human development paradigm for that matter rests principally on developed-underdeveloped dichotomy epitomized by Truman. It was first introduced at the United Nations Development Program (UNDP) in the year 1990 as a process of *enlarging peoples' choices*, encouraging a radical shift from economic development to other important areas like health and education. Though originally human development was meant to be pursued by policy measures suiting local needs of developing countries but in practice, developed South (in the form of *donors*) tied up with international development institutions continue to play key role in determining its course of action. In its Human Development Report (1990), UNDP proposed a measurement according to which development could be quantified through what it termed *Human Development Index* (HDI); it focused on three essential factors of human life- *longevity, knowledge and decent living standards*. HDI is made up of a composite value of three indicators - life expectancy, literacy and per capita income (Lepenies, 2008). In chapter four, a comparison is drawn between primary statistical data from field with that of secondary data from Human Development Report of Phek district in a few sections.

2.1 What is sustainable development?

The concept of sustainable development was first coined in 1972 at the United Nations Conference on Human Development. It was popularized in 1987 with the release of famous report *Our Common Future* by the United Nations World Commission on Environment and Development (WCED), also popularly known as

Brundtland Commission (named after its chair, former Prime Minister Gro Brundtland of Norway). Thus, *Brundtland Report* (World Commission on Environment and Development, 1987) brought concept of sustainable development to the fore, making it a household name in scientific and public debates. Thereafter, United Nations Conference on Environment and Development, held in Rio de Janeiro, 1992 (popularly known as *Earth Summit*) re-iterated focus on sustainable development. Five international agreements were formulated, covering every possible aspect of sustainable development. One of these agreements – *Agenda 21* highlighted the importance of integrating economics and ecology into a coherent system, in order to solve the recurrent deadlock in sustainable development (Moffatt, Hanley and Wilson, 2001).

For all practical purposes if one had to point out a positive outcome of Brundtland Report, one may say that in some ways, it opened up a Pandora's box for exploring connections between sustainable development and indigenous knowledge, albeit in a vague direction. Now the question is, will sustainable development land up being just another APD merging into MPD (Oomen, 2004) or can it really change the face of development?

Goodland (1995) discussed some classical works in which notion of sustainable development was seeded. He highlighted John Stuart Mill's argument in *Principles of Political Economy* (1848) where Mill emphasized the need to protect natural environment from unchecked human-centred growth if one was to preserve welfare of mankind before forces of *diminishing returns* set in. Again, Thomas Malthus (1798) had emphasized wrath of exponential population growth pressure on finite resource base of our planet, popularly referred to as *Malthusian check*. On contrary, classical scholars and renowned economists such as Karl Marx, Friedrich Engels, David Ricardo and so on argued against occurrence of global Malthusian catastrophe; that scientific progress would delay the time when infinite human population would overtake finite natural resources. However, this kind of view is rendered weak by present world development crisis, of which environmental crisis is a direct corollary. Contemporary patterns of development, when projected into a not-

so-distant future point out biophysical impossibilities of planet Earth, hinting towards total chaos and dystopia.

A television program titled *Earth 2100* is an excellent cinematic portrayal of such chaos and dystopia. It brilliantly showcased worst-case scenario of what future in this planet would become like by the end of 21st century if present generations do not take action on surmounting problems of development crisis. The film ends with a thought-provoking message– “Kids born today will see us navigate past the first greatest test of humanity, which is: Can we actually be smart enough to live on a planet without destroying it?” (Bicks, Hirsch, Avellino & Bednar, 2009)

Developing an alternative to planet Earth, looking for habitable conditions somewhere else in space or building cities beneath oceans seem to be lucrative options but at grave mercy of science and technology. Something that can actually be done by each one of us is to protect the only planet that we have for now and actively engage in regeneration of what has already been damaged. Sustainable development is commonly viewed as a form of development that meets the needs of the present without compromising the ability of future generations to meet their own needs.

Present study conceptualises sustainable development as *a process of development that prioritizes environment-health simultaneously balancing needs of human-health through non-arbitrary symbolization*⁹. It visualizes maintenance of sustainable and equitable growth in intra-generational development related activities so that future inter-generational equity does not suffer. However, at a time when world faces severe challenges in maintaining present-day sustainability, how do we expect creation of inter-generational sustainability for future period? After all carrying capacity of environment will only be lower in future than it is today (Goodland, 1995). In the words of renowned environmentalist Vandana Shiva (2008) – “Nature shrinks as capital grows. The growth of the market cannot solve the very crisis it creates.”

⁹ This refers to the connection between conceptualization of development as a continuous production and reproduction of certain cultural symbols that are universalized arbitrarily, which in turn necessitates the re-conceptualization of development in terms of non-arbitrary symbols (Das, 2014).

2.2 Indigenous Knowledge, Worldview and other Relevant Concepts

Knowledge refers to awareness or understanding of someone or something, which is acquired through experience, sense perception, learning or discovery. In philosophical understanding, study of knowledge includes ontology, epistemology, axiology and methodology of unit of study involved. There is a growing concern regarding inability of contemporary accounts of knowledge in explaining distinctive values of knowledge in different contexts (Pritchard, 2014). Partha Chatterjee noted –

Perhaps we have allowed ourselves to be taken in too easily by the general presence of an abstract negativity in the autonomous domain of subaltern beliefs and practices and have missed those marks, faint as they are, of an immanent process of criticism and learning, of selective appropriation, of making sense of and using on one's own terms the elements of a more powerful cultural order

(as cited in Siegle, 2002).

Spivak (1988) drew attention to a biased attitude borne by Western experts towards subalterns, conceptualising it as a form of epistemic violence that effectively invalidates *ways of knowing the world* and *knowing self* in non-Western cultures by externally imposing Western constructs, again advocating same old *artificial polarisation* mentioned in chapter one.

Mahia Maurial defined indigenous knowledge as a rich legacy formed out of years of interaction between environment (nature) and man (culture) in a common territory marked by three basic characteristic features: local, holistic, and oral. Joey De La Torre defined it as established knowledge of indigenous people, their worldviews, and the customs and traditions that guide them. These definitions suggest a close link between indigenous knowledge and formation of worldview. Castellano elucidated characteristics of indigenous knowledge as personal, oral, experiential and holistic; usually conveyed in a narrative or metaphorical language. Marie Battiste and Sakej Henderson (2000) emphasized on functional aspects of indigenous knowledge, stating it to be a process that needs to be understood holistically in relation to corresponding aspects (Hart, 2010).

Nakashima and Roué (2002) explored historicity of Western discourse on indigenous knowledge. Generally, *indigenous knowledge* is presumed to be *practical* (determined by immediate need and utility), *local* (only applicable in the setting in which it is developed) and *contingent* (context-driven) hence held ab contrario to *scientific knowledge* – latter known for being *experimental* (deductions from hypotheses are tested), *systematic* (results can be replicated) and *universal* (results are independent of context). This reminds me of a peculiar relationship between *common sense* and *science*. Literature review suggests that indigenous knowledge by and large is held subsidiary to scientific knowledge, in constant need of approval by modern science. Thus in a way, all of this goes back to Western modernity project. In that sense, both are divided in lines of common sense versus science. What is common sense goes on to become a part of scientific knowledge and what is scientific knowledge becomes a part of quotidian common sense. But as per standard definition of science, the question remains as to whether indigenous knowledge legitimately qualifies to be science in its own right or is it mere common-sensical knowledge in need of constant validification by science?

With this observation, one can make sense of the concept of *delegitimization* by renowned scholar Ashish Nandy. Knowledge(s) other than those that qualify as Western modern science are brushed off under the rubric of common sense/folk/myth and so on. The usage of the term history infact is a striking example of this notion. Ashish Nandy (1995) explained delegitimization of diverse forms of knowledge across globe in favour of propagating Eurocentric ways of specialist knowledge referring to *others* for instance –Africans as *People without History*, denoting a sign of *backwardness*. As per such endorsements, the *developed we* (Europeans) are held to have a *rich history* whereas *underdeveloped others* have a past but are devoid of history; they have stories/ myths/legends and folklore to offer. In fact, most erstwhile colonies including India struggled hard to establish legitimacy of the past by showcasing a rich historical background. This reflects hegemonic dominance of discourses associated with scientific knowledge that puts aside indigenous knowledge as common sensical knowledge, in subordination to scientific knowledge. It is only recently that indigenous knowledge has started to gain momentum in catching attention of scientific world; this reflects the discrepancies inherent in West-centric

science. Notably, the very need of scientific approval calls into question the validity of other forms of knowledge. Thus, cultures of so called non-modern and that of the non-literate tradition stand delegitimized. Nandy explained dominance of Western epistemology by highlighting how these so called others are actually trapped in categorical Eurocentric frames of references. Such systematically categorised trapping is a legacy carried over by erstwhile colonies, post independence.

Why should any community or culture be positioned as inferior/superior in comparison to another? Modern science robustly continues to be privileged as the best apparatus to disseminate knowledge and liberate society. So in that sense scientific knowledge gets privilege over indigenous knowledge. But science is not necessarily always liberating. Knowledge system is so overloaded with Western biases that it creates a critical blind-spot and refrains us from perceiving a symbiotic relationship of equality between the two concepts where one need not be superior or inferior to the other. Riiza-Zabo is a befitting example of an indigenous tradition practiced independent of modern scientific impositions; elements of scientific technology were used only as add-ons if found relevant.

2.2.1 Indigenous knowledge and Worldview

Indigenous knowledge constitutes dynamic elements wrapped up in indigenous worldview; latter apparently is not a uni-dimensional zone. Hence any understanding of it as static components of information to be conserved and incorporated into science needs to be revisited. Accordingly, conservation of indigenous language (as knowledge is encoded in language), transmission of knowledge within communities, empowerment of indigenous communities to increase their control over processes of transformation and of course sustaining their access to natural environment that forms an integral part of their life-world are crucial to (any) fair promotion of indigenous knowledge.

There is no dearth of literature concerning indigenous worldview. An understanding of worldview of both researcher and researched is held to be imperative if one is going to do more good than harm (Hart, 2010). Worldview betokens the mental frame comprising cognitive and affective screeners that establishes perception

of socio-cultural landscape, enabling a comprehensive view of given world. They are developed through socialization. There are several explanations of indigenous worldview; one fundamental link that draws attention is the essence of spiritual connection that binds mankind with their natural environment. Worldviews are generally relational in the sense that they are interlinked with people's close relationship with natural environment. McKenzie and Morrissette (2003) outlined six metaphysical beliefs that supposedly shapes this relationship amidst indigenous people: (a) All things are essentially based on the principle of survival; (b) the act of survival resonates with the natural energy and cycles of the earth; (c) this energy is part of some grand design; (d) all things contribute to ensure balance and harmony for holistic well-being of life in earth; (e) all things are an extension of the grand design, hence contain the same essence as the source from which it flows; and (f) this essence is understood as spirit, that links all things to each other and to the grand design of creation (Hart, 2010).

Again, Leanne Simpson (2000) outlined seven principles of indigenous worldviews: First, knowledge is holistic, cyclic, and contingent upon relationships with living and non-living entities. Second, there are multiple truths, and these truths unfold as per individual experiences. Third, everything is alive. Fourth, all things are equal. Fifth, land is sacred. Sixth, human beings share a crucial relationship with spiritual world. Seventh, human beings are least important in the world.

Indigenous worldviews are often expressions of how to invest world with self-sufficient meaning that provides alternatives to dominant consumptive values of Western societies (Mauro and Hardison, 2000). According to Gregory Cajete (2000), indigenous worldview integrates a spiritual orientation carving out an important role played by human beings in perpetuation of nature-related anthropogenic actions, and that all kinds of socio-cultural acts in natural world must be sanctioned through ceremony and ritual in socio-cultural world. Another dominant aspect is reciprocity, or the belief that as we receive from others, we must also offer to others. Reciprocity reflects relational worldview along with an understanding that we must honour our relationships with other life. However, these studies do not interrogate changing character of worldviews that are not water-tight binaries comprising indigenous and

non-indigenous. They are marked by dynamic perceptions that form fluid concepts imbibed by people with varying degrees of overlap.

It is important to examine transformations in worldviews imposed by so-called modernizing agencies worldwide. Spread of hegemonic discourses such as development is always played out in different ways in different local encounters through intervention of human agency (Nustad, 2001). After all who represents agency of the indigenous?

2.2.2 On being Indigenous

Development agenda increasingly faces challenges from local-global interface of indigenous communities either in form of silent resilience or in form of dogged resistance. What particularly deserves attention is a growing popularity of indigenous practices, now seen as facilitators of development rather than obstacle. With onslaught of modernity, ideas of liberal democracy, rational thinking and individuality gained momentum, nonetheless, group-based identity is crucial today more than ever. Indigenous community is an important part of one such social categorization. The word indigenous can be etymologically traced to mid-17th century Latin term *indigena* - a native. Lopsided categorization in name of classification is a latent characteristic feature of modernity. Classifications do not exist for no reason. They serve an important purpose in nomenclature system. However, classifications drawn in a biased ethnocentric fashion, is alarming. Formulation of indigenous identity and its discursive recognition is usually based on following factors: a sense of rootedness, historical memory, historical transformation, consciousness, social exclusion and identity politics (Bolaños, 2010). Given the kind of worldview they profess, generally reflective of a close affinity with natural environment, indigenous communities are held to have an important role in management of biodiversity.

There is absolutely no dearth of definitions for indigenous people(s)/community in global literature. Notably various groups of indigenous people across globe argue against adoption of a formal universal definition, stressing need for flexibility so that each and every indigenous community is in a position to define themselves in their own terms. In early 1950s, International Labour

Organization (ILO) gave considerable attention to the issue of ‘Rights of Indigenous peoples’. By 1982, the Martinez Cobo study emerged for ‘the study of the problems of discrimination against indigenous population’. The revisions were made and adopted as Resolution No. 169 in June 1989. The Martinez Cobo study (Bijoy, 1993) provided a widely cited functional definition of indigenous peoples:

Indigenous communities, peoples and nations are those which, having a historical continuity with pre-invasion and pre-colonial societies that developed on their territories, consider themselves distinct from other sectors of these societies now prevailing on those territories, or parts of them. They form present non-dominant sectors of society and are determined to preserve, develop and transmit to future generations their ancestral territories, and their ethnic identity, as the basis of their continued existence as peoples, in accordance with their own cultural patterns, social institutions and legal system.

Though loosely defined but aforementioned conceptualisation is not devoid of problems; age-old dichotomy developed/underdeveloped and coloniser/colonised reverberate through such kind of understandings. As a researcher, the idea here is not to reject classification but to move beyond *artificial polarisation*. What could possibly do this better than *symbols* and *semantics* in a world mediated by different layers of communication? Symbols including language are neither natural nor immediate. Prior to Saussure, language was thought of simply as a system for naming an objective reality presumed to exist a priori, before and outside of language. In this perspective, real world is already out there, while language simply comes along to label it in all its specificities. A few things deserve close attention here. It is not syntax of language used for categorisation per se but semantics implied by categorisation that makes all the difference. For instance – Earlier the word Chinky was a part of socially accepted vocabulary but in recent years, this term stands banned for its implied meaning used to abuse people from North-Eastern region of the country (based on their physical features).

A significant development that took place after 1980s was broadening the purview of indigenous peoples, which until then was used in United Nations (UN) and other international circles to describe people in areas where descendants of colonial powers continued to form dominant groups. It expanded to apply to groups

throughout Africa, Asia and, erstwhile Soviet Union. Around 60 million Adivasi communities constitute 23 per cent of world's indigenous communities making India the country with one of the largest indigenous populations that constitute 7 per cent of total Indian population occupying nearly 20 per cent of land mass and around 85 per cent of them live below official poverty line. Their history is replete with struggles against colonisers which arguably continue to date, albeit in a different form. The Constitution of India prescribes protection to safeguard these communities under various provisions (Bijoy, 1993).

In Asian context, indigenous people generally denote distinct and diverse cultural communities known as Adivasis, Tribal people, Hill tribes or Scheduled tribes. In Africa, they are also referred to as Pastoralists, Vulnerable groups or Hunter-gatherers. It is often argued that all African people are indigenous to Africa. This debate was addressed by the Working Group of Experts on Indigenous Populations/Communities in Africa which noted that a modern approach should put 'less emphasis on early definitions focussing on aboriginality' and instead stress on - (a) Self-definition as indigenous, distinctly different from other groups within a state, (b) Special attachment to use of their traditional land whereby the ancestral land and territory holds fundamental importance for their collective physical and cultural survival and (c) An experience of subjugation, marginalization, dispossession, exclusion or discrimination owing to variations in cultural modes of life, community forms of life and mode of production in comparison to dominant structures of society (The United Nations Declaration on the Rights of Indigenous Peoples: A Manual for National Human Rights Institutions, 2007). In the Intergovernmental Panel on Climate Change Fifth Assessment Report, various stakeholders and researchers proposed a joint collaboration between indigenous community and global scientific community visualizing symbiotic relationship between the two. However such ambitious projects never saw a concrete plan of action.

Thus, there are different names that are used to refer to indigenous people for instance- ethnic minorities, hill tribes, tribal people, highland people, aboriginal people, native people and so on. Some of these terms denote cultural inferiority or

backwardness, hence not appreciated by many. In regard to indigenous community, Brundtland Commission stated –

These communities are the repositories of vast accumulations of traditional knowledge and experience that link humanity with its ancient origins. Their disappearance is a loss for the larger society which could learn a great deal from their traditional skills in sustainably managing very complex ecological systems (Lertzman&Vredenburg, 2005).

Practitioners of indigenous knowledge are generally referred to as indigenous communities, known for their alternate ways of life characterized by a holistic relationship shared between community and environment. Traditional resource management strategies adopted by such communities can be perceived as important socio-cultural signifiers that talk about aforementioned holistic relationship. These communities are tagged as *sustainable stewards* of their environment, often portrayed as subsistence-based static entities. The present study made an attempt to deregister taken for granted notion of indigenous communities as static or sustainable and explore sites of indigenous practices in relation to changing aspects of community life, not in isolation but as co-relation so as to successfully develop new conceptual framework(s) concerning relationship between sustainable development and indigenous knowledge.

According to Belton (2010) each indigenous community has its own set of determinants to decide grounds on which one belongs to the group; these methods are not always recognized by the states within which these communities live. Many a times controversies arise regarding who is indigenous and who is not. According to World Bank data, indigenous people constitute 5% of world's population, and anything from 10% to 30% (as per UN) of world's poorest people. By most accounts, they have been the group least served by Millennium Development Goals (MDGs)¹⁰. What warrants attention is failure, so far, of representatives of

¹⁰ The MDGs were formulated by the United Nations during its Millennium Summit in the year 2000. It was a 15-year vision plan that sought to foreground eight international development goals. The MDGs were, (1) Eradicate extreme poverty and hunger; (2) Achieve universal primary education; (3) Promote gender equality and empower women; (4) Reduce child mortality; (5) Improve maternal health; (6) Combat HIV/AIDS, malaria, and other diseases; (7) Ensure environmental sustainability; and (8) Develop a global partnership for development. At the end of the year 2015, the MDGs were

indigenous communities to gain recognition in sustainable development goals pointing towards a broader connotation i.e. their lack of political clout. Indigenous people are seen as outsiders both politically and geographically. They are often remotely located, so are easily forgotten by centres of power nonetheless in many a cases they are kept under purview of state mechanism also as a part of greater *nation-building* project; such is the case of many indigenous communities in India. The Declaration of the Rights of Indigenous Peoples was adopted by the UN General Assembly on 13th September, 2007, by a majority of 144 states in favour of the Declaration. In the United Nations World Conference on Indigenous people, as per Asia Indigenous Peoples Pact (May, 2014), two-thirds of approximately three hundred and seventy million self-identified indigenous peoples live in Asia. They live amidst enormous cultural and linguistic diversity and have a strong cultural attachment to and dependence on land, forests and sea, as well as any other natural resource therein. Their unique historical connections and collective ownership of territories are continuously developed and maintained through diverse customary resource use management systems. The present study for instance engaged with indigenous practices including resource use management system of Phek district in Nagaland. These lands, territories and resources are repositories of tangible and intangible wealth, often expropriated and exploited in the name of development. Within Asian region, distribution and diversity of indigenous peoples vary from country to country, so does the terminology used to identify them and legal recognition accorded to them. It was interesting to study as to how indigenous communities in Phek district of Nagaland responded to a fast globalizing world. How far does their worldview change, transform or sustain over passage of time to meet challenges of world development crisis?

2.3 Indigenous knowledge, traditional knowledge and scientific knowledge

The bone of contention between advocates of indigenous knowledge and that of scientific knowledge extends to the epistemological status and labelling practices of both these systems. Such debates first surfaced in academic literature in 1980s;

converted to 17 sustainable development goals (SDGs) sought to be achieved during the span of another 15 years (2016-2030).

soon spilled over to political sphere in connection with development aid mantra and environmental conservation (Lanzano, 2013). The concept of indigenous knowledge was first used by a group of anthropologists in their evaluation of other forms of knowledge that could possibly benefit development aid practices by creating room for recognition of socio-cultural differences (Brokensha, Warren & Werner, 1980). The terminology henceforth gained popularity as a conceptual tool to discuss euro-centrism in science and to acknowledge positive role of non-Western knowledge systems.

In course of time, indigenous knowledge has become a contested category, widely discussed and politically charged. The act of labelling indigenous practices as traditional or local undergo risk of being boxed aside as *other forms of knowledge* deemed unfit to qualify for (Western) science. This approach narrows down scope of indigenous knowledge systems as it fails to acknowledge any possible meeting point of science and indigenous knowledge en route to development (Agrawal, 1995). Some scholars have raised concern over narrow instrumental use of indigenous knowledge.

What greatly offends quite rightly, so many anthropologists, is the way indigenous knowledge is used by some as the new “quick fix”. We find it as conveniently repackaged bits of knowledge (Sillitoe’s “independent technical facts”) which, it is claimed, can be garnered under conditions of rapid rural appraisal in the context of so-called participatory and farming-systems approaches and thereafter slotted into what remains an essentially top-down paradigm. The result is that many so-called indigenous-knowledge reports radically disembody particular bits of proclaimed useful knowledge from the rest of culture in a way which does a profound disservice to its potential importance.

(Ellen, commentary to Sillitoe, 1998: 238)

Apparently indigenous knowledge systems are not free from external influences (whether harmful or helpful). Abebe Zegeye and Maurice Vambe (2006) wrote a highly engaging article entitled *African Indigenous Knowledge Systems* that laid down theoretical bedrock of indigenous knowledge systems (in African context). With reference to (a) subaltern studies, (b) notion of indigenism¹¹ and, (c) insurgent cultural

¹¹ Indigenism refers to ideologies associated with indigenous peoples, used differently by different scholars and activists.

memory, their central argument revolved around dilemma faced by indigenous knowledge systems in Africa that constantly tried to assert themselves in a highly globalizing post-colonial world. In order to retain their own uniqueness and history, they resorted to indigenism that included both material and non-material aspects of their cultural life. While the article celebrated merits of resorting to indigenous knowledge in sharp defiance of ethnocentric (racist) European perspective of Africa, however it also pinpointed certain fallacies pertained to this process. While challenging European terminologies and understandings, many a times, indigenous knowledge systems enter the same trap of being overwhelmed by the former. The article took help of subaltern studies to highlight dynamicity of indigenous systems that in contrary to popular narrative do not comprise unchanging or static traditions. It was observed that when one peeped into internal dynamics of an indigenous knowledge system, it became evident that every culture indulged in a process of self-renewal or regeneration through inventiveness of local people on face of a distinct ecology and on interaction with other systems. In 1974, Cheikh Anta Diop, one of the pioneers in African academic circle questioned the *void* in African cultural productions that in turn betokened a void in their indigenous knowledge systems. Knowledge systems were found to be plagued by Western thought, leaving most African indigenous knowledge systems permanently on backburner in the form of non-knowledge; an entire continent was labelled as *Dark Continent, tabula rasa, people devoid of history*. Gradually, with entry of African scholars in academia, scholarships and grants funded by Western universities and organizations played an ideological role of knowledge-based domination. Africa was separated as ontologically oral and Western knowledge systems were legitimised as rationalistic; latter based on writing culture. In order to categorically put them behind the glass bars of obscure traditionalism without concrete history, tradition was equated with *static* and African as *homogeneous*. West-centric empiricist science was used as a justifying tool for devaluing African (indigenous) modes of knowing. Both these categories static and homogeneous were thoroughly rejected with passing years. In 1980s Ranajit Guha's sub-altern studies provided an alternative framework for looking at the world from hitherto suppressed voices of subaltern. Though this approach was not devoid of loopholes nonetheless it was acknowledged worldwide as a novel effort in introducing South Asian historiography that not only attempted to

subvert West-centric modernity but also helped in shaping up several indigenous knowledge studies including the one just discussed.

Contrary to Guha's version, some scholars pinpointed lack of uniformity and autonomy in subaltern culture; subalterns underwent several transformations as they strived hard to do away with markers of subalternity. In her writing, *Can the subaltern speak?* (1988), Gayatri Spivak suggested that the subaltern cannot be fixed as seamless, timeless category as if it remained outside the influence of global geopolitics of identity formation and reformation. Similarly, Dipesh Chakrabarty's *Habitations of Modernity: Essays in the Wake of Subaltern Studies* (2002) suggested that subalterns did not occupy uniform physical and ideological spaces at all points of time. Spivak and Chakrabarty pointed out presence of contradictions within lives of subalterns and suggested that the *oppressed lot* also aspired to adopt *oppressor's lifestyle*. Indigenism thereby was understood as global nature of indigenous people's movement with prime attention to issues such as cultural relativism, collective versus individual rights and legal/political implications of indigenous peoples' claims of self-determination. It incorporated the transformative nature of local institutions that may adapt to the changes brought in by colonial or neo-colonial elements. Zegeye and Vambe (2006) also discussed some independent-structured indigenous knowledge institutions in Ethiopia – Local men and women used these institutions to maintain their traditional practices and simultaneously cope up with new challenges in life. For instance- *Debo* and *Shemma* – Former referred to an indigenous knowledge based institution that acted like a local knowledge bank for the community, provided it with necessary skills for farming and related activities in drought-prone Ethiopia. Latter was used by Ethiopian women who specialized in handicrafts and weaving. Then there was the famous example of *ZINATHA*¹²- Zimbabwe National Traditional Healers Association, a brainchild of Professor Gordon. L. Chavunduka who studied community medicine. It stood as a testimony to the capacity of age-old local traditional institutions in reinventing themselves.

[t]he “locality” of local knowledge is not only, or even mainly its embeddedness in a non-negotiable here-and-now, nor its stubborn

¹² Zinatha is a popular community based AIDS prevention and care system in Africa, a product of local initiatives; for details please refer to Zegeye & Vambe, 2006, p.

disinterest in things at large...Local knowledge is substantially about producing reliably local subjects as well as about producing reliably local neighborhoods within which subjects can be recognized and organized. In this sense local knowledge is what it is, not principally by contrast with other knowledges... but by virtue of its teleology and ethos.

(Appadurai, 1995, p.206)

Indigenous knowledge systems are not necessarily always at dagger's drawn with global forces. What is important is to acknowledge the role of these communities in equally determining validity of different knowledge systems.

2.3.1 Traditional Ecological Knowledge System

Another popular term used in close liaison with indigenous knowledge is *traditional ecological knowledge system* (TEK) - these are often considered to be alternate models of *ecosystem-based management* (Scientific Panel for Sustainable Forest Practices in Lertzman, 2005). Indigenous knowledge has never been a uniform concept across indigenous communities. Indigenous scholars such as Battiste and Youngblood Henderson (2000) suggested that attempts to define TEK are inherently colonial, grounded in a Eurocentric need to categorize and control. Others have asserted that the real issue is power (Nandy, 1999). In fact many indigenous people question the research ethics followed by Western academicians in their pursuit of indigenous knowledge.

TEK is a sub-set of indigenous knowledge that may be understood as a cumulative body of knowledge, practice, and belief, about the relationship of human beings with one another and with their environment evolving by adaptive processes and handed down through generations by cultural transmission, (Berkes, 1993). From 1980 onwards, various forms of TEK gained acceptance by scientists across disciplines ranging from agriculture, pharmacology, water engineering, architecture, ethnobotany, ethnozoology, irrigation systems, and, soil and water conservation and so on and so forth. TEK shares a peculiar bond of similarities and dissimilarities with Western science. Recent academic pursuits vouched for a new kind of reciprocal relationship between the two, envisaging a synthesis of the two. However, long-standing tensions between Western science and indigenous knowledge systems

plagued such possibilities (Lertzman, 2005).

Baggethun and Garcia (2013) wrote against downplaying of TEK by other knowledge systems. The authors elaborated two case studies – One on the Tsimane', a hunter-horticulturalist society in Bolivian Amazon region (where local people seemed to maintain the capacity to generate and apply TEK) and another on farmers of Dofiana region of southwest Spain, (where rural communities suffered a disruption in the process of inter-generational transmission of TEK as their agricultural systems became modernized under global market in mid 20th century) to show resilience factor of socio-ecological systems, suggesting that maintaining TEK regeneration required a sufficient level of sovereignty over land, ecological means of production, technology, and livelihood.

Common themes that emerged from secondary sources for TEK are: A *spatial* aspect (geographically located); a historical or *temporal* nature with long time frames; *socially mediated* nature (i.e., transmitted through social institutions at community level); *cultural location* (functions within a larger philosophical and cultural context) and *methodological element* (Lertzman, 2005). These components cannot be analyzed in isolation; together they play a vital role in linking worldviews (cultural capital) with social institutions (social capital) ensuring that knowledge is shared through textual as well as non-textual medium e.g., oral tradition. All these components when joined by another factor that is *transformative nature* represent the concept of indigenous knowledge systems in the present study. Many scholars argue against equating indigenous knowledge with traditional knowledge claiming that the two are related but not interchangeable. The basic idea being that indigenous knowledge may or may not be traditional in strict sense of the term but if the purview of 'traditional' is expanded, this contention stands resolved. Thus, in the present study, the ambit of indigenous knowledge is broadened to include pure or modified traditional knowledge, recent innovations by indigenous communities and traditional ecological knowledge. Transformation (if any) is from within and not without as far as indigenous quotient is concerned in knowledge systems. This promotes the possibility of cross-cultural endeavour for sustainable development and knowledge systems.

World Intellectual Property Organization (WIPO) report, 2002 stated that the

concept of traditional knowledge is subject to policy considerations and analytical tools apart from the inner workings of the cultural environment where it is embedded. *Traditional knowledge* is loosely held as- (a) Knowledge whose origin is traceable to a particular people, group or community (b) It chiefly bears oral mode of transmission (c) It is intergenerational in nature and (d) It is context-based. In addition to oral transmission, traditional knowledge is also passed through practical demonstration and informed experience; it is as much a skill as a concept (Silletoe, 1998).

As per legal discourse on protection of traditional knowledge, what makes knowledge traditional is not the age of knowledge but the means by which it is transmitted. Thus, in recent times many scholars rejected labeling of traditional knowledge as outdated or static. Traditional knowledge comes into contact with knowledge generated in other settings and may change with changing circumstances of relevant people, group, community or region, hence is context-driven. It is precisely the bias attached with West-centric modernity and science that needs to be questioned. Scholars such as Arun Agrawal (1995) critiqued that indigenous knowledge exists in a local context “anchored to a particular social group in a particular setting at a particular time” while Western knowledge is “divorced from an epistemic framework in search for universal validity”, and suggested that latter is as much “anchored in a specific milieu as any other system of knowledge”. So in a way, any knowledge could be contextual, relative and subjective, not traditional or indigenous knowledge alone (Le Gall, 2014).

2.3.2 Usage of the terms indigenous knowledge, traditional knowledge, scientific knowledge and with respect to present study

The term indigenous knowledge implies any form of knowledge produced by and/or distinctive to a particular indigenous community in terms of practicing a skill or working directly with a resource, as opposed to practices of paid knowledge professionals such as scientists. Traditional knowledge can be understood as a subset of indigenous knowledge; latter need not necessarily be traditional as it can also comprise recent innovations by indigenous communities. With reference to Phek district, (research field) where indigenous knowledge was found to comprise age old traditional practices, with a few modifications in some cases, researcher used the two

terms interchangeably.

Science may be defined as a set of statistically analyzed data or instrumental records that rests on precise definitions of independent and dependent variables that can be empirically measured and holds capacity to demonstrate acceptable levels of reliability and validity. Indigenous knowledge is not known for methodological rigor and is defined as knowledge accumulated by indigenous communities collectively over generations of living in a particular environment. The kind of language generally used for fruitful merger of indigenous knowledge with scientific knowledge witnesses an inferior positioning of indigenous knowledge as a mere body of information that may be appropriated by science for larger goals. Ironically, they actually proceed to benefit only a selected few of the society. In context of present study, researcher attempted to critically analyze any possibility of inversion of aforementioned relationship to see if modern science can be treated as another form of knowledge amongst many?

Scientific knowledge is used to refer to knowledge produced by professional scientists usually at universities, research labs and so on, whose pre-occupation is with production and dissemination of knowledge and who, in connection with this endeavor, are part of global scientific community (Brodt, 2001). Notably, in field, identification of different knowledge systems as water-tight compartments does not help; boundaries are often crossed and knowledge from different sources combined across time and space.

Literature review suggested that thrust of most research studies in indigenous knowledge systems was to generate a better understanding so that scientists, policy-makers, non-governmental organizations and others can work towards their preservation. A non-profit organization based in Gujarat called *Society for Research and Initiatives for Sustainable Technologies and Institutions* was found engaged with various types of awareness activities in sphere of indigenous knowledge. One such activity included local biodiversity competition organized for village children, to reward those children who were familiar with maximum number of local plant species and their uses. However, in all such activities, indigenous knowledge stood as a secondary domain in need of scientific backing for any meaningful interface with

modernity.

Agrawal (1995) stated that preserving knowledge merely for the sake of preservation is meaningless except as a museum exercise; exchange of ideas and knowledge apart from exchange of goods is an age-old phenomenon. Evolution of knowledge systems is a continuous and dynamic process in human society. Moreover, scientific knowledge too faces its own share of challenges. At a time when preservation of traditional and/or indigenous knowledge is a matter of concern across globe, it was particularly interesting to observe an unprecedented level of *awareness* regarding indigenous knowledge and also that of its *transformative capacity* amongst *Chakhesangs* and *Pochurys* of Phek district. However it is important to understand that these communities and their knowledge systems are a part of a fast changing world, hugely determined by multiple effects of processes of *globalisation*.

Globalization may be empowering as well as disempowering. The concept does not by itself prejudge interaction of indigenous communities with a globalizing world as essentially negative or positive. However, to many, globalization is an extension of colonization. Spivak (1988) analyzed imbalanced relationship of power between former colonizers (developed states) and colonies (underdeveloped nation-states) in contemporary age marked by a two-way process of interaction: *localization of the global* and *globalization of the local*. The continuities and ruptures between global flow of information, ideas, people and goods and management of community life warrant attention.

What are the conditions in which indigenous communities use tools and methods of modern science- are they compelled to do so under an artificially created crisis or do they look forward to it? Some scholars such as Agrawal (1995) and Briggs (2005) pointed out gap in research. Agrawal discussed problems of differentiation, power relation and romanticization of indigenous knowledge and Briggs argued that research done in the field of indigenous knowledge focused more on technical components. For instance – There are numerous studies focusing on a particular interest in indigenous soil classification and management method or breaking down of knowledge to the level of indigenous technologies related to water conservation method and so on. In fact even in case of Zabo, it was not any different. The broader

socio-cultural and economic context in which such knowledge is embedded is hardly ever taken into consideration. Reij, Scoones and Toulmin (1996) explained that *local knowledge* may be mediated by external influences e.g., migrants, traders, government policies etc. However Western political sociology largely undermined resilience shown by indigenous communities whose traditional institutions continued to survive rather than fade away under impact of globalisation. They appeared to be flexible, accommodative, and adaptive, bending to but not necessarily replaced by forces of modernization and globalization (Wiarda, 1983). They seemed to carry potential to form base for newer forms of development but homogenising character of globalisation clubbed with authoritarian nature of modern science served as an endemic threat to grass-root level indigenous knowledge systems that were heterogeneous in character. This re-iterates popularly perceived dichotomy between scientific knowledge and indigenous knowledge.

Notably, the usage of terms such as Western and non-Western in present study was not to encourage binaries in lines of tradition-modernity complex but for organizational clarity where former refers to homogenizing Western model of socio-economic development, backed by modernization theory and latter refers to sustainable development advocated by heterogeneous indigenous knowledge systems across globe. The reference points for non-Western in field are the two indigenous communities of Phek district - Chakhesangs and Pochurys.

2.4 Engaging Indigenous knowledge with Sustainable development: Agriculture and Beyond-

Sustainable development when detached from indigenous community-level practices does not seem to be promising. While modern science based technology informs day-to-day community practices however science based technology is known to be a double-edged sword. Where on one hand it gives solutions on the other hand it also creates new set of problems. Development induced environmental crisis is one of the biggest examples of such problems. The 1992 UN Conference on Environment and Development highlighted the role of indigenous knowledge in meeting global biodiversity conservation objectives. In present study, aforementioned crisis is taken as a given in development discourses propelled by stereotypical West-centric notion

of science and modernity. Once we broaden our understanding of science and modernity; it becomes easier to acknowledge the power of multiple perspectives. Everything Western need not be prosperous and/or advanced just like all things backward need not be Non-Western and vice-versa. It does not need to be a one-way traffic. In this regard, present study proposed a successful unity of sustainable development and indigenous knowledge through *HEPA model*. This is a proposed model of development that brings together three indispensable components – Hygiene, Environment, People and Agriculture. It is based on the notion that when brought under the same roof, these four factors act self-sufficient in the sense that they fulfil all kinds of agenda under development platter. They suit sustainable development both at an institutionalized level that includes collective efforts by state, Ngos and civil society and at an individual level as the duty of every inhabitant of this planet.

In 1990s renewed enthusiasm about virtues of indigenous agricultural practices gained popularity. Anthony Bebbington (1993) wrote about connections between indigenous (agricultural) practices and alternative development with reference to a case of agricultural development taken up by concerned institutions working in highland Ecuador. In his work, agricultural component in alternative (indigenous) development was worked upon to redesign cultural and political landscape of highland Ecuador. Recognition of limitations of local development strategies arising out of wider political-economic structures was deemed important; equally important was to place such local strategies in a socio-historical context so as to understand several grass-root level concepts from within, in turn challenging certain pre-conceived theoretical assumptions.

An alternative model of development needs to address social relationships underlying structural constraints. Thus, it is important to understand indigenous worldview and local institutions vis-à-vis broader socio-economic, political, and cultural structures. These structures could be enabling as well as constraining. Bebbington pointed out that a greater emphasis on what *knowers* (indigenous communities) know about technology and ecology diverts attention from vast range of things that they do not know about e.g., markets, politics, and many other intricacies

of the globalizing world beyond their localities. Though this point may be contested nonetheless, taking a clue from his work, it can be argued that alternative development (sustainable development in case of present study) in relation to indigenous knowledge need not concentrate on a fixed notion of indigeneity. What is indigenous may be in a state of flux for example, traditional practice of jhum cultivation in Nagaland.

Gegeo (1998) cited reference of *unsustainable harvesting* of various resources including that of forests by transnational corporations in Solomon Islands and Papua New Guinea. In spite of tall claims made by modernisation discourse, marginalization of larger sections of populations in so called underdeveloped countries continue to be a matter of serious debate. Concepts such as human development and sustainable development appear sincere on first impression however when dug deeper, they are exposed to a common decay of West-centric notion of modernity and development.

Several scholars and organizations argued that an idea of endogenous development pertained to local needs of so called underdeveloped communities should come from within the concerned communities. Approaches taken to realize this goal, however, while they involved participation of target populations, still continue to be plagued by West-centric development models. The very usage of the term 'target population' re-emphasizes socially constructed *artificial polarisation* between *developed we* and *underdeveloped others*. It is only in last two decades or so that researchers and scholars have begun to argue for a radical shift from externally imposed West-centric propositions to internally placed indigenous influences in academic literature as well as in policy-making.

The study that stood out in my literature review, particularly for its compelling portrayal of relationship between indigenous knowledge complex and development in a rural area witnessing forces of globalization is a paper titled *Indigenous Knowledge and Empowerment: Rural Development Examined from Within* by David W. Gegeo (1998). The author proposed an idea of development that was anchored principally in indigenous epistemology, viewed from the perspective of an indigenous Pacific Islander, specifically West Kwara'ae villagers of Malaita in the Solomon Islands. Showing resilience to external influence, the Kwara'ae people theorized rural

development as an integration of traditional knowledge with other forms of introduced knowledge, thereby creating a new form of knowledge that they referred to as indigenous knowledge. Indigenous epistemology in Gegeo's study referred to an indigenous community's perceptions relating to knowledge-creation and transmogrification; it utilized traditional-indigenous discourses and direct communication (e.g., face-to-face interaction). It acted like an unwritten enchiridion, guiding social construction of (indigenous) knowledge.

Typically, when development scholars argue for incorporation of indigenous knowledge into rural development discourse, it is with reference to an already existing practice, usually of a technical nature but the process of incorporation often misses out 'how' component – as to how an indigenous community transforms itself through creation of new frontiers of knowledge. What could be those new frontiers?

The fundamental concern of rural development being fulfillment of local needs, transformation of local communities based on indigenous epistemology needs emboldenment. Rural transformation in Gegeo's study did not connote same thing as modernization theory's argument seeking for transformation of so called third world populations from *traditional institutional structures* to *modern institutional structures* dictated by Western modernity. Modernity there was not judged by Western parameters. There could be *multiple modernities* (Eisenstadt, 2000). Classical work on social change mostly talked about linear progress albeit in different perspectives. Implicit in all those theories was the idea of modernity (represented by modern institutions) developed in modern Europe whence it expanded all over the world. The concept of multiple modernities refutes the homogenizing and hegemonic tendencies of Western modernity framework.

Coming back to Gegeo's work, socio-cultural transformations in post-independent rural West Kwara'ae region was highlighted by capturing effects of globalization on an otherwise simple form of economy characterized by indigenous mode of production comprising subsistence level agriculture, fishing and gathering activities. Ghost of globalization haunted them too. Concern amongst West Kwara'ae regarding their lives being increasingly contingent on global modes of production spearheaded by *tua'a'anmani* or *fanga'a'anmani*- life determined by money or

consumption based on money that is, market based capitalism was growing every day. Transition from *tualalifu'anga*- living in rootedness and *tua 'inoto'a'anga* – living in dignity to *tuamalafaka'anga*- living in imitation of life brought by the ships (Westernization) was the biggest challenge ushered in by colonialism. They were worried as even after its departure; colonialism continued to operate in myriad ways in their soil. These local views emanated from quotidian struggle faced by local people in their derived experiences of modernization that stood in opposition to their *falafala/kastom* that is, their traditional culture. They were unhappy with ongoing transformations in their community; hence while we envisage a meeting ground of tradition and modernity, they talk about them in opposition?

Modernization in its various manifestations (Christianity, colonization, transnational corporatism, capitalist transformation etc.) was a dominant socio-cultural force in the Solomon Islands. Colonial government's usage of the term rural development for seeking legitimacy in regard to its activities in the region was thoroughly ill-founded. In development theory, *rural development* refers to a process of growth that combines individual and collective self-reliance, and focuses not only on material and economic needs, but also on emotional, ethical, and political empowerment, meant to improve over-all quality of life of people living in rural areas. In a nutshell, rural development is considered best when based on indigenous epistemology of concerned rural community. But in the case of the Solomon Islands, change was not guided by indigenous epistemology. Rather it followed top-down or center-periphery model of unilinear change (Gegeo, 1998).

Renowned anthropologist Laura Nader (1996) commented argued that indigenous knowledge is born of experience and practical application and is therefore no less a part of the scientific body of knowledge. If science is marked by rationality so is local knowledge built on reasoning and practice over generations. She drew attention to how western medicine drew heavily from indigenous knowledge, pointing out that when it comes to exploiting indigenous knowledge system, the Western experts conveniently overlook the credit due to the natives. They reproduce and repackage indigenous knowledge and sell them as modern scientific facts. The best examples are pharmaceutical companies who have been exploiting indigenous

resources and knowledge for decades and selling off their finished products derived from the locals as modern medicine.

The call for a genuine recognition of indigenous knowledge seemed to be of critical significance in the sense that it is only when people start articulating development in their own terms that they can set the ball rolling for dehegemonization (Gramsci 1971). Thus, indigenous epistemology discussed by Gegeo (1998) seemed to suit the process of dehegemonization. On the face of changing dynamics amongst global trio- *state, market and civil society*, eruption of conflict between forces of globalization and local indigenous communities is not sporadic. As stated by Aikau and Spencer (2007), it is important to put these conflicts in proper perspective.

Taking the case of Moloka'i island, Aikau and Spencer in their article *Local Reaction to Global Integration- The Political Economy of Development in Indigenous Communities* elucidated challenges put forward against global economic development agenda. This is another literature besides Gegeo's work on Solomon island that stood closest to present body of work in spirit and objective. The local people of Moloka'i island were archetypical example of local resistance to global forces. These locally based communities thwarted economic development agenda e.g., offers from tourism industry and urban planning bodies. In 2003, they stopped cruise companies from including Moloka'i on inter-island itinerary. Again, in 2006, around three hundred local activists protested against creation of a luxury sub-division at La'au Point, a pristine beach on the South-West tip of the island, by physical possession of the proposed property. It was heartening to read testimonies from local people. One of them exclaimed "Everyone says that we must assimilate so that we will not be left behind...I don't want to be assimilated, I want to be left behind" (Aikau and Spencer, 2007).

In local public opinion, lifestyle and job opportunities offered by development plans of multi-national corporations were best ignored as they would cost them their indigenous lifestyle, which they were not ready to part with. On surface level, this appeared locally grounded, irrational and anti-modern but on a closer perusal, it became very clear that the Moloka'ians were a success story, their earnest endeavour of resistance was thought-provoking and deserved all the attention (Aikau & Spencer,

2007). Theoretically, their rigid position on tradition seemed to counter-pose indigeneity with modernity instead of making way for a mutual co-existence. Another way of looking at it could be that they were a befitting example of multiple modernities.

2.5 Tradition-Modernity Complex

By tradition I do not mean the docile transmission of some dead deposit, but rather the living repetition that manages to suggest a fresh truth. There is no such thing as a tradition that exists of its own accord. Instead, and always, tradition has to be embraced and cultivated

(Porphyrios, D. & Associates, 1989)

Tradition and modernity are quintessentially placed in opposition to one another. The dichotomy becomes sharper when these concepts are identified with their taken for granted epistemologies and ontologies. Tradition is held to be constitutive of a sense of continuity from age-old heritage and past practices whereas modernity is regarded as a promise of something new, something better betokening a notion of progress and development, marking a break from the past. However, a position of rigid dichotomy between the two has undergone transformation over the years. Gusfield in his article *Tradition and Modernity: Misplaced Polarities in the Study of Social Change* (1967), delineated seven fallacies in popular assumption of this bipolarity-

Fallacy 1: Developing societies have been static societies.

Fallacy 2: Traditional culture is a consistent body of norms and values.

Fallacy 3: Traditional society is a homogeneous social structure.

Fallacy 4: Old traditions are replaced by new changes.

Fallacy 5: Traditional and modern forms are always in conflict.

Fallacy 6: Tradition and modernity are mutually exclusive systems.

Fallacy 7: Modernizing processes weaken traditions.

Thus, tradition-modernity debate has matured over the years to become complimentary; in many parameters, sustainable development is found to be

integrally linked with it. Such evolved understanding has set the pace for peaceful co-existence of modern science and traditional indigeneity; where former is not treated as an authority required for validation of latter. However a balanced amalgamation of theory and practice in lines with changing strands of tradition-modernity debate is still missing. By evaluating possibilities of constituting *non-arbitrary symbols* of sustainable development, present study aims to join the missing link.

Like we already know, renowned critical thinkers and scholars of great repute from 20th century such as Edmund Husserl, Max Weber, George Simmel, Lukacs, Antonio Gramsci, Horkheimer, Theodor Adorno, Jurgen Habermas, Lyotard, Michel Foucault, Derrida, Jean Baudrillard, Anthony Giddens and Bauman etc. worked on the concept of modernity at some or the other juncture of their careers. Crisis of Western sciences, enlightenment based reason, instrumentality, ideology, market-driven consumerist society and that of epistemic institutionalized violence exerted by modern state – all qualify to be different aspects of criticism placed against modernity. As aptly put by Anthony Giddens, globalization is in a sense “the globalizing of modernity,” and modernity is “inherently globalizing” (Yi & Lingmei Fan, 2006).

Post enlightenment, reason gained supreme status of being the only valid way of understanding the world. Other forms of understanding societies, cultures, processes and institutions were undermined, even rejected. In the changing face of modernity, reason became an instrument of oppression; modernity gave rise to an unprecedented level of pathologies that in turn created havoc in contemporary era. Founding fathers of classical sociology- Emile Durkheim, Karl Marx and Max Weber and in recent times, noted sociologists namely, Jürgen Habermas, Anthony Giddens and Alan Touraine made critical appreciation of modernity.

Individualization and rationalization apparently are central to any notion of modernity. Max Weber explained the paradox of modernity from the perspective of *disenchantment*, a concept borrowed from Friedrich von Schiller. It spoke of an archetypical Westernized modern society where primacy was given to rationalized institutional arrangements in the form of rationalization of economy, bureaucratic administrative set-up, secularized society; where scientific knowledge was held

superior to other forms of knowledge or beliefs in opposition to traditional society which according to Weber remained 'a great enchanted garden'.

Critical theory and post-modern theory vehemently critiqued modernity. The universalizing tendency of modernity to homogenize diversities met with severe criticism. From Theodore Adorno and Max Horkheimer to Herbert Marcuse, many academicians have written about the growing *disenchantment with modernity*. Marcuse (1972) argued that the spirit of revolutionary activity accompanied by critical thinking is ideologically crushed by agents of modernity under the rubric of a rapid increasing *consumer culture*. People are too trapped by the appeal of material comfort to engage in a meaningful critical thinking. Thus, in a modern capitalist society, Marcuse's *One-Dimensional Man* (1964) is a shallow person living an illusory life guided by false consciousness; reflective of the drudgeries of human life reduced to consumerist puppetry.

Capitalism aided by globalization and liberalism is viewed as a system that on surface level allows individual expression and innovation but only to the extent that it creates conformism under the veil of diversity. In the name of freedom, capitalism produces homogeneity, favouring West-centric ideologies and institutions. Horkheimer and Adorno were of the opinion that by the standards of Western capitalist world, human beings were progressively getting mired in a loop of profit-making business models through the lure of gadgetry such as computers, smart phones, fast apps, social networking sites and attractive accessories etc., in terms of personalizing the experiencing of using these gadgets or applications with creation of an endless number of choices regarding styles, ringtones and screensavers and so on (Malpas & Wake, 2006).

Critical social theorists viewed modernity as a pathological case; Post-modernists on the other hand rejected the very epistemology (science, reason, objectivity, certainty, progress and truth) on which modernity was rooted. Modernity backed by rationality promoted notion of purposive human action rooted in an idea of progress (development); the purpose of modernity thus was to get better. However, there is a lot of ambiguity about the capacity of human agency to anchor progress. Long before the emergence of post-modernism, Nietzsche directly challenged notion

of progress pushed by modernity. In a blind adherence to market economy as chief determinant of all human activity, mankind has become engaged in setting up a dangerous tradition of *intellectual death* in human society. “Pursuing uniformity and producing difference in unprecedented ways...modernity has been an epoch of crossed purposes from its outset”, remarked Calhoun (1997). Invariably modernity altered human life in inexplicable ways. To offer a meaningful critical analysis on the broad theme of modernity, it is equally important to throw some light upon its merits. Marking a grand shift from the days of Rule of Divine Power; from a world plagued by superstitions and ignorance to a world guided by rationality and democratic institutions, modernity gifted us countless things arguably progressive and hitherto unknown. Like they say, there is no free gift¹³ in this world. Modernity too was plagued with certain pathologies; only a concentrated lot reaped the benefits of modernity. Thus, present study takes hints from (a) Habermas’s take on modernity as an unfinished project, (b) Eisenstadt’s notion of multiple modernities and (c) Giddens’s stress on reflexivity to arrive at a nuanced understanding of tradition-modernity complex with reference to research field.

Giddens (1990) referred to modern world as a juggernaut replete with high-end risks. To him, modernity was a double-edged sword that owed its dynamism to three separate but interrelated elements- (a) Separation of time and space, (b) Disembedding of social relations and (c) Reflexivity. Industrialism, capitalism, surveillance and military power in a nation-state were some of the central tenets of modernity’s institutional arrangements (Giddens, 1991). One could argue that modernity has a long way to go and that things will slowly but surely become better but ecological degradation cannot wait. It makes sense to think of concrete ways to deal with the grim side of modernity’s pathology with immediate attention. In a strong rebuttal to post-modernist stand, Giddens (1990), one of the most prominent thinkers on modernity and its institutions, rejected post-modernists’ holistic rejection of modernity. He argued that critique of modernity is very much an integral part of modernity since its inception.

¹³The concept of ‘free gift’ was explained by French sociologist Marcel Mauss in his book *The Gift* (1954); he argued that gifts are never free as human history is replete with examples of gifts bringing about reciprocal exchange, it sets forth some or the form of obligation; unlike in commodity economy, in a gift economy, the objects that are given are inalienated from the givers.

Again, Habermas, known to be a strong defender of modernity viewed it as an unfinished project, stressing on its potential to face *disenchantment*. According to Habermas, modernity in a true sense can be achieved only in a holistically rational society where both system (authority/state) and life-world (public/everyday world) co-exist symbiotically. His theory is critiqued for being utopian and elitist, as a *passé* for promoting old wine in a new bottle that is, enlightenment project. He stressed on the importance of *dialogical communication* but did not refer to some of the prime institutionalized forms of communication in present day world such as media, grass-root level social movements and so on. Some scholars have discussed wide array of possibilities laid down by modernity; engaging *reflexivity* as a tool against forces of hegemony, dehumanization and homogenization embedded in modernity.

Reflexivity is a popular approach in modernity discourse and *reflexive modernity* is one of its offshoots. It is often relegated to a redundant way of emphasizing self-referential quality inherent in modernity. What it denotes is a distinct second phase – *modernization of modern society*. Following this line of thought, social structures of contemporary world need not be absolutized in the style of Fukuyama's conceptualization of the *end of history* (Beck, Bonss & Lau, 2003). So to say, reflexive modernization is another hope attached to the survival of modernity corresponding to Habermas's notion of modernity as an unfinished project. As a concept, it was launched by three renowned European sociologists – Anthony Giddens, Ulrich Beck and Scott Lash. Notion of sustainability and that of new social movement were ingrained in reflexive modernity as it envisaged progress in a globalization led *risk society*¹⁴ through reshuffle and reform.

Notwithstanding its variegated manifestations, modernity can be perceived in following three ways – (a) First in a temporal sense, as a time period; (b) second in a socio-political sense as a set of institutions specifically designated as modern and (c)

¹⁴ Risk society, as defined by British sociologist Anthony Giddens, is “a society increasingly preoccupied with the future (and also with safety) that produces the notion of risk; German sociologist Ulrich Beck defines it as “a systematic way of dealing with hazards and insecurities induced by modernisation itself; thus both Giddens and Beck conceptualise risk society as a shorthand term for modern society. Their concept of risk society draws in the concept of reflexivity as a society that examines itself and in turn changes itself in the process. For details, please see Beck (1992) Risk Society, Towards a New Modernity.

third in a discursive sense as a special kind of philosophical idea or ideologically loaded dialectics between description and prescription that engenders delegitimization of certain practices in favour of another set of practices (Aloysius, 2009). In the realm of idea, modernity was positioned as harbinger of progress (development), science, rationality and universality. Past epochs were understood as non-modern in their capacity of being overwhelmed by religion, superstitions etc. whereas with rise of modernity, idea of enlightenment (reason) gained ground. This is more in lines of Comte's three stages of development (a) Theological (b) Metaphysical and (c) Scientific. Even in philosophical works of Kant and Hegel, modernity had profound importance for its emancipatory potential backed by reason (Habermas, 1981). Modernization theory of 1950s and 60s embraced modernity and its institutions. The period after Second World War was marked by rapid decolonization of several countries creating newer forms of international relations and geo-political strategies. Studying social changes was in great vogue those days and modernization was made to be a key instrument for change. For some, it was rather neo-colonialism.

Modernity was thus visualized as a grand unifying tool that slowly but certainly would mitigate global ignorance, superstition, poverty etc. that were supposedly unwanted baggage from the past. As a form of society, modernity adorned distinct economic, political and social characteristics. Economy-wise, it ushered in an era of capitalism that thrives to date, industrialization, growth of free market, shift from agriculture to industry, urbanization and so on. Politically, it brought greater decentralization, more democratization, and mass participation at different levels of decision making processes, bureaucracy and welfare policies. In social arena, a modern society was associated with important shifts in values and institutional devices. In the words of Talcott Parsons, society witnesses a shift from traditional to modern as social values and institutions move from particularism to universalism, ascription to achievement, functional diffuseness to functional specificity, and from collective-orientation to self-orientation. In Indian context, horizontal mobility versus vertical mobility in relation to caste versus class is an example of aforementioned shifts. In present study, though caste factor was not observed amongst the concerned indigenous communities but class was observed to be making its way into various

aspects of indigenous life.

In present study, modernity is viewed as a multi-dimensional lived experience; it is replete with irony as on one hand, it encompasses progress and development whereas on the other hand, it consistently moves in the direction of a risk society causing destruction in the name of development. Whatever it be, one cannot remain immune to the far-reaching effects of modernity. There could be three broad ways of engaging with modernity- (i) Celebration and eulogization of modernity, (ii) Negation and rejection of modernity, and (iii) Critical and creative negotiation with modernity (Kumar, 2008). For our purpose in this study, we stick to the third way.

In an edited book *Dominating Knowledge: Development, Culture, and Resistance*, authors Frederique Apffel Marglin and Stephen A. Marglin (1990) questioned the imposition of *modernization backed development ethos* in non-Western societies; arguing it to be soaked in ethnocentrism. Marglin pointed out that in the name of freedom and expansion of choices, development latently hooked people to a particular way of life (capitalist-driven); driving away the choices associated with an earlier lifestyle. Consequently, the choice of modern over traditional takes place forcefully and the gap between the two gets widened. In a similar vein, in his essay, *Technology and the Reproduction of Values in Rural Western India*, Arjun Appadurai (1990) made a critical analysis of electrification of traditional open-surface wells in a village in Maharashtra. It was observed that commercialization of agriculture, induced by technical change, not only disrupted reproduction of community values and culture, but also increased farmers' dependence on cash nexus, depriving them of the insurance provided by a close-knit communal existence. Collectively, these essays stressed on the significance of consolidating indigenous knowledge culture against West-centric modernization culture.

Thus, it was observed that modernity shared a unique relation with tradition. Zheng (2012) discussed two forms of tradition - ontological (substantive) and methodological (relative). Former referred to the combined element of stability and continuity within tradition, marked by passing down of unified and static knowledge/values etc. across generations. Latter referred to methodological element

whereby, tradition could be distinguished as changing forms of culture that acted as precursor to modernity, re-iterating tradition-modernity bipolarity. Notably, the association of traditional with an original form of culture, untouched by modernity must be dealt with caution. *Original form of culture* is a relative concept. For instance, the activities performed during internationally renowned *Horn Bill Festival* of Kohima, Nagaland (observed by researcher on way to field trips) strived to represent original forms of traditional ethnic culture so as to promote broader socio-cultural cohesion and maintain indigenous cultural heritage. However, they were part of a meticulously selected *intangible cultural heritage* of the past sought to be preserved by present generation. In this sense, original form of traditional ethnic culture can be understood as *invented tradition* or living tradition in congruence with modern life. There are some interesting examples from field, discussed in chapter five that elucidate a unique relationship between tradition and past. To qualify as a living tradition, an original form of ethnic culture constantly regenerates itself through various material and non-material texts that act as symbols of socio-cultural importance.

Giddens formed an interesting analogy between tradition and organic creatures – ‘they either develop or mature or they diminish and wither away’. So to say, tradition can be referred to as a form of living past that wears a normative hat as it represents not only what a society does but also what it ought to do. In this sense, tradition acts as a feeder for modernity whereby, invented tradition adds to the growth of modern.

In his article *The Essential Tension between modernity and tradition: Asian Cultural Heritage and Scientific development*, Smolicz (1991) rejected bipolar relationship between tradition and modernity whereby tradition betokened a negative connotation of static primitiveness. Such lop-sided dichotomy held progress (development) as de-traditionalized, something that did not go down very well with dynamic character displayed by tradition across time and space. Noteworthy that various aspects of scientific and technological changes are viewed today as new forms of neo-colonialism. In the light of such circumstances, demand for indigenization of science and greater focus on promotion of local cultural elements gained ground

rapidly in international debates and literature.

A symposia organized by the Asian Association of Social Science Research Councils (AASSREC, 1988;1989) demonstrated the Philippines example to establish that while modern nations cannot return to pre-scientific and pre-industrial modes of production, they can and must recognize significance of embedding science and technology in indigenous local perspectives. In Kumar's view (2008), enlightenment enthusiast philosophers of 18th century Europe such as Voltaire, David Hume, Jean Jacques Rousseau, Immanuel Kant, Adam Smith and others assured consolidation of modernity in subsequent epochs. First colonialism and then different manifestations of it in a post-colonial world acted as drivers of modernity, penetrating cultures and communities like capillary effect of power diffusing everywhere in Foucault's terminology.

Thus, classical notion of development found a new lease of life in the lap of enlightenment inspired Western modernity. This new lease of life was no ordinary tale. A sense of progress oriented linear development (read as a more qualified life) was deeply entrenched in enlightenment rationale. It spoke of a transition from tradition to modernity, heralding progress cocooned inside development acted upon by various agencies.

If development is seen as a qualifier of desirable change and progress, question arises as to what are the *symbols of desirable change and progress* and how are these symbols framed? Any development agenda is thus a value-laden enterprise. Since development is context driven, contingent on values and alternative conceptions of a qualified life on earth, it is not supposed to be a homogenising enterprise portrayed by modernity project. Emancipation from an overtly West-centric knowledge base is increasingly making its voice heard in social science research. Action in favour of indigenous knowledge of non-Western counterparts struggling for freedom from long-term silence is closely followed by abandonment of singular prism of West-centric vantage point in academic world. One of the central concerns running throughout this research is an active re-conceptualization of sustainable development *to act as an enabler and be acted upon* in world development crisis.

To channelize relationship between sustainable development and indigenous knowledge in relevant direction, it was important to move beyond intellectual negation of modernity and development and work towards formation of a consolidated theoretical framework for tapping true potential of the union. Critical theory, known for its normative dimension provides the right kind of boost for achieving this end; however it gets stuck with its own delimitation hence I resorted to theory of symbolism.

2.6 Symbolism

The semiotic logic can be applied to the differentiation of first world and third world or developed world and underdeveloped world. As we have seen earlier, meaning of a symbol comes when it is contrasted with other symbols. The Western symbols acquire their meaning in their opposition to the cultural symbols of the so called underdeveloped world. However, the question here is how to call one cultural symbol better than the other? Can we ever conclude that coca cola is better than lassi (apart from the issue of nutritional composition)? (Das, 2014, p.28)

A systematic study of signs and symbols was pioneered by Ferdinand de Saussure (1966), known as the father of structural linguistics. According to him, a sign is a combination of a concept (signified) and a sound image (signifier), where bond between signifier and signified is arbitrary i.e. there is nothing inherent in the signifier which creates the bond (hence it is unmotivated); however, it gets naturalized over passage of time. His conceptualization of a sign is more of a linguistic sign. He made a clear distinction between signs and symbols. In his theorization – One characteristic of a symbol is that it is never wholly arbitrary (unlike sign), it is not empty for there is the rudiment of a natural bond between the signifier and signified. The symbol of justice, a pair of scales could not be easily replaced by just any other symbol such as a chariot. Saussure differentiated between what he called as a ‘linguistic sign’ (unmotivated) and a ‘symbol’ (may or may not be motivated).

Semiotics (study of meaning-making) saw light of the day in 20th century, in conjunction with Saussure’s work on semiology, latter an offshoot of structural

linguistics. Charles Sanders Peirce introduced triadic theory of sign¹⁵ with several classifications of sign. One of the most prominent classifications being that of a sign as –(a) an ‘icon’ (sign denoting similarity to its object or representamen), (b) an ‘index’ (sign bearing factual/real connection with object) or (c) a ‘symbol’ (object interpreted out of habit or rule). Thus, a sign that loses its defining character in absence of an ‘interpretant’ is referred to as a symbol by Peirce.

In his famous book *Culture and Communication*, Edmund Leach reflected upon relation between message bearing entities carrying information. Leach (1976) classified symbols into - (a) ‘standardized symbol’ where association between A and B is arbitrary but habitual and (b) ‘nonce symbol’ where association between A and B is wholly arbitrary contingent on the whim of the sender e.g. private symbol as in dreams, one off symbols as in obscure poetry etc. He then put both these types of symbols under the broader umbrella of ‘metaphor’.

Sustainable development in conjunction with indigenous knowledge appears to be a battlefield of symbols with dominant cultures trying to push away other cultures into the backburner. In all human cultures, symbolic actions including verbal (e.g., language) as well as non-verbal behaviour serve dual function – (a) meaning-generation through categorization and (b) it binds message bearing entities together, creating relationship to one another. Signs can be understood contextually whereby meaning is context-driven based on contrasting categories. In light of aforementioned conceptualization of sign and symbol, it becomes crucial to understand as to what lies behind all the meaning-making?

According to Saussurean linguistics, it is the process of signification, that is, the act of binding together the signifier and the signified which makes a sign meaningful. However, in his book *Second Course in General Linguistics* (Saussure, 1966) dealt with this question cautiously and observed that production of meaning is not a mere co-relation between a signifier and a signified but perhaps essentially an act of simultaneous cutting out of two amorphous masses. Drawing on Saussure,

¹⁵ While Saussure formulated dyadic model of sign, consisting of a signifier and the signified, Charles Sanders Peirce theorized a three-part triadic model consisting of an interpretant, representamen and an object; the meaning of a sign is created by the interpretation it stimulates in those using it thus Peirce treats semiosis as a process while Saussure’s emphasis was on structure.

Roland Barthes observed that meaning is truly fixed only at the end of a double determination — signification and value (that is the difference it has with other signs). On the basis of theoretical aspects discussed so far, I used following understanding of a symbol:

A symbol is a concept created about a thing in one's mind, where the symbol is commanded to refer to that thing each time one thinks about it. What is important here is the *symbol*, the *concept* in our minds, the *thing* that the symbol refers to and the *nature of relation* that facilitates *act of referring*. It is in the last segment that is, the nature of relation facilitating the act of referring where maximum arbitrariness seeps in. The idea hence is to propagate *non-arbitrary symbols* of development.

Apparently, it is a symbol's information-storing component that renders it relevant. As rightly stated by Lester B. Rowntree and Margaret W. Conkey (1980), a symbol has the power to compress complicated meanings into a specific object or behaviour; it serves as a vehicle for a conception. Thus, it may be perceived as a communicative mechanism of regulation that restricts as well as proliferates promulgation of information. With such immense role to play, symbols apparently (a) appear to be ambiguous and context-driven and (b) they certainly do not exist by chance or by accident. They are the result of constant deliberation and powerful communication. They do not operate in vacuum; are very much a part of wider power- knowledge complex. Since they exhibit dual characteristics of both storing and maintaining flow of information, accordingly, symbols are loaded with power to transform/determine boundaries of socio-cultural life. Veblen's *conspicuous consumption* explained operation of symbols for maintenance of class boundaries in a so-called developed society. There are numerous examples of behaviours or that of objects vested with symbolic importance for elite groups, being abandoned once they are adopted by masses. Fashion couture is a good example.

Human beings are known for attesting artefacts, dressing pattern, architecture, body language etc. with symbolic meanings as a part of boundary maintenance since time immemorial. In fact the notion of *sacred versus profane* discussed in Durkheim's *Elementary forms of Religious Life* (1954) can be seen as a classic example of aforementioned concept of symbolism. Symbols are not static. Changes in society

lead to changes in symbols and that of their renditions so as to maintain cultural consonance. Yes, it may be true that symbols and their vast range of meanings undergo changes with changing socio-economic conditions of society. The bigger question is as to who decides upon these changes in society?

The entire socio-cultural landscape of a community is a storehouse of information for symbol-adducing society. But not all of it qualifies to be called a symbol. Socio-cultural landscape is the structural component of symbolic legacy; when confronted with human agency, it transmits information from one generation to another about a plethora of things ranging from subsistence, cosmology, territory to ecology or even historicity. For instance –

The interpretation of a Chinese city through the lens of symbolism by Wheatley (1971) threw light upon information-storing capacity of an urban landscape in which spatial design in the form of ceremonial structures and mundane streets redefined space as sacred versus profane. For Saussure, language without speech is unthinkable but Barthes (1967) cited an example from the world of fashion, arguing that in the world of fashion couture, there is no speech involved necessarily. Language of fashion does not emanate from speaking masses but from a closed group-circle that deliberates decisions. Similarly, in case of sustainable development, relation between symbols and that which they signify is set by hegemonic cultures of (ideological) dominance. Moreover, a plethora of symbols capture frenzy of a consumerist society on a regular basis; these symbols become so much a part of one's socio-cultural landscape that one does not realize being driven by them. Baudrillard (1981) referred to this as hyper-reality¹⁶ of postmodern world— dominated by effect of symbols (signifiers) with little real connection with signified. Technology in a way accelerates this process. Advertisements for instance are a very good medium of mass influence. They naturalize ideas through subtle assertion of symbols to masses.

On a similar ground, Habermas talked about colonization of life-world maneuvered by media in continuum with following acts- (a) Dismantling of

¹⁶ Hyperreality is a postmodern semiotic concept coined by Jean Baudrillard in *Simulacra and Simulation* (1981); it is referred to as a representation, a sign, devoid of an original referent that involves creating symbols or set of signifiers which represent something that does not actually exist.

traditional forms of life, (b) Differentiation of social roles, (c) System of rewards (of leisure and money) for the alienated labor and (d) Framing of hopes and dreams by state's projection of welfare and culture. Language according to Habermas, played a crucial role in human development.

In *Theory of Communicative Action*, Habermas proposed a revised notion of reason found on principles of an emancipatory communicative act (Habermas, 1981). Something as serious as sustainable development has a lot to do with communication media. How do symbols of a particular order culminate to become symbols of development?

Sustainable development is explicitly conceived as a strategy for sustaining development, not for supporting an infinitely diverse natural and social life (Lertzman and Vredenburg, 2005). Association of sustainable development with sustainable growth created both enthusiasm and confusion around the concept. When viewed under framework of symbolism, re-conceptualization of sustainable development can be perceived as a modern figurative use of an earlier French term 'desveloper', meaning 'undoing a wrap up', or something like 'de-enveloping' that seeks a better integration of indigenous knowledge, social justice and environmental sustainability (Salazar, 2009). In their article *Symbolism and the Cultural Landscape* (1980), Lester B. Rowntree and Margaret W. Conkey described *historic preservations* as manifestation of symbolization that bounds human experience through communication. Both message(s) and audience as part of such communication process must be in congruence with socio-cultural systems within which they exist. So to say, historic preservation is a process whereby certain attributes or features of past landscape (not necessarily for all socio-cultural contexts) are selected for preservation wedded with symbolic significance for present landscape and its participants. It may be viewed as a process of commitment to common symbols, many of which are ultimately sanctified.

2.7 Statement of Problem and Scope of study

The difficulty of producing locality is that it is "relational and contextual rather than scalar or spatial" remarked Appadurai (1995). Research studies drawing connection

between sustainable development and indigenous knowledge often face difficulties of relativism; one prime limitation put against concretization of indigenous knowledge is its highly context-driven character. It is associated with dangers of extreme cultural relativism and fluidity. Thus, present study also faced the challenge of generalisation but for that matter, sociology itself is a context-driven discipline. It was pertinent to observe as to how indigeneity (mostly set aside as traditional, in need of validation by modern science) confronted dominant systems of power-knowledge complex manifest in overlapping notions of modernity and science. The idea was to explore indigenous knowledge as a storehouse of possibilities and not just describe its existing forms of association with sustainable development. Development is a process and popular understandings of global development processes can be viewed as a collection of dominant symbols. These symbols are mostly arbitrarily selected. The thrust here was to encourage non-arbitrary symbols of development for instance indigenous practices that cut across generations. Thus, as a researcher, my aim was to address problems of West-centric notion of development, offer a revised understanding of sustainable development and to take indigenous knowledge beyond the realm of mere technical add-ons judged on parameters of Western science to a point where tradition (indigenous) and modernity (science) feed onto each other. After all why do we need to associate modernity and science with a singular value system?

2.8 Conclusion

As evident from the literature review, there is a vast body of studies highlighting growing contact between indigenous knowledge and global scientific community. When the rosy picture painted by MDPs began to lose its shine, scholars and policy-makers apparently started to explore indigenous knowledge practices of different communities in pursuit of ADPs. The main concern was to keep development discourse alive. Amidst the entire hullabaloo, where does sustainable development stand today? Is it just another buzzword subsumed by mainstream development or can it be clubbed with indigenous knowledge to form a coherent model of inclusivity and diversity. Failures in recognizing relationships among individuals, communities, cultures, and environments invited unprecedented levels of development crisis, not to speak of large-scale environmental and social crises. In present day world,

development activities are pre-occupied with exploiting world's natural resource reserves at an alarmingly unsustainable rate (World watch Institute, 2003).

At a time when local development needs act more as disguised by-products of modernization, plagued with externally imposed development ideas and activities (read as modernity) that are neither in sync with local concerns nor anchored in knowledge base of populations (tradition) for whom development is meant, Phek district of Nagaland stood at a critical juncture where significant chunk of local (indigenous) population favoured institutionalised development brought by religion and state.

Bagele Chilisa (2012) raised a thought-provoking question in her book, *Indigenous Research Methodologies* – “How is it possible to decolonize (social) research in/on the non-Western developing countries to ensure that the people's human condition is not constructed through Western hegemony and ideology?”

Mere policy adjustments advocating sustainable development and replacement of terminologies for example, developing instead of underdeveloped do not serve the purpose; for the purpose is to debunk long grounded power-relations in which imbalanced nexus of science, modernity, development and indigeneity is caught. It is only then that we can establish sustainable development as a storehouse of possibilities. Present study made an attempt to bridge this missing link in existing literature through the lens of symbolism. Next chapter lays out research methodology for the same.

CHAPTER 3

RESEARCH METHODOLOGY AND FIELD WORK: WHAT LIES BENEATH NUMBERS AND NARRATIVE

3.1 What (Ontology) and How (Epistemology) of Research

What does the word research imply? Let us start with its etymology – the word research is derived from the Middle French *recherché* that means to go about seeking. If we look at the English make-up of the word: it says re+search so the emphasis is still on seeking something. So then, what is it that we are seeking for? Does everything that we go about seeking qualify to be research? According to Merriam-Webster Online Dictionary, research implies “studious inquiry or examination; especially : investigation or experimentation aimed at the discovery and interpretation of facts, revision of accepted theories or laws in the light of new facts, or practical application of such new or revised theories or laws”. Being a student of sociology, it is only natural to question as to what qualifies to be called as sociological research. In the spirit of *sociological imagination* by Mills, sociological research can be understood as a critical and constant activity on the part of a social scientist to “translate personal troubles into public issues”. Sociologists in a way are fine tuned to connect their own lived experiences, personal challenges to bigger social issues. It thus becomes the duty of a sociologist to bridge the missing links between agency and structure and place them within a historical narrative. Thus, research involves a specific set of steps taken as a part of over-all process, channelized to collect and analyze data. The broader aim is to add to an existing body of knowledge, and/or to invent or discover new knowledge so as to increase our understanding of an issue (Creswell, 2003).

Once we understand *what* component of research, the immediate progression is to the *how* of it. How do we go about seeking? The practice of research involves much more than philosophical assumptions. Philosophical ideas must be ingrained in suitable research strategies and implemented with specific research methods meant to address the research problem(s). Thus, a framework is needed that combines the elements of philosophical ideas, strategies, and methods.

In the previous two chapters, I introduced *what* component of my research in the light of literature review, drawing out my research problem. In the present chapter, I have explained the *how* component of my research.

3.2 Formulation of Research Questions and Objectives in light of Statement of Problem

3.2.1 Research Questions

Q1. Can indigenous knowledge as claimed by researchers, social scientists and indigenous people across globe create horizon for new frontiers of knowledge conducive to sustainable development?

- (a) Discuss indigenous agricultural /non-agricultural practices? What new, successful and distinctive knowledge approaches can be created through examining them?
- (b) How do given communities of Phek district perceive the concept of development and that of sustainable development in particular?
- (c) Describe an endogenous understanding of hygiene, social wellbeing and gender role in given indigenous communities?
- (d) How are community forms of life related to corresponding indigenous practices? Are similar practices followed by any other community(s) in Nagaland or elsewhere?
- (e) Can 'Riiza-Zabo' serve as a non-arbitrary symbol of sustainable development?

Q2. Throw light upon interface between indigenous and modern science in context of tradition-modernity polarity in an increasingly globalized world faced with growing development concerns?

- (a) Discuss agricultural and non-agricultural practices of Phek district that are informed by scientific knowledge?
- (b) Can we envisage a meeting ground for indigenous knowledge and science with an independent space for both?

- (c) Is there any change in occupational pattern of given communities, if yes, whether transforming nature of occupation results in changes in indigenous practices?

Q3. What kind of relationship do indigenous communities of Phek share with government and non-governmental organizations?

- (a) Are people from concerned communities aware of various development related schemes under Government of India?
- (b) In what ways in their opinion have they been benefitted or kept away from state sponsored development schemes?
- (c) Do agriculturalists receive so called modern or scientific training from concerned government departments?
- (d) Role of NGOs if any in social well-being of concerned communities.

3.2.2 Research objectives

- (1) To assess Tradition (indigenous) – Modernity (science) complex in relation to indigenous knowledge and sustainable development through a comprehensive understanding of indigenous culture.
- (2) To decipher whether practices such as ‘Riiza/Zabo’ originated out of indigenous knowledge can be perceived as a source of non-arbitrary symbol of (sustainable) development.
- (3) To map out agricultural practices in Phek district, elucidating relation between those practices, community life (revolving around them) and associated worldview.

Now that we know the broad theme of the research and the specific questions that it entails, it is important to lay out the research methodology that would aid in answering those questions and meeting the over-all objectives of the research.

3.3 Research Methodology: Philosophical moorings and Theoretical Inspiration- Research activities (with underlying rationale) undertaken to satiate aforementioned questions and objectives

A research methodology comprises entire complex of organizing principles starting right from philosophical standpoint, theoretical orientation(s) to research strategies, methods, processes of data analysis –all brought together in a logical sequence. Thus, it is a comprehensive system of formulating cum executing research design. Abraham (2015) compared it with a ‘compass’ as it guides our actions undertaken in entire research process from start to end. In consideration of my statement of problem, research questions and objectives, I found it befitting to adopt mixed methodology approach. The craft of combining qualitative with quantitative methods in social science researches has gained acceptance in literature over the years.

Development being a highly contested terrain, always in a state of flux, involves a variety of debates and discussions. Accordingly, any research in this domain needs to be conducted with utmost sensitivity. Critical theory by default carries a normative concern and there could be several vantage points determining what lies at the core of one’s normative orientations. Since my research objectives necessitate a detailed understanding of given indigenous communities in terms of their own interpretation, I partly based my research on an ethnographic approach linked with broader theoretical framework of interpretivism through lens of symbolism; at the same time for greater reliability and credibility of my work (sociology being an empirical exercise at the end of the day), I also used survey method. Moreover, ethnography has anyway come a long way since the days of colonialism; it does not operate with a pre-conceived notion of tabula rasa anymore; it entails proper discussion of research methodology including sampling procedures and issues of generalizability and validity of research. Moreover choosing respondents is a part of a broader sampling process. It is mistakenly held by some that sampling is exclusively associated with quantitative methods. Even in qualitative methods for example, in ethnography, researcher chooses her/his sample; a sample is always there as it is not practically possible for the researcher to interact with every single person in the field. There may be occasions for example, community festival, meetings etc. where the researcher may get an opportunity to meet the community at large but even then she/he cannot possibly talk to each one of them.

According to Kuhn, the desire for a theory of knowledge is a desire for constraint- a desire to find ‘foundations’ to which one might cling, frameworks beyond which one must not stray, objects which impose themselves, representations which cannot be gainsaid. Radicalizing Thomas Kuhn, Rorty portrayed obsession with epistemology as an accidental but sterile turning in Western culture (Rorty, 1979).

3.3.1 Mixed Methodology

Mixed methodology approach tries to do away with epistemological constraints by advocating a pragmatic knowledge claim; it is problem-centred and pluralistic in nature. Pragmatic knowledge claim as a philosophical framework is associated with mixed methodology by virtue of its emphasis on research problem as the heart of research design that in turn determines methods of data collection. Several scholars have pointed out significance of stressing research problem in social sciences; the basic idea being research should not be limited or constrained by methods. A researcher should have the freedom to use multiple methods, qualitative and quantitative, either sequentially or concurrently. This solves dual purpose – Firstly; it strengthens credibility of the research, also resolves the conflict in social science research in terms of science versus common sense. e.g., if ethnography is story-telling or science; second, it aids in producing a detailed understanding of research topic in terms of number for generalization as well as words for meaning-production.

Pragmatism is not committed to any one system of philosophy and reality. It does not view world as an absolute coherent unity. Truth is relative in a sense that it corresponds to what works best at a given time; it is not based on a strict Cartesian dualism between mind and matter (reality). Reality is believed to exist in terms of social, historical, political and other contexts or so to say, as and how we experience it in Kantian sense. At times, pragmatism backed mixed methodology approach takes a postmodern turn, viewing world through a critical theoretical lens reflexive of broader political aims (Creswell, 2003).

Since my research aims at exploring deeper levels of connection between sustainable development and indigenous practices, a pragmatist underpinning seemed

apt from point of view of my research problem as it opens Pandora's box of multiple research methods that as rightly believed, helped me understand different worldviews, giving a concrete shape to my idea of engendering a fresh insight to an otherwise redundant development enterprise.

The usage of the term mixed methodology and not mixed methods is not by fluke. Since the entire research strategy is based on a mixed pattern, starting from philosophical assumptions, theoretical underpinnings and methods of data analysis that is why it is referred to as mixed methodology.

Euclid is supposed to have told Ptolemy: "There is no 'royal road' to Geometry. (Sen, 1999, p.85)

The situation today is less quantitative versus qualitative and more like an inclination towards quantitative or qualitative approach, somewhere on the continuum between the two. Crotty (1998) delineated four foundational questions to begin with for any research design:

- (a) Epistemology-theory of knowledge embedded in the theoretical perspective (e.g., objectivism, subjectivism etc.)
- (b) Theoretical perspective- philosophical stance behind the methodology (e.g. positivism and post-positivism, interpretivism, critical theory etc.)
- (c) Methodology-strategy or plan of action that links methods to research problem, governs our choice and use of methods (e.g., qualitative, quantitative, mixed methodology, experimental /survey / ethnographic research etc.)
- (d) Methods, tools and techniques to be used for data generation (e.g. observation, interview, questionnaires, interview schedules etc.)

Drawing from Crotty, Creswell (2003) formed a research methodology framework informed by three fundamental questions:

- (a) What are the knowledge claims including theoretical perspective pursued by the researcher?

(b) What are the specific strategies of inquiry?

(c) What are the methods of data collection and analysis used by the researcher?

For present study, I used theory of symbolism as theoretical support and keeping in mind nature of my research problem, I found it best to adopt a mixed methodology approach. Thus, data collection as well as analysis are done via both qualitative and quantitative methods that have their own set of protocols. A growing awareness of limitations of a strictly single method approach led to the spread of mixed methods approach. Thus, from the original concept of triangulation, emerged logic of data triangulation for increasing reliability and credibility factor of a research, popularly used today for mixing different types of data. Creswell (2003) outlined three general strategies with sub-variations to deal with mixed methodology approach –

(a) Sequential procedure: Researcher seeks to elaborate on the findings of one method by supplementing data from another method. This may involve beginning with a qualitative method for exploratory purposes, followed by a quantitative method with a large sample for generalization or vice-versa.

(b) Concurrent procedure: Researcher merges qualitative and quantitative data to provide a comprehensive analysis of the research problem. Here, data collection by both type of methods co-occur and finally researcher comes up with an over-all interpretation of integrated data.

(c) Transformative procedure: Researcher uses a theoretical perspective as an overarching framework that guides data collection by both quantitative and qualitative method. The theoretical frame of reference determines outcomes or changes anticipated by the study and may involve a sequential or a concurrent approach.

Keeping in mind the nature of my research field, I adopted a concurrent approach within mixed methodology.

3.3.2 Research Strategy: Concurrent combination of Survey and Ethnography

Survey: Survey is based on either cross-sectional or longitudinal study; chief instruments used are questionnaires or interview schedules depending on

characteristic of sample population. I conducted cross-sectional study of my research sample with the help of structured interview schedule comprising close-ended questions with a few open-ended questions.

Ethnography has earned quite a name for itself in the world of social science research and at the same time, it has been a controversy's child as well; witnessed harsh criticism, debates and dissents. Some of it can be understood in relation to the larger debate on natural science versus social science model of research. Rift developed between empiricist orientations of natural science method applied to study of human culture and behavior and those who saw a different model of scientific study in the lines of interpretivism, influenced by hermeneutics, as appropriate to social science research. For followers of hermeneutics, social science research is distinct from natural science in its endeavors to understand human actions and institutions shaped by shared or distinct socio-cultural experiences. Some differentiated the two models based on difference in nomothetic (universal laws) versus idiographic orientation (context-driven) (Creswell, 2003). An overt side-lining of ethnographic research as humanistic and interpretive, devoid of scientific procedures could produce a misleading picture. Several ethnographies make use of quantitative methods. It is not essentially a clash with numbers or with the spirit of scientific enquiry; it is more to do with the contrasting philosophical stances whereby, positivism stresses on the importance of quantitative methods as against interpretivism that focuses more on complex web of words, meanings and human actions. So to say, ethnographic research like any quantitative research has to have a sampling procedure. This does not make it any less qualitative. In my own research, e.g., I adopted purposive sampling for ethnographic case study of Riiza-Zabii system in Kikruma village of Phek district.

Thus, it can be said that to some, ethnography is more so of a philosophical paradigm than just another method, for others it is a method used as per research necessity and then there are a few others who take it as a broad research approach, somewhere in between the two positions. In my research, ethnography occupies the third position, focus being on exploring and revisiting nature of indigenous knowledge before testing assumptions about its relationship with sustainable

development. Ethnographic exploration consists of a small number of cases, mostly singular case of reference. Although I conducted ethnographic work in a total of four numbers of villages, the details of which will be discussed in the fifth chapter however, one of my prime focuses centered around Kikruma village, known for Riiza-Zabii system.

The choice of ethnography for my qualitative work was inevitable given the nature of my fundamental research questions and theoretical underpinnings. Being strongly vested with semiotics and hermeneutics, ethnography carries the potential to unravel a culture as a system of signs and texts. Clifford Geertz's (1973) conceptualization of 'thick description' for instance highlighted the significance of interpretation of cultural meaning by producing a dense holistic account of culture concerned. In a similar spirit, I have also tried to produce a 'thick description' of the indigenous practices imbued in their wider social settings.

The historical narrative behind ethnography can be quite illuminating as it is rooted in West-centric disciplinary actions heightened during colonial days. From then to now, forms of ethnography have undergone various shifts and turns from being a pioneering and first of its kind method of primary data collection defined by 'field' setting in a faraway distant land, mostly rural to a broad research approach that can be conducted in distant as well as immediate places, rural as well as urban settings. Thus along with growth of ethnography over the course of last two centuries, concept of 'field' has also undergone tremendous change in course of time. Today we have several new forms of ethnography in different types of field e.g. virtual ethnography, visual ethnography and so on (Denzin & Lincoln, 2005). In the words of Murchison (2010), Ethnography is the engaged, first-hand study of society and culture in action. The role of an ethnographer as researcher is unique in the sense that he/she cannot possibly be a totally detached or uninvolved observer. A detailed understanding of human society and culture with emphasis on inter-play of structure and agency is irreducible to a closed laboratory experiment with strict control of variables. Infact it is the very opposite of it as it seeks to study human life and culture in action. However, this should not be mistaken for lack of rigor in ethnographic research; the entire society being the researcher's laboratory, it rather demands total

commitment, time, patience, balance between objectivity and subjectivity and organizational skills of the researcher. Accordingly, ethnographers equip themselves with various research methods, techniques and tools to match the complexity of their nature of research.

Like mentioned above, ethnography as a research strategy carries a very interesting background, with its origin in the discipline of Anthropology whence it gradually became popular across various disciplines, especially Sociology. Both Anthropology and ethnography expanded during twentieth century in a particular set of historical circumstances marked by European imperialism, American expansionist tendencies and newly formed understandings of race, ethnicity, gender and class that usually re-iterated the differences between colonized and colonizers. Willingly or unwillingly, much of early anthropology and ethnography re-produced existing power-structures of the society in their research works. For instance, most of the ethnographers (barring a few exceptions) who studied distant marginalized communities were while males from the United States or Europe. Moreover, in some cases, their projects were direct extensions of political and colonial ambitions back at home. From then to now, ethnography has undergone many changes, especially in its writing style, data collection and with its over-all stress on reflexivity; nonetheless there are a few common grounds that have sustained from the days of early ethnography but not without criticism:

1. From Malinowski's (1922) work on the Trobriand Islanders to date, there is a general acknowledgment that ethnography requires a lengthy stay in the field— usually a year or longer.
2. Importance is still given to knowledge of local language.
3. Insider's perspective is valued.
4. Kinship charts and genealogy.
5. Emphasis on wide range of socio-cultural characteristics and related interactions between different elements of society and culture e.g. relation between economics and religion or between politics and gender.

Over course of time, some of these assumptions about ethnographic design have met with criticism as ethnography as a research strategy has evolved tremendously and been applied in different circumstances not just in distant places anymore. For instance, kinship chart need not necessarily be a part of contemporary ethnography. Moreover, in today's age of globalization, it is difficult to draw a strict dichotomy between insider and outsider.

It is important to know the historiography of ethnography but what is equally important for an ethnographer is to read at least a few original ethnographies by others. Not only that a good ethnography makes for a good read but also it broadens the horizon of an ethnographer makes him aware of the wide array of possibilities for ethnography as a research strategy.

3.3.3 Contemporary ethnography

Ethnographers experimenting with research methods, tools and techniques as well as writing style is not new, since the beginning, there were a few exceptions e.g. Zora Neale Hurston who presented her ethnographic findings based in Southern U.S in a non-conventional format in the early 1900s (Hurston 1990a, 1990b). What was new back in the later part of twentieth century is the development of a strong critique concerning many of the underlying assumptions of 'classical' ethnography. The use of ethnographic research by Chicago School for conducting study of urban American communities, especially in the city of Chicago opened new avenues for ethnography, recognizing its scope and dynamicity as a research strategy. Nels Anderson's *The Hobo: The Sociology of the Homeless Man* (1923) and William Whyte's *Street Corner Society* (1943) are two ground-breaking works from early days of Chicago school. Thus today ethnography is practiced in both rural as well as urban settings. Something that remains timeless about ethnography is its basic characteristic feature of being first hand study of a community and culture.

One of the central merits of ethnography as a research strategy is its ability to bring out locally relevant understandings and ways of operating. It is the very nature of an ethnography that renders the ethnographer as principal research instrument himself/herself. There is so much to do in the field. The ethnographer's five senses

are his best research companions in the field as they are the most important medium of data collection e.g. eyes for observing, ears for listening, skin for touching objects from material culture, tongue for tasting local cuisine, nose for having a sense of smells and fragrances that define activities in a given space (Murchison, 2010).

3.3.4 Reflexive turn in writing

Any talk about reflexive turn in ethnographic writing seems to be incomplete without referring to Clifford and Marcus's edited book 'Writing Culture the Poetics and Politics of Ethnography'. At around a time when a lot of debate and discussions surfaced regarding 'realist' school of thought, Clifford and Marcus's work brought a new turn to ethnographic writing. All the essays of their book present a critique of ethnographic representation of reality but with an underlying intention of instilling a wave of change and not just for the sake of rejecting writing culture.

In the very first chapter of the book (Partial Truths), Clifford wrote about 'new conceptions of culture as interactive and historical' that would produce better modes of writing. The essays raised important questions regarding truth claims, objectification of 'others', credibility and validity of ethnographic writing which is otherwise 'over determined by forces beyond the control of either an author or that of an interpretive community (Clifford & Marcus, 1986).

The position of reflexivity in contemporary social sciences is such that it almost represents a conundrum. One of the most commonly found forms of reflexivity is enacted reflexivity that is more like an autobiographical reflection inserted in research writing executed in sociological reflexivity, sometimes divorced from epistemological account of knowledge. Nonetheless, reflexivity raises real issues regarding nature of social sciences as it problematizes all three traditional roles typically played by a classical science – 'explanation, prediction and control'.

Bourdieu's conception of epistemic reflexivity, like his social theory, is founded principally on bedrock of scientific practice; is essentially collective and non-narcissistic. Thus, reflexivity, relationism and research go hand in hand form in field work (Maton, 2003).

By ‘**Field**’ is usually meant the location for doing research which does not necessarily mean a monolithic site. It is crucial for a researcher to choose field site pragmatically, depending first on the research problem followed by a host of other feasibility factors like geographical proximity, time, financial resource, language and so on. In my case, research problem ruled the choice of my field. Since I am revisiting sustainable development in relation with indigenous knowledge on the background of larger debate on tradition-modernity complex, Phek district particularly its indigenous practices and environmentally aware community (learnt from secondary sources) made it an apt choice of field site. Once in field, I faced my share of difficulties and limitations. I remember there were times when I questioned my choice of field only to quickly realize how privileged I was to be working in a place where most of the people were warm and receptive.

3.3.5 Relation between researcher and researched: Fieldwork Connections

Fieldwork being an integral component of present study, it is important to talk about the ‘what, where and how’ of data from field. In my research, ‘what’ part includes relevant information on indigenous community(s) of Phek district including their indigenous agricultural practices; religious or socio-cultural rituals performed in connection with agricultural activities if any, non-agricultural indigenous practices if any, socio-economic profile of natives and so on. The ‘where’ is first-hand data primarily from field as well as some data from secondary sources. The next is ‘how’ component of the data that includes data collection methods as well as process of analysis – It seeks to understand as to how various indigenous practices relate to their actual- livelihood status (economic activity), forms of family life and community life, religious and cultural beliefs and practices, gender role/status, influences if any that of modern scientific ways as well as that of government programmes and policies, especially in connection with development and of course role of agency in continuance and change(s) in any of these practices.

Any fieldwork is meaningless without optimal participation of the natives. Relation between researcher and researched is of prime importance for any research and all the more so in a qualitative approach of meaning-making such as ethnography. As an effective ethnographer, one has to imbibe the spirit of learning like a devoted

student. The way a researcher addresses the researched speaks in volumes of the bond shared between the two and it is no big revelation that a balanced bonding between researcher and researched plays a crucial role in qualitative research. Many ethnographers prefer to use the term ‘informant’ to other terminologies like ‘subject, surveyor or respondent’ as former betokens acknowledgement of a more active role in guiding and shaping the research process. So much of what distinguishes an ethnography from other research methods is in a way defined by this unique relationship, hence some call the researched as ‘co-researchers, interlocutors, associates, assistants and so on’. In my research, I have used two terms to address the researched – respondent (survey) and interlocutor (ethnography) based on the role played by the researched.

Gatekeepers, key informants and respondents/interlocutors: Mention must be made of the important role played by ‘gatekeepers’ in my research. As each village was a new place for me, I made it a point to contact someone or the other who was a localite from the village and in most cases, that person turned out to be the gatekeeper for my research and at times that person would take me to someone else who then acted as the gatekeeper. As a whole, I had gatekeepers from different walks of life, some occupying formal position of authority for example, Gaon Burah, Village Development Board President /Secretary/Member/Student Union President etc. and some were farmers, teachers and so on. As much as we choose our gatekeepers, many a times, our gatekeepers choose us. In some cases, where I doubted the gatekeeper’s intention being that of covert surveillance or may be an attempt to direct respondent/interlocutor’s dialogue in a particular direction or simply an extension of hospitality, I cross-checked data generated on such occasions by other methods and techniques for example, if it was an interview, I compared the data with observation method, interviewed multiple respondents, if required beyond the sample size and in a few cases also re-visited same set of people.

Generally, in field, we come across certain people who act as our key informants. I was lucky to have found some during my fieldwork with whom I am still in contact.

3.4 My Research area: Phek district, Nagaland

The state of Nagaland was formally inaugurated on 1st of December, 1963 as the sixteenth state of India. It is one of the eight states that form North-East India. It is bounded by state of Assam on the West, Arunachal Pradesh and part of Assam on the North, Burma on the East and Manipur in the South. The state capital is Kohima and the largest city is Dimapur. As per 2011 Census of India, it is one of the smallest states of India as per area and population size. Nagaland has a total number of ten administrative districts, inhabited by sixteen major tribes along with other sub-tribes. My fieldwork is based on Phek district that comprises five sub-divisions viz. (a) Chizami, (b) Pfutsero, (c) Chazouba, (d) Phek and (e) Meluri.

Let me quickly take you through some geographical, cartographical and demographic details (based on secondary sources) of Phek –

The official formation of Phek District, South-East Nagaland can be dated back to the year 1973 when it was carved out of Kohima district. Geographically, it is located in a strategic location, sharing international boundary with neighbouring country Myanmar to the East, inter-state boundary with neighbouring state Manipur to the South, district boundaries with capital city Kohima to the West and Zunheboto and Kiphire districts to the North respectively. Notably, name of the district is said to have derived from the word 'Phekrekedze' meaning watch tower in local dialect. Earlier a part of Kohima district, it attained the status of a separate district on 21st December, 1973. It is a hilly district besought with rich flora and fauna. There are three important rivers namely Tizu, Lanye and Sedzu. Besides, there are three important lakes called Shilloi, Chida and Dzudu. Summer is moderately warm and winter is cold. Monsoon sets in by last week of May and retreats by end of September. As per secondary sources, agriculture is the main occupation of local people with 80.84 % of population engaged in agriculture. In agriculture, the practice of 'Terrace Rice Cultivation' (TRC) is predominant. Besides agriculture, people are also engaged in some other activities like weaving, bamboo and wood carving, basketry etc. Most of the villages are said to be linked with electricity. Existing literature points out need for modernization of small-scale industries, to equip them with modern scientific

machineries so as to increase income-generation. Do native villagers' accounts tell the same story? We will know in the next two chapters.

A brief geographical description of the district –

Position in relation to longitude and latitude:

Longitude: 94°- 35'- 18" to 94°- 38'-09" E (L)

Latitude: 25°-37'-37" to 25°-39'-47" N (LT)

Boundaries of the district: East: Kiphre/Myanmar, West: Kohima, North: Zunheboto/Kiphre and South: Manipur

Total population: 1,48,246 (2001 census)

Area of the district: 2026 sq.km

Population density: 73person/sq.km

Literacy percentage: 71.35

The district is inhabited by two major communities – Chakhesang tribe and Pochury tribe. The word 'Chakhesang' is an amalgamation of names of three sub-tribes – 'Cha' from 'Chokri', 'Khe' from 'Chesham (Kuzha)' and 'Sang' from 'Sangtam (Pochury)'. Their local dialect is called Tenyidie apart from which Nagamese dialect is widely spoken.

3.5 Methods

3.5.1 Observation

If you want to understand what a science is, you should look in the first instance not at its theories or its findings, and certainly not at what its apologists say about it; you should look at what the practitioners of it do

(Geertz, 1973)

Observation method can be broadly classified into two types: *participant observation* and *non-participant observation*: while latter is safely used by many, former has its fair share of controversies. Many scholars question the possibility of 'actual participation' without affecting result of scientific observation of the researched. To

overcome the shortcomings of aforementioned bipolarity, four-fold typology was developed: complete observer, observer as participant, participant as observer and complete participant. Thus, observation method may rekindle ‘outsider-insider’ debate in ethnography if not preceded with caution. A few things along with basic research ethics need to be delineated at the very outset- whether it is a covert or overt research- what is known about the research and by whom; what is the nature of activities performed by the researcher in field, and what relationship does the researcher develop or aim to develop with the researched specially in relation to group membership dynamics and of course location of the researcher as an insider, outsider or both. For many, participant-observation is a paradox- they question integrity of this method claiming that there is an intricately thin line between participation and observation, which may be crossed if left unguarded. Notably, to some, all social science research is a form of participant observation in some sense or the other as one cannot possibly observe from the middle of nowhere, without being part of nothing (Hammersley & Atkinson, 1983). In this sense, it becomes a matter of extent or degree of participation and not presence or absence of it.

Ethnography and participant observation are closely linked with a humanistic bent of interpretive philosophical stance as opposed to positivist or post-positivist stance. Bearing an interpretive and critical stance however should not be mistaken as absence of scientific rigor. Within ethnography, several scholars acknowledge the importance of scientific stance. As my research aims at capturing local understanding of relation between indigenous knowledge and sustainable development, hence, observation both participant and non-participant was crucial to this study. Some of the important variables studied under observation method are agricultural practices, traditional water harvesting method, religion, socio-cultural rituals embedded in broader socio-economic as well as political structure of the community(s), occupational patterns, economy and lifestyle.

Following are three specific instances of my participant observer experience in field:

- (1) Phoyisha Cultural festival at Yisisotha village, Meluri subdivision
- (2) Collecting snails in Pani kheti at Kikruma village, Pfutsero subdivision

(3) Agriculture related activities across the district

(4) Porbami traditional Khilunyie (Fish festival) at Porba, Chizami subdivision

For non-participant observation, I used research log sheet and electronic media e.g. camera, video camera, smart phone to record the activities directly in field. Since my research objectives strive to derive meaning from 'inside' so I also tried to use participant observation method to some extent so as to be able to produce what is elucidated as *thick description* by Clifford Geertz (1973).

3.5.2 Interview

Along with observing people, talking to them was one of the most significant parts of my research. In research, just like observation does not mean mere seeing, similarly, talking also does not mean plain talking without any head or tail. By talking here is meant interviewing, of course interview may be informal as well but then there is some basic grammar to it. Like the famous saying goes: We must listen with an intention to understand and not just to respond! In case of ethnographic interviews, this is all the more important. Conversing with respondents, listening to them was a key part of my fieldwork. At times, there were some people who went on talking for hours but I was not quick to judge the relevancy of such lengthy conversations. I reserved that part for later as I audio-recorded conversations which got lengthy, the reason being there was so much more to it than just a person talking- body language, facial expression, sight and sound of the surroundings and one can never know which part of the conversation brings a fresh new insight to research topic or reveal something that is non-obvious. It is also true that in case, the interlocutor or informant deviates completely from the topic, it becomes important to bring them back to the concerns of one's research problems with care and sensitivity so as not to make them feel belittled or unimportant.

Interviews can be of various types. They may be used as an independent research method or as a part of broader research strategy like in my case. I conducted different types of interviews for different samples, the details of which are as follows:

For the first sample, I used structured interview schedule; for the second and third samples, I used semi-structured interview schedule.

3.5.3 Household Survey

I conducted household survey with the help of structured interview schedule, the chief intention being to map out trends in present socio-economic status of the community through certain markers such as

Sample size of household survey: 235 households (based on mixed probability sampling)

3.5.4 Secondary sources

Apart from collection of primary data, I also used secondary data relevant for building upon my research. Types of secondary sources include- official or archival records, folklores, monographs or personal documents, print and visual media and any other available literature.

3.6 Sample and Sampling Techniques

In this study, there were three samples as follows –

First sample comprised respondents for household survey. The sample size was 235. Since generalisations were to be drawn regarding socio-economic profile of the district from primary data based on this sample hence, to ensure maximum representativeness of the sample, multi-stage mixed random design was used as sampling technique.

The second sample constituted of respondents belonging to indigenous community(s), divided into four groups based on age and gender, segregated in terms of locality or site of indigenous practice(s). The four age-groups are:

- (i) Below 40 (Male)
- (ii) 40 & above (Male)
- (iii) Below 40 (Female)
- (iv) 40 & above (Female)

The sample size was 20 and since this sample was used for drawing detailed information related to the broader research theme under ethnographic study, hence the sampling technique used was mixed non-random design including quota sampling and purposive sampling.

The third sample comprised respondents from administrative machinery of the state mainly bureaucrats, politicians, scientists working in government centres of research, research workers and NGO workers. Since the respondents of this sample were people belonging to particular professions and were not easily available for interview, hence it was based on purposive sampling as per research theme and convenience or availability of the respondents. The sample size was 12.

The electoral roll, 2016 was used as **sampling frame**. The strata used were in terms of administrative and electoral units.

3.6.1 Sampling procedure for Household survey

As already mentioned, the sampling technique used for first sample that is household survey (235 respondents) was multi-stage mixed random design. It was multi-stage as it moved from broader strata i.e. from district level to constituency, from constituency to polling station and from polling station to electorate and then finally to individual respondent. It was mixed because different subtypes of random sampling were used at different stages to ensure proportionate representation of the entire district. As per electoral roll, 2016, entire district was stratified into five constituencies that were further subdivided into polling stations. Then urban and rural polling stations as given in the electoral roll were segregated for each of these constituencies. For selection of names of polling stations, simple random technique was used and to determine the number of polling stations as well as for the electorate, systematic random technique was used. The electorate was finally reduced to the level of respondent. Thus, depending on the type of research questions, either respondent or their household was used as sampling unit. The number of respondents to be selected from each polling station was done proportionate to the electorate of that constituency with the help of systematic random technique. The following steps were undertaken –

- (a) First, total number of electorate in the district was determined

- (b) Then total number of urban electorate in the district was determined
- (c) Then total number of urban electorate in each constituency was determined, followed by
- (d) Total number of urban electorate in each polling station as per constituency

Then similar information was outlined for rural electorate.

For instance – If total number of urban polling stations is 34 and total number of polling stations is 197 then the percentage of urban polling stations is equal to 34 divided by 197 multiplied by 100 i.e. 17%

After that the total number of urban polling stations in one constituency was divided by total number of urban polling stations in Phek district multiplied by 100 to arrive at product x. Thus the total number of polling stations to be selected from each urban constituency was x divided by 100 multiplied by 17 which is equal to y.

Same method was used for selecting number of rural polling stations from each constituency. The final number of polling stations selected for urban constituency is shown in Table 3.1 and for rural constituency is shown in Table 3.2

Table 3.1: Number of Urban polling stations

Sl.	Name of the urban constituency	Number of urban polling stations	Number of polling stations selected for survey
1	Meluri	4	2
2	Phek	12	6
3	Chizami	4	2
4	Chazouba	4	2
5	Pfutsero	10	5
Total		34	17

Table 3.2: Number of Rural polling stations

Sl.	Name of the rural constituency	Number of rural polling stations	Number of rural polling stations selected for survey
1	Meluri	47	24
2	Phek	26	13
3	Chizami	27	14
4	Chazouba	38	19
5	Pfutsero	25	13
Total		163	83

Then the names of urban and rural polling stations from each constituency were selected with the help of simple random technique. After selecting names, the next step was to calculate the number of respondents to be picked up from each of the selected polling station in urban as well as rural area. For this, the percentage of electorate in each polling station was used as a reference point. A total number of 53 respondents were selected from urban polling stations and 182 respondents were selected from rural polling stations giving a grand total of 235 respondents for the household survey.

Table 3.3: Urban Electorate

Sl.	Urban constituency	Total urban p.s	No. of selected p.s	Total electorate	Names of selected p.s	Total electorate in selected p.s	No. of respondents selected from p.s
1	Meluri	4	2	20568	Meluri Town A	495	2
					Meluri Town B	797	4
					Total	1292	6
2	Phek	12	6	20568	Phek A	523	2
					Phek B	939	4
					Phek C	799	4
					Phek D	939	5
					A/WI	753	4
					Old Phek Town	587	3
					Total	4540	22

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Sl.	Urban constituency	Total urban p.s	No. of selected p.s	Total electorate	Names of selected p.s	Total electorate in selected p.s	No. of respondents selected from p.s
3	Chizami	4	2	20568	Sakraba	515	3
					Chizami town	507	2
					Total	1022	5
4	Chazouba	4	2	20568	Chetebe town	959	5
					Chazouba town B	879	4
					Total	1838	9
5	Pfutsero	10	5	20568	Pfutsero A	310	1
					Pfutsero B	220	1
					Pfutsero C	430	2
					Pfutsero E	834	4
					Pfutsero G	704	3
					Total	2498	11
Total		34	17	Total		53	

As per Table 3.3, it can be seen that a total of **53** respondents were selected for **17** urban polling stations of **5** urban constituencies – 6 from Meluri, 22 from Phek, 5 from Chizami, 9 from Chazouba and 11 from Pfutsero.

It is to be noted that the serial number is only for convenience of organisation.

Table 3.4: Rural Electorate

Sl.	Rural Constituency	Total rural p.s	No. of selected p.s	Total electorate	Names of selected p.s	Total electorate in selected p.s	No. of respondents selected from p.s
1	Meluri	47	24	80565	Tehephu	273	1
					Non-Christian Khel	266	1
					Meluri Christian Khel	575	3
					MeluriA Wing	562	2
					Melury Colony	248	1
					Akhegow	695	3
					Phor	337	1
					Hutsu	539	2

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Sl.	Rural Constituency	Total rural p.s	No. of selected p.s	Total electorate	Names of selected p.s	Total electorate in selected p.s	No. of respondents selected from p.s
					Satuza	222	1
					Kuzatu	86	1
					Yesi	55	1
					Weziho(A)	232	1
					Sutsu	247	1
					Avankhu	82	1
					Letsam	69	1
					Wuzu	130	1
					Losami(A)	987	4
					Losami(C)	58	1
					Mollen	242	1
					Lephor	721	3
					LozaphuhuA	655	3
					LozaphuhuB	686	3
					New Phor	265	1
					Yisisotha	88	1
					Total	8320	39
2	Phek	26	13	80565	ThevopisuB	523	2
					Ruzazhomi	647	3
					DzulhamiA	817	4
					DzulhamiB	524	2
					DzulhamiC	491	2
					Phugwimi	954	4
					Metsale	479	2
					Chepoketa	608	3
					Khuzami	534	2
					Chosaba	126	1
					Phek village (B)	557	3
					Phek (D)	482	2
					Phek Basa	269	1
					Total	7011	31
3	Chizami	27	14	80565	Middle Khomi	796	3
					Gozoto	186	1

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Sl.	Rural Constituency	Total rural p.s	No. of selected p.s	Total electorate	Names of selected p.s	Total electorate in selected p.s	No. of respondents selected from p.s
					Poruba A	654	3
					Poruba B	729	3
					Enhulumi	637	3
					Chizami village	438	2
					Chizami B	725	3
					Chizami C	360	1
					ThechulumiaB	744	3
					ThechulumiaC	505	2
					Zhavame A	418	2
					Zhavanme D	515	2
					Pholami New	537	2
					Zavachhi	312	1
					Total	7556	31
4	Chazouba	38	19	80565	Phusachodu A	872	4
					Phusachodu B	779	3
					Phusachodu D	830	4
					Phusachodu F	724	3
					Thipuzumi B	619	3
					Thipuzumi D	501	2
					K.Basa	580	3
					Thenyizu A	563	3
					ThenyizuC	509	2
					Chesezu B	584	3
					ChesezuD	558	2
					Runguzu Nasa	265	1
					Chazouba C	719	3
					Yoruba B	383	1
					Yoruba C	619	3
					Yoruba D	482	2
					Chesezu Naza	468	2
					Phuyoba	140	1
					Khulazu Bawe	200	1
					Total	10395	46

Sustainable Development and Indigenous Knowledge

Sl.	Rural Constituency	Total rural p.s	No. of selected p.s	Total electorate	Names of selected p.s	Total electorate in selected p.s	No. of respondents selected from p.s
5	Pfutsero	25	13	80565	Kikruma S Wing II	638	3
					Pfutseromi B	492	2
					Lekhromi	883	4
					Zapami	447	2
					Lasumi	503	2
					Leshemi B	750	3
					Kikruma S Wing III	874	4
					Khezhakeno	700	3
					Kikruma N/W IV	483	3
					Pfutseromi C	624	3
					Pfutseromi D	486	2
					Zapami A	452	2
					Lasumi A	523	2
					Total	7855	35
Total	163	83		Total	182		

Table 3.4 shows that out of 83 rural polling stations selected from five constituencies, a total of 182 respondents were selected as follows – 39 from Meluri, 31 from Phek, 31 from Chizami, 46 from Chazouba and 35 from Pfutsero. The serial numbers given against the constituencies is only for organisational clarity.

For selection of these 235 respondents (53 urban + 182 rural), the following procedure was adopted:

For calculation of first sampling range, total electorate was divided by sample size of electorate. For example, if total electorate was 340 and sample size was 4 then the total electorate that is, 340 was divided by sample size that is, 4 to arrive at 85. Next step was to pick up first unit from 1 to 85 using simple random technique. So if I picked 60 by simple random then the first unit to be surveyed was 60 and remaining three units, sample size being 4, would be every 85th number, so to say, 145th would be second unit, 230th would be third unit and last, that is, fourth unit would be 315th.

Thus, the first number picked between range 1 to 85 by using simple random that is 60 in present example was the sampling range. If any one unit for example 315 was unavailable or it exhausted total electorate number then one would again need to go round about from the start, following same steps.

The household survey served dual purpose – Firstly; it helped me to formulate a first-hand report of socio-economic condition of people across the district. Since this survey was based on mixed random design, hence it was fairly representative as it included villages and towns across the district including several far flung villages, a few in remote border areas as well. Secondly, since the mixed research design was shifted to concurrent model, so, while conducting this survey, I met various people and was also able to interview respondents belonging to different age groups that added to the body of my qualitative data as well. A comparison between quantitative and qualitative data added to the over-all credibility of my research.

3.7 Tools and Techniques of Data Collection

(Research diary, log sheet, field notes, camera, audio recorder and language)

Although distinction is drawn between research diaries, a log sheet and field notes, it is often a blurred boundary, blurred for a good purpose. A research diary is essentially like a melting pot that allows interplay of all the subjective and objective elements captured during field work. It is less talked about but forms an invaluable part of research, alongside other methods of recording such as research log and field notes. Schatzman and Strauss referred to researcher's notes as "the vehicle for ordered creativity" (Schatzman & Strauss 1973, p.105). According to them, writing field notes and research diary is much more than a mere mechanical means of 'storing information for retrieval'. It is not just passive documentation activity but an active critical engagement with field and self on a regular basis. They outlined importance of strategy for recording detailed observation right from the inception to the end in three categories 'observational notes', 'theoretical notes' and 'methodological notes'. In a similar vein, Burgess (1981) referred to three distinct parts of a research diary- a 'substantive account', a 'methodological account' and an 'analytic account'. In fact, Burgess also pointed out the importance of

supplementing research diary with additional materials like maps, diagrams, photographs etc. I am not sure how far a strict adherence to category based note-taking is feasible in field however the larger the sample size the more sense it makes to organize notes as systematically as possible from the outset. I personally did not stick to category-wise note writing but maintained all three of them, - separate diaries for each unit of study i.e. village/town (that I wrote every night at bedtime; it was more like a brief reflexive note on entire day's experience), detailed field notes (which was more like jotting down things as and when anything relevant came up, not necessarily only related to my topic, sometimes verbatim quotes and anecdotes) and log sheet (containing details of my respondents). I must admit that written documentation proved to be immensely helpful in coding process. As far as additional documentation materials are concerned, I collected maps, drew charts and diagrams and took as many as pictures as possible. Photographs taken during various stages of fieldwork have been incorporated in chapter four and five in relation to thematic contents. These asunder I also filmed video recording whenever and wherever possible. Taking written notes was not objected anywhere however some people were not very comfortable with taking pictures or video recording in that situation I immediately kept the camera inside as a mark of respect for my informants. Audio recording was also not objected anywhere except for one interview situation when a bureaucrat asked me not to do any audio or video recording. Technology provides us with different gadgets to execute a sound, well-informed research. Electronic devices like cameras, recorders, mobile phones etc. are excellent ways of capturing data for retrieval and cross-examination. They have their own set of contingencies, e.g. battery charging and so on. In most places, there were long hours of power failure/cut and I would have to charge electronic devices in my car; of course I also carried portable chargers as part of my contingency toolbox.

Apart from these, 'language' is one of the most fundamental tools for conducting ethnographic research and so was it in my research as well. Working with a translator is not the best possible scenario but becomes necessary on certain set of circumstances. Luckily for me, familiarity with 'Nagamese', one of the local dialects spoken commonly all over Nagaland facilitated gaining access and entry to

the field and in establishing rapport and breaking the ice. Nagamese is a peculiar combination of three languages- Assamese, Bengali and Hindi. However in a few cases where I had to interview elderly people from the indigenous communities, I took the help of local student leaders for translation as such aged respondents spoke in local Tenyidie dialect.

3.8 Data analysis

There can be various stages of data analysis depending on the type of research. However, it is guided by certain key factors-

Familiarization with raw data quickly followed by data immersion; next natural step is identification of key concepts and themes so as to form a coherent thematic framework; this is followed by coding, indexing, mapping and charting and finally the interpretation. Since my research is based on mixed methodology, data analysis accordingly underwent nuts and bolts of mixed approach where I constantly moved back and forth two sets of data- quantitative and qualitative.

The very nature of qualitative research allows clubbing together of data analysis with ongoing data collection. It helps in execution of an informed research as it provides researcher with new insights and accordingly, shapes, re-shapes different aspects of research design. For instance, a few research questions may be omitted or added and so on. The final analysis is done only after data collection is over. An interim analysis enriches field study as it enables researcher to go back to the field with refined/revised questions and explore emerging areas of enquiry and take up deviant cases, if any. Data is stored during fieldwork in various forms. Note-taking or writing and recording are commonly found essential forms of data storage in qualitative fieldwork. This may include verbatim notes, transcribed recordings of interviews, random notes, personal notes born out of reflexivity, elaborate 'field notes', research diary and log sheet account etc. End of fieldwork is certainly not end of research. There is a lot of analytical work to be done at the later stage. There could be different stages of data analysis, starting from organization to interpretation. As mentioned earlier, interim data analysis in qualitative work is helpful. Transcribing a single interview may take several hours and may generate countless pages of

transcript. Initial stage of data organization may seem to be very tedious but it bears prime importance for arriving at a proper conclusion. An enormous chunk of data is produced- raw data. Researcher has to carefully interpret and analyze raw data, find answers to research questions and ultimately solve the research problem, leaving scope for further research on the topic. Generally, qualitative data is preserved in textual form, 'indexed' later to form analytical categories to adduce theoretical explanations. Analytical categorization needs a lot of rigor and coherency. It is apparently time-consuming but once done, it renders a sense of direction to an otherwise messy set of data. It may be derived either inductively or deductively, former being a common practice in qualitative research. The basic idea is to be as inclusive as possible and at the same time maintain distinctness of different factors such that categories become reflective of fine nuances, latent meanings and subtleties contained in data. Key themes are supposed to emerge and it is much more than reducing data to a few numerical codes (Pope, Ziebland & Mays, 2000).

There are many computer software programs that can be used at this stage. However, it must be borne in mind that software is only a facilitator to aid us in a systematic organization of developed themes and categories. For a thick understanding of my field, I resorted to multi-layered data analysis. For qualitative data, I did not use any software. Ethnographic research is replete with unstructured data; I took the route of manual coding, indexing, mapping and charting to arrive at broad themes based on research questions. For quantitative data, I used MS-Excel for statistical analysis of household survey data presented in MS-Word in form of tabulations and diagrams.

3.9 Experiences of and as a fieldworker: On being a Surveyor and an Ethnographer—

To begin with, I must mention that in most of the places in and around villages, I was accompanied by gate-keeper(s). There were a few occasions when I heard natives whispering to the gate-keeper about not being comfortable to be respondents for the study. This happened both in case of household survey interviewing and ethnographic interviewing. In such cases, I did not extend the interview for long as I did not want my presence as an outsider to affect my communication with rest of the villagers.

There were also times when a few people especially women seemed to be uncomfortable with video recording and photographs. On such occasions, I immediately put cameras aside. Then there were also my moments of shared reflexivity in field. Let me quickly share two such instances here –

It was another sunny afternoon in Hiitsu village (Meluri), I was on my way back to the village guesthouse from the traditional salt-making site. The combination of scorching heat and uphill climb in a steep mountainous track got me wondering as to how I would do that for the rest of my days in field! Moreover, the site of traditional salt-making, (by virtue of method applied) was extremely hot and humid. These were tiny huts where salt is made by the process of continuously boiling the mineral salt water. After I was done with the interviews, the only thought running in my mind was returning to my shelter; however, suddenly I found myself crossing path with a very old lady, I stopped to talk to her briefly. She was a seventy-five year old farmer, with hunchback and wrinkled face yet she passed a smile; she was amused to see me there. I was awe-struck to see her there, climbing the hills everyday and still practicing agriculture at such an old age. Next instance was from one of my survey interviews. While I was conducting household survey in a remote village of Phek district called Phugwimi, I came across an eighty year old respondent who blessed me and wished me good luck for all my endeavors. She commented,

“It was a pleasure talking to you, may you achieve success in whatever you are doing and also take care of your health, and it feels great to see a young girl like you working courageously.” In midst of hectic research schedule, those encounters and statements worked like boosters, and motivated me to do my work as sincerely as possible. I believe these were my moments of reflexivity in field apart from reflexivity involved in writing about field experiences.

Since my research design evolved into being a concurrent approach post pilot study, consequently, I was shuffling between the role of a surveyor and that of an ethnographer in the field. In ways more than one, it proved to be fruitful for my research. Initially I had sequential procedure planned in my research design; set out to conduct survey first, map out present socio-economic and educational status of concerned community(s) and then conduct my ethnographic work. However, once in

field, I realized the need to combine the two – Firstly, since my study involved both probability and non-probability sampling as per different samples, consequently, units of study selected by process of mixed probability sampling made geographical area of my research quite vast (in terms of travel time) even though within the same district. Most of the villages selected were situated in distant hilly areas and rough mountainous tracks with poor transport and communication. It would take several hours to reach from one place to another. Moreover, my idea was to conduct fieldwork in key places of indigenous practices in all seasons of a year as followed by local calendar which apparently included monsoons when transport and communication was even worse. Accordingly, during my pilot study, I decided to base my research design on concurrent approach.

Talking about experiences, it must be mentioned that the natives of Nagaland were in general very warm and hospitable people. In spite of being a single district since my research area was geographically large owing to selection of villages by systematic random sampling, travelling from one village to another took several hours in some cases. There were times when it was very difficult to find way to the destination, dark in the late evening hours with no fellow travellers on the roads and no internet connection; the local people came to rescue at such times. They were extremely co-operative. In fact I clearly remember the incident when my car got stuck in a bad dirt-kutchra road. The car refused to move even an inch, with the front wheels spinning and going deeper into the mud. It was only with the help of a local mini-truck driver along with some neighbourhood boys that I managed to reach my destination safely.

As far as ethnographic work is concerned, I did not face many difficulties. I had extended stays in all villages, namely Kikruma, Poruba and Hiitsu except non-Christain khel; the local people happily arranged my accommodation. The only major crisis that I faced was in terms of road communication to some remote villages selected for household survey. After completion of fieldwork and preliminary data organization aided by on-site data analysis done simultaneously during fieldwork, I re-visited field and spent another one month frequenting villages chosen for ethnographic study, to observe lapse(s) if any in my qualitative data.

3.10 Conclusion

Over time, semantics of the term sustainable development has changed to a point where it now acts more like a supplement to dominant paradigm of economic growth. However, such weaknesses betoken a larger fundamental separation between philosophical world views whereby, rational logic of Western scientific-industrial paradigm dominates. Development in all its manifestations, from the realm of symbolic to that of political economy is no less than a battleground and continues to be one of the most contested terrains in contemporary social sciences. Relevance of indigenous worldview and that of indigenous practices across globe are increasingly being stretched under the ambit of sustainable development. Present study relies on multiple methods approach under mixed methodology to capture a comprehensive understanding of the research problem. One golden thumb rule that I maintained throughout my research was to pay close attention to two factors- ‘repetition or continuity producing the obvious’ and ‘rupture or discontinuity, showing the non-obvious’. In next two chapters, I have tried to address the research questions and objectives through analysis of quantitative and qualitative data.

SECTION II

Chapter IV PHEK DISTRICT: A SOCIO-ECONOMIC PROFILE

Chapter V CHAKHESANGS AND POCHURYS-THE NATIVES OF PHEK DISTRICT:
AGRICULTURAL PRACTICES AND BEYOND

Chapter VI SUSTAINABLE DEVELOPMENT AND INDIGENOUS KNOWLEDGE:
A CONCLUSION TO A REVISED BEGINNING

CHAPTER 4

PHEK DISTRICT: A SOCIO-ECONOMIC PROFILE

In present chapter, I have reported and examined household survey data obtained from 235 respondents from a total of 83 villages and 17 towns spread across the length and breadth of Phek district selected by mixed multi-stage random design for maximum representativeness and credibility of the sample. The chapter begins with a brief account of five sub-divisions of Phek and then moves on to empirical world of social sciences in the form of a detailed survey data analysis based on fieldwork conducted in a timeline of nineteen months (January 2015 to August 2016). The main objective of conducting household survey was to generate primary data on socio-economic profile of the district. Some of the research questions have been addressed through statistical data at various points in the chapter as found necessary.

4.1 Five sub-divisions of Phek

4.1.1 Chizami

It is a small subdivision in Phek that has made a niche for itself in terms of socio-cultural and economic progress particularly in the area of sustainable farming, environmental conservation and women's rights over past few years. Interestingly, it is known for Chizami model of development that prioritizes collective health, gender, equality, food security and environmental protection. Under the joint collaboration of North East Network (NEN) and Chizami Womans' Society (CWS), new perspectives of gender equality, health, hygiene, sustainable livelihood and environment have taken shape. Today Chizami is one of the forerunners in heading women's rights, preserving indigenous food systems and safeguarding traditional agricultural practices in the district. The only Krishi Vigyan Kendra (KVK) of Phek district is located in Poruba village under Chizami subdivision. The subdivision is inhabited by Chakhesang tribe and farming is the main occupation of the people. Livestock rearing is an integral part of their farming system

4.1.2 Chazouba

Chozuba is yet another small subdivision situated at North-Western part of Phek. It is inhabited by Chakhesang tribe and farming is the main occupation of the people. Natives practice jhum and have also developed very good terraces for the cultivation of rice. Mono-cropping is generally practiced in both jhum and terrace rice cultivation (TRC) regions but in recent years, cropping pattern has undergone some changes; natives have started cultivating Rabi crops for example garden pea, mustard and winter vegetables. Livestock rearing is an integral part of their farming system; they generally rear pigs, fowl, ducks and rabbits. Mithuns are also reared in some villages of the subdivision.

4.1.3 Pfutsero

Pfutsero, the highest altitude town and the coldest living place in Nagaland, is a block headquarter in Phek district inhabited by mostly Chakhesangs. Pfutsero town under this subdivision is commercially important and comparatively closer to Kohima, that is, the capital of Nagaland. Kikruma village known for traditional rain-water harvesting called Riiza¹⁷ is located in this subdivision, not very far from Pfutsero town and it is also the largest village of the district. Khezhakeno, a very important village in the context of Naga migration history is also located in Pfutsero. Chakhesang Women Welfare Society, an NGO working for women's rights and environmental protection is based in this subdivision. Farming and livestock rearing are integral part of the economy. Pfutsero town has developed as a tourist place over the years.

4.1.4 Phek

This subdivision is centred on Phek town which is the district headquarter. It is inhabited mostly by the Chakhesangs. The Office of the Deputy Commissioner is located in Phek town. Farming is the main occupation of the people and animal rearing is a common practice however there is a gradual increase in the number of

¹⁷ In Riiza 'ii' is pronounced with 'uurghh' sound

non-agricultural occupational practices over the years especially in the sector of government jobs and small-scale businesses.

4.1.5 Meluri

This subdivision is home to the Pochury tribe and shares international border with Myanmar and some of the remotest villages of the district are located here. The international border check-post is situated at Avankhu under Pokhungri circle of Meluri subdivision. Farming is the main occupational practice here like all other subdivisions. Animal rearing is also widely practised; the subdivision is especially known for its systematic and developed mithun rearing practice. That asunder, it is also known for the supply of traditionally-made salt, consumed by many people locally across the district.

Sub-division wise popular indigenous agricultural practices in Phek (Singh, 2009) are as follows:

1. Zabo – Kikruma village, Pfutsero subdivision
2. Agrisilvihortipastural farming system – Pfutsero, Chozuba and Meluri sub-divisions
3. Alder based farming – Pfutsero, Chozuba and Meluri sub-divisions
4. Jhum or shifting cultivation – entire district
5. Terrace cultivation (Pani-kheti and Dry terrace) – entire district

Let us now go through findings from survey data divided into five sections based on subthemes related to research questions and objectives, presented in the form of tables, bar diagrams and pie charts, summing up to **53** in total number, each followed by a brief or discussion. First-hand information on socio-economic profile of the district has been compared with secondary data occasionally, to develop a better understanding of the field. The figures in bracket indicate percentage. The first section constitutes of two parts— *Respondent sample characteristic* comprising **12** tables and figures, followed by **8** tables and figures depicting *Characteristic sample of total household population*.

4.2 Characteristic of Respondent Sample

Table 4.1: Sub-division wise distribution of Respondents

Name of Sub-division	Number of Respondents	Total Number of Electorate
Chizami	36(15.32)	8578(0.42)
Pfutsero	46(19.57)	10528(0.44)
Chazouba	55(23.40)	12153(0.45)
Phek	53(22.55)	13102(0.40)
Meluri	45(19.15)	9416(0.48)
Total	235(100)	53777(0.44)

Source: Primary data

Table Analysis: Table 4.1 shows a total of 235 households selected from five sub-divisions out of which, highest number of respondents – 55 (23.40%) were from Chazouba, next 53 (22.55%) from Phek, followed by 46 (19.57%) from Pfutsero, 45(19.15%) from Meluri and lowest number of respondents i.e., 36 (15.32%) were from Chizami. Mixed random design was adopted for making the sample as representative as possible. Table 4.1 also shows total number of electorate from which respondents were selected for each subdivision.

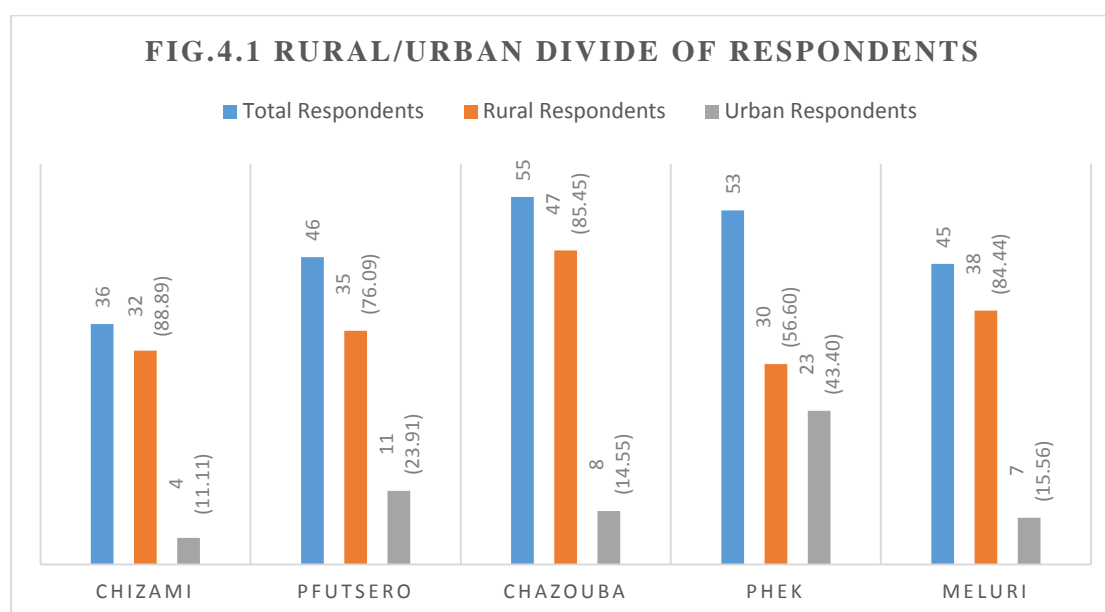


Fig. 4.1 Rural/Urban distribution of Respondents

Source: Primary data

Analysis: Fig. 4.1 shows distribution of respondents on basis of rural and urban differentiation as per electoral polling list in five sub-divisions. Majority i.e. 182 people (32+35+47+30+38) belonged to rural area whereas 53 people were from urban area. On basis of sub-division wise distribution based on mixed random sampling, majority people were selected from Chazouba where out of 55 respondents, 47 (85.45) were from rural area while 8 (14.55) were from urban area. Second majority was from Phek sub-division, which is also district headquarter, where out of 53 respondents, 30 (56.60) were from rural area while 23 (43.40) were from urban area. Next in order of higher number of respondents was Pfutsero where out of 46 respondents, 35 (76.09) were from rural area and 11 (23.91) were from urban area. Then stood Meluri where out of 45 respondents, 38 (84.44) were from rural area while 7 (15.56) were from urban area. The lowest number of respondents belonged to Chizami where out of 36 respondents, 32 (88.89) belonged to rural area while 4 (11.11) belonged to urban area. It is to be noted that highest concentration of urban population was found in Phek, followed by Pfutsero. Former includes district headquarter i.e. Phek town and later includes Pfutsero town, close in proximity to state capital Kohima.

Table 4.2: Gender profile of Respondents

Gender	Number of Respondents	Percentage to total
Male	184	78.30
Female	51	21.70
Others	0	0
Total	235	100

Source: Primary data

Analysis: Table 4.2 shows gender profile of respondents. Out of 235 respondents, 184 (78.30) were male and 51 (21.70) were female. Over sex ratio of Nagaland as per Census 2011 is 931 females per 1000 males which indicates that over-all female population is less compared to male counterpart. It is also to be noted that households were selected by systematic random sampling from electoral roll, 2016 (explained in details in chapter three) and whoever from the family was available and ready to be respondent was interviewed. Researcher tried to approach as many female

respondents as possible however they were either busy in agricultural field hence absent in house or if present, were engaged in various household chores, were reluctant to speak and would ask male members to answer survey questions. It was with the help of interviews and informal conversations taken up as part of qualitative data collection presented in chapter five that the researcher was able to engage meaningfully with female respondents.

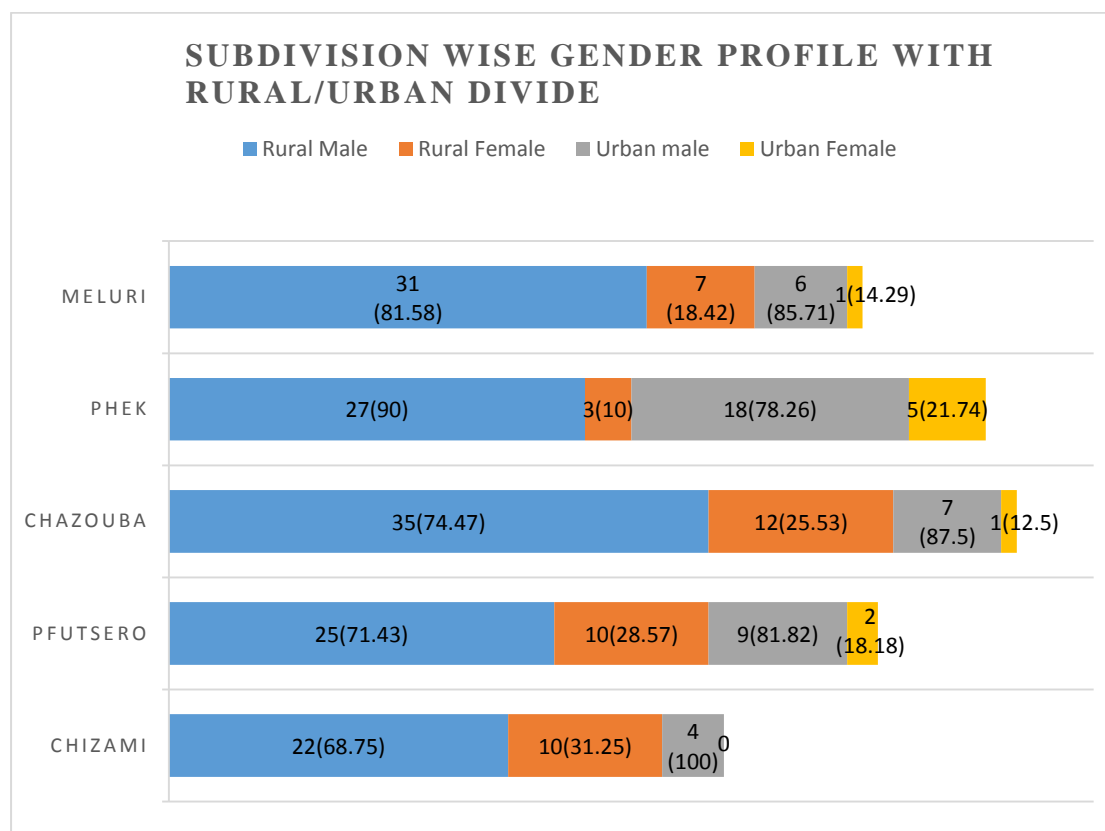


Fig. 4.2 Sub-division wise Gender profile with Rural-Urban divides

Source: Primary data

Analysis: Fig. 4.2 shows that in each subdivision, number of male respondents was higher compared to that of female. The pattern was similar for both rural and urban areas. The reason was same as discussed under Table 3. In rural area in absolute terms, Chazouba with 35 persons had highest number of male respondents. In urban sector, Phek with 18 persons had highest number of male respondents. It is to be noted that in Chizami, out of 4 respondents in urban area all were male. For female respondents in rural area, Chazouba subdivision had highest number with 12 persons. In urban area, Phek with 5 persons topped the list.

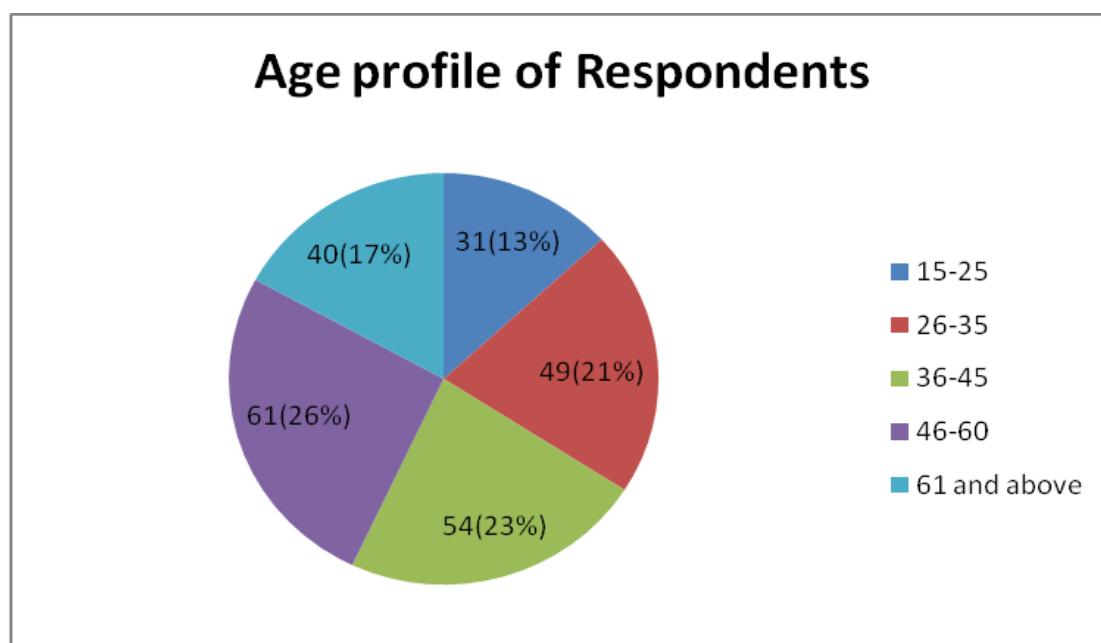


Fig. 4.3 Age Profile of Respondents

Source: Primary data

Analysis: Fig. 4.3 shows age profile of respondents. Out of 235 respondents, 31(13.19) belonged to lowest age group 15-25, 49(20.85) belonged to next age group 26-35, 54 (22.98) belonged to 36-45 age group, 61 (25.96) belonged to 46-60 age group and 40 (17.02) belonged to the oldest age group i.e., 61 onwards. As it is evident from Table 5, highest number of respondents i.e., 61 (25.96) was from age group 46-60 and lowest 31(13.19) from 15-25 years. Thus, there were more respondents from middle age groups 36-45 and 46-60 as compared to adolescents and senior citizens. It is to be noted that younger people (15-25) encountered in field generally showed lack of interest to take part in interviews except some exceptions. They were comfortable answering basic characteristic questions but for the research-related questions, they would turn to their elders.

Table 4.3: Sub-division wise Education profile of Respondents

Education	Chizami	Pfutsero	Chazouba	Phek	Meluri	Total Number of Respondents
Illiterate	7	6	9	3	10	35 (14.89)
School Drop Out	22	20	23	27	29	121 (51.49)
Below Matriculate	1	1	1	0	0	3 (1.28)
Matriculate	2	9	4	9	2	26 (11.06)
Intermediate	2	2	7	4	1	16 (6.81)
Graduate	2	6	9	9	3	29 (12.34)
Post-Graduate	0	0	2	1	0	3 (1.28)
M.Phil/Doctorate	0	0	0	0	0	0 (0)
Professional/Technical	0	2	0	0	0	2 (0.85)
Others	0	0	0	0	0	0 (0)
Total	36	46	55	53	45	235 (100)

Source: Primary data

Analysis: Table 4.3 shows education profile of respondents for all five subdivisions. Out of 235 respondents constituting nine educational categories, majority i.e. 121(51.49) were school dropouts, followed by second majority that of 35(14.89) who were illiterates. In addition to these, interestingly, 29(12.34) were graduates and 26(11.06) matriculates whereas 16 (6.81) respondents studied intermediate level and 3 (1.28) were students below matriculate level. A small number of respondents – 3(1.28) and 2(0.85) were from M.Phil/PhD and profession/technical background respectively. Latter includes engineering and medical science stream. Most of the village schools had classes up to eight standard moreover, students travelled long distances to attend schools, these two reasons led to a high drop-out percentage of students after class-8. Apart from infrastructure and communication problem, another reason cited by respondents was poor financial condition because of which many parents could not afford to send their children outside villages for completing studies.

Education is one of the most important factors determining socio-economic progress in India. As per 2011 Census figure, national literacy rate is 74%. The literacy rate as per Table 6 is 85.11% (illiterate being 14.89%). As per 2001 data (DHDR-Phek, 2009, p.196) literacy rate of Phek district was shown to be 70.31% in 2001. It must be noted that primary data for present study was collected in 2015-16; literacy rate shows significant hike of an average 1% increase every year. As per Census of India 2011, literacy rate of Nagaland is 80.11%.

The functional definition of literacy in the Indian census since 1991 is— The total percentage of the population of an area at a particular time aged seven years or above who can read and write with understanding. Effective literacy rate= number of literate persons aged 7 or above divided by population aged 7 and above multiplied into 100.

Table 4.4: Rural/Urban divide in Education profile of Respondents

Education	Rural Respondents	Urban Respondents	Total
Illiterate	30 (85.71)	5(14.29)	35
School Drop Out	99 (81.82)	22(18.18)	121
Below Matriculate	3 (100)	0(0)	3
Matriculate	18 (69.23)	8(30.77)	26
Intermediate	11 (68.75)	5(31.25)	16
Graduate	19 (65.52)	10(34.48)	29
Post-Graduate	1 (33.33)	2(66.67)	3
M.Phil/Doctorate	0 (0)	0(0)	0
Professional/Technical	1 (50)	1(50)	2
Others	0 (0)	0(0)	0
Total	182 (77.45)	53(22.55)	235

Source: Primary data

Analysis: Table 4 shows education profile of respondents as per rural-urban areas. It is to be noted that for both rural and urban areas, highest number of respondents was

from school dropout category. However, in case of post-graduate respondents as against a total of 3, two were from urban and 1 from rural area. There were no respondents in the category of higher education M.Phil/ Doctorate.

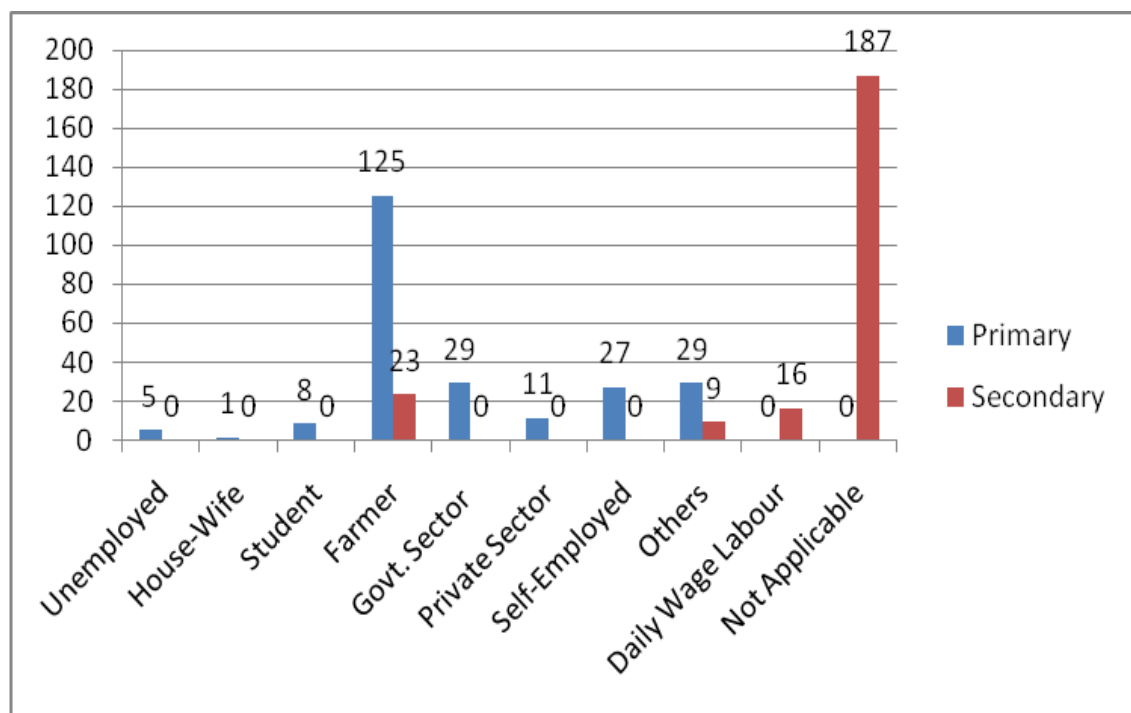


Fig.4.4: Occupational pattern of Respondents (Primary and Secondary)

Source: Primary data

Analysis: Fig. 4.4 illustrates occupational pattern of respondents including primary and secondary occupation. As evident from the table, *farmer i.e., agriculture sector* with highest number of respondents – 125 was the main primary occupation for respondents of Phek district. Second highest number of primary occupation was shared by two categories – *government jobs* and *others* at 29 each. There was not a single respondent professing daily wage as primary occupation. Out of 235 respondents, only 48 persons had secondary occupation. Interestingly, out of these 48 persons, 23 were farmers, 16 were daily wage labourers and 9 were from others. It is to be noted that category *self-employed* refers to local businesspersons and the category *others* refers to carpenters, weavers, tailors, handicraft workers (bamboo and cane products) pastors, social workers, local leaders or politicians.

Table 4.5: Sub-division wise comparison of Occupational pattern of Respondents

Occupation	Chizami (Primary/ Secondary)	Pfutsero (Primary/ Secondary)	Chazouba (Primary/ Secondary)	Phek (Primary/ Secondary)	Meluri (Primary/ Secondary)
Unemployed	0/0	1/0	4/0	0/0	0/0
Housewife	1/0	0/0	0/0	0/0	0/0
Student	1/0	1/0	3/0	3/0	0/0
Farmer	22/4	25/9	31/3	19/5	28/2
Govt. sector including retired employees	4/0	6/0	6/0	8/0	5/0
Private sector	3/0	2/0	3/0	3/0	0/0
Self-employed	1/0	4/0	4/0	9/0	9/0
Others	4/1	7/1	4/2	11/0	3/5
Daily wage labourer	0/6	0/2	0/2	0/4	0/2
Not applicable	0/25	0/34	0/48	0/44	0/36
Total	36	46	55	53	45

Source: Primary data

Analysis: Table 4.5 re-establishes agricultural farmer as the main occupation of respondents in all five subdivisions as once again highest number of respondents belonged to the category farmers in all five subdivisions. Chazouba had the highest number of farmer-respondents at 31, followed by Meluri (28), Pfutsero (25), Chizami (22) and Phek (19). The Govt. sector category was also uniformly represented within the range of 4-8 in all five subdivisions with Phek (district headquarter) having highest respondents at 8 and Chizami lowest at 4.

Table 4.6: Rural/Urban divide in Occupational pattern (Primary and Secondary)

Occupation	Rural		Urban		TOTAL	
	Primary	Secondary	Primary	Secondary	Primary Occupation	Secondary Occupation
Unemployed	4	0	1	0	5	0
House-Wife	1	0	0	0	1	0
Student	7	0	1	0	8	0
Farmer	107	16	18	7	125	23
Govt. Sector including retired employees	20	0	9	0	29	0
Private Sector	8	0	3	0	11	0
Self-Employed	13	0	14	0	27	0
Others	22	9	7	0	29	9
Daily Wage Labourer	0	13	0	3	0	16
Not Applicable	0	144	0	43	0	187
Total	182	182	53	53	235	235

Source: Primary data

Analysis: Table 4.6 shows that out of 125 respondents with farming as primary occupation, 107 were from rural and 18 from urban areas. In each category of primary occupation, except self-employed, it was seen that respondents from rural area outnumbered that from urban. In case of self-employed, out of 27 respondents, 14 were from town and 13 from rural area. The town areas with higher number of shops and greater commercial activities had more people engaged in self-employment.

Table 4.7: Primary occupation of Respondents with Secondary occupation

Primary Occupation	Farmer	Daily Wage Labourer	Others	N.A	Total
Unemployed	1	0	0	4	5
House-Wife	0	1	1	0	2
Student	0	1	0	7	8
Farmer	6	10	5	104	125
Govt. Sector including retired employees	3	2	1	23	29
Private Sector	3	0	0	8	11
Self-Employed	3	1	1	22	27
Others	7	1	1	19	28
Total	23	16	9	187	235

Source: Primary data

Analysis: Table 4.7 illustrates that out of 23 respondents with farming as secondary occupation, 6 also had farming as their primary occupation. It means that six of them professed farming as both primary and secondary occupations. Out of 16 respondents with daily wage labour as secondary occupation, 10 of them had farming as primary occupation. Similarly, 5 respondents under others had farming as primary occupation. Thus it can be derived that farming was primary occupation for most respondents with secondary occupation. Thus, out of 48 (23+16+9) respondents with secondary occupation, 23 (1+6+3+3+3+7) of them had farming as primary occupation. This reiterates the prevalence of farming or agriculture as one of the chief sources of livelihood for the natives.

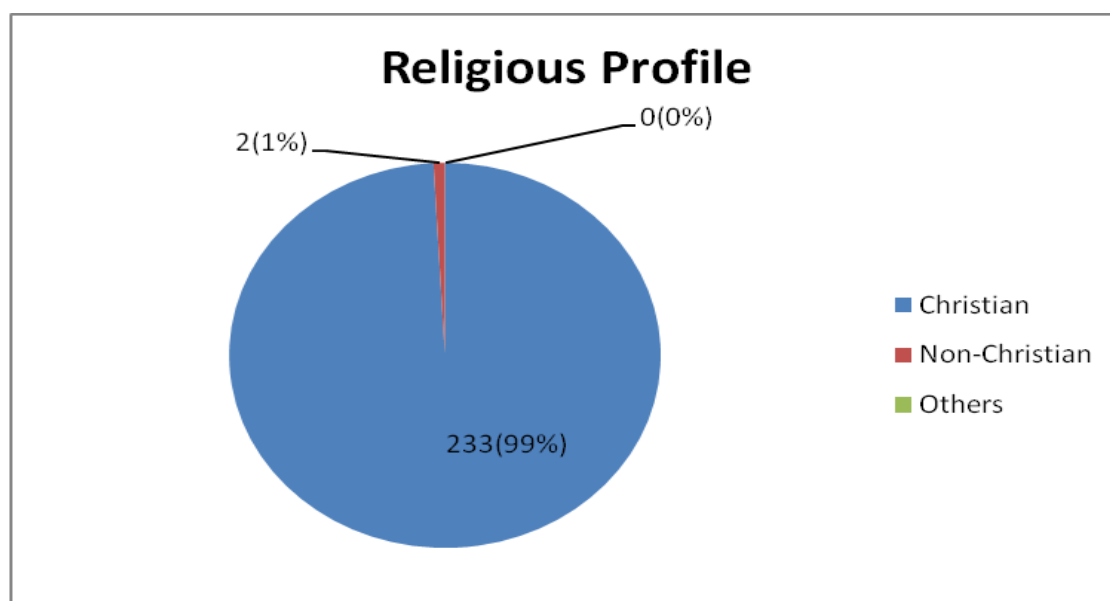


Fig. 4.5 Religion profile of Respondents

Source: Primary data

Analysis: Fig. 4.5 indicates that out of 235 respondents, Christians (99.15%) were absolute majority with only two non-Christians. It is to be noted that a few people from non-Naga community such as Hindus and Jains were interviewed informally during ethnographic study but in case of household survey, all 235 respondents belonged to Naga community – Chakhesangs and Pochurys.

4.3 Characteristic of Household Population

Table 4.8: Total number of people including family members of Respondents

Name of Sub-Division	Total Number of People	Total Number of Electorate
Chizami	205	8578 (2.39)
Pfutsero	262	10528 (2.49)
Chazouba	260	12153 (2.14)
Phek	288	13102 (2.20)
Meluri	212	9416 (2.25)
Total	1227	53777 (2.28)

Source: Primary data

Analysis: Table 4.8 shows that out of total electorate (Phek district) constituting of 53777 people, total household population i.e., respondents along with their family members comprised 1227 people (2.28) In terms of subdivision wise percentage to electorate, Pfutsero (2.49) topped the list, followed by Chizami (2.39), Meluri (2.25), Phek (2.20) and lastly, Chazouba (2.14). As per this table, highest number of household population belonged to district headquarter Phek subdivision, followed by Pfutsero. It is to be noted that the two most prominent town centres in the district also falls under Phek and Pfutsero respectively.

Table 4.9: Rural/Urban divide of Household population

Name of Sub-Division	Rural	Urban	Total Number of people
Chizami	171	34	205(16.70)
Pfutsero	199	63	262(21.35)
Chazouba	223	37	260(21.19)
Phek	173	115	288(23.47)
Meluri	174	38	212(17.28)
Total	940	287	1227(100)

Source: Primary data

Analysis: Table 4.9 shows rural and urban population of total household population. Total rural population was 940 (76.61) and urban was 287 (23.39). Among the subdivisions, in absolute numbers, highest number of total household population i.e. 223 in terms of rural area was Chazouba and in terms of urban area it was 115 from Phek.

Table 4.10: Gender profile of Household Population

Name of the Sub-Division	Male	Female	Total	Percentage to the total
Chizami	109	96	205	16.71
Pfutsero	139	123	262	21.35
Chazouba	148	112	260	21.19
Phek	158	130	288	23.47
Meluri	110	102	212	17.28
Total	664	563	1227	100

Source: Primary data

Analysis: Table 4.10 shows subdivision wise gender profile of entire household population where it can be seen that total population sample including family members of respondents was 1227 where total female was 563 and total male was 664. It is to be noted that in case of respondent sample, total female: male ratio was 51:184; the reasons were cited below Table 2. As per Census 2011, sex ratio of Nagaland is 931: 1000, i.e. 931 females per 1000 males.

Table 4.11: Education profile of Household Population

Educational Qualification	Chizami	Pfutsero	Chazouba	Phek	Meluri	Total	Percentage to the Total
Illiterate	28	21	32	15	32	128	10.43
School Drop Out	65	75	87	115	64	406	33.09
Below Matriculate	66	66	46	59	55	292	23.80
Matriculate	14	21	21	25	12	93	7.58
Intermediate	14	16	24	25	13	92	7.50
Graduate	7	37	28	27	17	116	9.45
Post-Graduate	0	9	7	4	2	22	1.79
M.Phil/Doctorate	0	1	0	0	0	1	0.08
Professional/Technical	1	6	3	0	1	11	0.90
Others	10	10	12	18	16	66	5.38
Total	205	262	260	288	212	1227	100

Source: Primary data

Analysis: Table 4.11 shows subdivision wise educational profile of total household population – The category of school dropouts – 406 (33.09) topped the list similar to the trend in educational profile of respondents, followed by the category of school students at below matriculation level – 292 (23.80). Next on the list was the category of illiterates i.e. 128 (10.43). Based on educational profile of respondent sample (Table) and that of total household population (Table 11) in comparison with secondary data as per DHDR, 2001, p.13-14, 196 and literacy rate of the state as per Census 2011, it can be safely concluded that the scene of basic education in the district has improved over the years.

It is to be noted that the category others in Table 11 refers to new-borns, infants and non-school going small children.

Table 4.12: Occupation profile (Primary) of Household Population

Occupation Type	Chizami	Pfutsero	Chazouba	Phek	Meluri	Total	Percentage to the total
Unemployed	5	5	11	9	4	34	2.77
House-Wife	2	0	1	2	4	9	0.73
Student	87	93	67	86	67	400	32.60
Farmer	74	82	111	117	78	462	37.65
Govt. job including retired employees	12	35	33	33	19	132	10.76
Private job	4	4	13	7	7	35	2.85
Self-Employed	6	27	11	10	13	67	5.46
Others	2	5	3	7	3	20	1.63
Daily Wage Labourer	0	0	0	0	0	0	0
Not Applicable	13	11	10	17	17	68	5.54
Total	205	262	260	288	212	1227	100

Source: Primary data

Analysis: Table 4.12 shows the occupational profile of total household population. The highest number of people was under the category of farmers, followed by students and government job-holders respectively. As per Table 3, 11 and 12, it may be concluded that the over-all status of education has undergone improvement in the district over the years. However, as far as economy is concerned, as per occupational

pattern of the sample population in primary data combined with secondary data from DHDR 2001, it can be said that agriculture continues to be the backbone of the district economy.

It is to be noted that the category others in Table 12 refers to weavers, tailors, handicraft workers (bamboo and cane products) pastors, social workers, local leaders or politicians. Self-employed here includes carpenters along with businesspersons. The category N.A. in Table 12 refers to infants, non-school going children and differently abled people.

Table 4.13: Occupation profile (Secondary) of Household Population

Occupation Type	Chizami	Pfutsero	Chazouba	Phek	Meluri	Total	Percentage to the total
Unemployed	0	0	0	0	0	0	0
House-Wife	0	0	0	0	0	0	0
Student	0	0	0	0	0	0	0
Farmer	2	22	15	11	12	62	5.05
Govt. job including retired	0	0	0	0	0	0	0
Private job	1	0	0	0	2	3	0.24
Self-Employed	2	1	7	3		13	1.06
Others	11	9	8	4	1	33	2.69
Daily Wage Labourer	4	1	10	0	0	15	1.22
Not Applicable	185	229	220	270	197	1101	89.73
Total	205	262	260	288	212	1227	100

Source: Primary data

Analysis: Table 4.13 shows secondary occupational profile of total household population. It can be deduced that there has been no radical change in main occupational pattern of given communities. Agriculture is still the prevalent form of primary occupation for highest number of people. However, there is some upward inclination in two other sectors – government jobs and self-employment mostly small-scale local level businesses. Notably some of the people who were engaged in other professions still practised agriculture as secondary occupation and in most cases even though individual respondents did not practise agriculture but one or the other family

member certainly practised it barring a few exceptions where the entire family was engaged in non-agricultural profession. Thus it can be said that transformation in occupational pattern is little and has not resulted in any major change in indigenous practices.

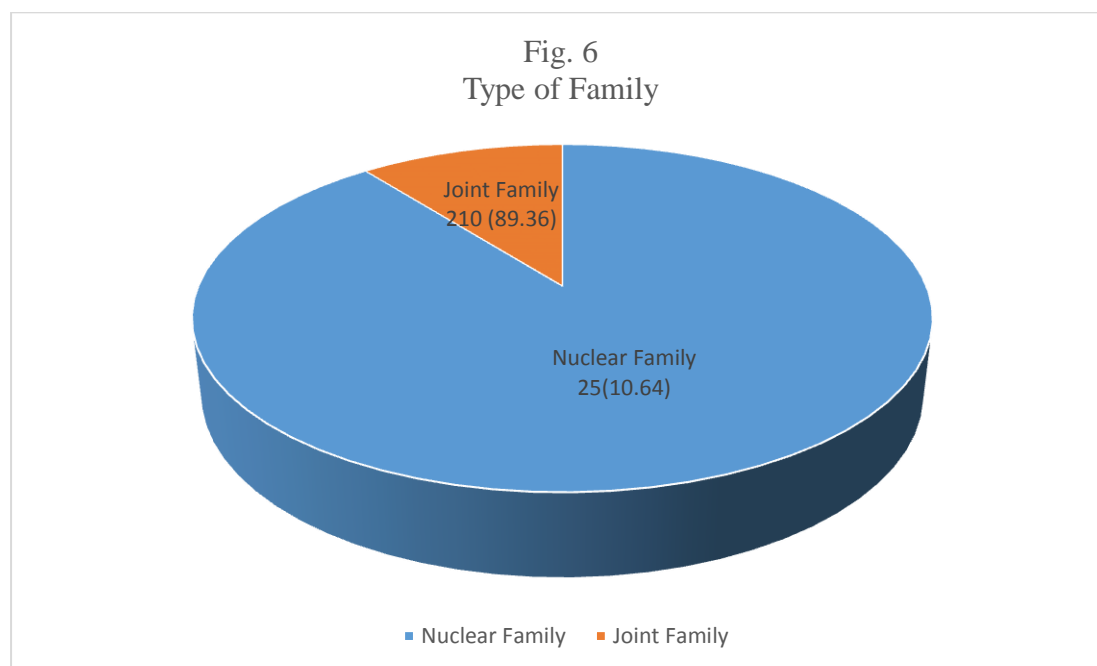


Figure 4.6 Type of Family

Source: Primary data

Analysis: Fig. 4.6 indicates that out of 235 respondent families, maximum (210) were nuclear families. The remaining 25 (10.64%) were joint families. This data goes in sync with the seeping in of modern values of nuclear family vis-à-vis Westernised culture under the influence of Christianity for the natives of Phek.

Table 4.14: Size of Family

Number of Family Members	Chizami	Pfutsero	Chazouba	Phek	Meluri	Total Households
1 to 2	2	4	5	6	5	22
3 to 4	8	8	20	19	11	66
5 to 10	24	32	29	28	28	141
11 onwards	2	2	1	0	1	6
Total	36	46	55	53	45	235

Source: Primary data

Analysis: Table 4.14 shows that out of 235 respondent families, 141 of them had members in the range 5-10. Though there were only 6 families with members 11 and above but it is to be noted that in many households total number of then living family members was less in comparison to original number as married children especially daughters had become part of separate households. Thus, on an average most households, inspite of family pattern being mostly nuclear were big with two to ten children.

4.4 Lifestyle changes, Health and Hygiene: Basic Amenities and Assets –

This section is a set of 8 tables and figures illustrating lifestyle changes, aspects of health and hygiene amongst natives through studying availability of basic amenities, asset possession, medium of cooking, changing spatial character of homes, shopping and medical facilities. Their own perspective on status of lifestyle change was also registered through posing direct questions on magnitude of lifestyle changes in the community over the years.

Table 4.15: Basic Household amenities

		Number of Households	Percentage to Total	
Electricity	Yes	233	99.15	
	No	2	0.85	
	Total	235	100	
Water Supply	Yes	Community Water Supply	223	94.89
		Household Tap Water	12	5.11
	No	0	0	
	Total	235	100	
Toilet facilities	Yes	Toilet Only	21	8.94
		Toilet with bathroom	214	91.06
	No	0	0	
	Total	235	100	

Source: Primary data

Analysis: Table 4.15 shows that most of the respondent families had all three basic household amenities – electricity, water supply and toilet facilities. Only 2 families (0.85%) did not have electricity. Out of 235 families, 223 (94.89%) had community water supply and only 12 (5.11%) had household tap water. 214 (91.06%) families had toilet with bathroom and remaining 21 (8.94%) had toilet only.

Table 4.16: Household Assets

Assets	Possession	Number of Households	Percentage to Total
TV	Yes	132	56.17
	No	103	43.83
	Total	235	100
Mobile Phone	Yes	230	97.87
	No	5	2.13
	Total	235	100
Vehicle(Two-wheeler and Four-wheeler)	Yes	59	25.11
	No	176	74.89
	Total	235	100
Fridge	Yes	15	6.38
	No	220	93.62
	Total	235	100
Washing Machine	Yes	7	2.98
	No	228	97.02
	Total	235	100

Source: Primary data

Analysis: Table 4.16 shows household asset possession trend, whereby, 56.17% of respondent households had TV while remaining 43.83% did not. 97.87% of households had mobile phone and only 2.13% did not own a mobile phone. Only 25.11% households had vehicle as against 74.89% who didn't own one. 93.62% households did not own a fridge while only 6.38% did. 97.02% of the families did not own washing machine as against only 2.98% who had washing machine. Thus it can

be seen that mobile phone and television were the two most commonly held assets. However these were not smart phones or modern television sets except some exceptions.

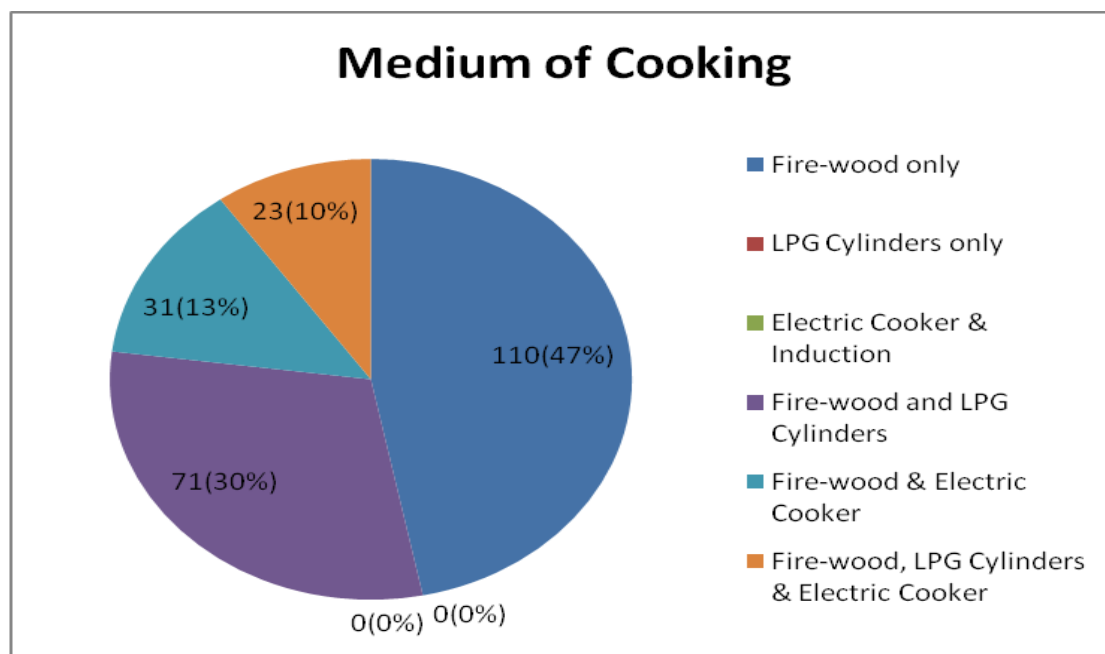


Figure 4.7: Medium of Cooking

Source: Primary data

Analysis: Fig. 4.7 shows that maximum number of households – 110 (46.81%) used only fire-wood for cooking. Next category belongs to 71 households (30.21%) that used fire-wood and LPG cylinder as well. Another 31 households (13.19%) used fire-wood and electric cooker while the smallest category 23 households (9.79) used all three medium i.e., fire-wood, LPG cylinder and electric cooker. The table indicates that fire-wood was used by all households partially or fully as a medium of cooking. During fieldwork it was observed that for all households including the ones who had access to LPG cylinder, firewood was the preferred medium of cooking. According to the respondents, (a) Cylinders were expensive due to black marketing and that subsidized cylinders were not easily available and (b) They used gas stove when they were lazy otherwise food cooked in firewood tasted better.

Table 4.17: Rural/Urban divide in type of House

		Rural Area	Urban Area	Total
Housing	Pucca House	28	16	44(18.72)
	Semi-Pucca House	52	13	65(27.66)
	Kutchra	102	24	126(53.62)
	Total	182	53	235(100)

Source: Primary data

Analysis: Table 4.17 shows that the majority (53.62%) of the respondent families had kutchra houses, followed by semi-pucca houses (27.66%) and pucca houses (18.72%). Out of 44 pucca houses, 28 were in rural area and 16 in urban; out of 65 semi-pucca houses, 52 were in rural area and 13 in urban area; out of 126 kutchra houses, 102 were in rural area and 24 in urban area. It is to be noted that for both rural as well as urban areas, maximum houses were kutchra-type. The kutchra as well as semi-pukka houses were built in traditional style but modified as per needs of changing times. All households necessarily had a fireplace irrespective of the type of house. These asunder, modern day houses (kutchra or pucca) had separate areas for domesticated animals e.g. pig and poultry as there was evolved sense of hygiene amongst natives.

Table 4.18: Sub-division wise Shopping trend

Market	Chizami	Pfutsero	Chazouba	Phek	Meluri	Total
Inside Village/ Town	9	25	40	31	38	143(60.85)
Outside Village/Town	13	4	1	0	0	18(7.66)
Both	14	17	14	22	7	74(31.49)
Total	36	46	55	53	45	235(100)

Source: Primary data

Analysis: Table 4.18 shows that highest number of respondents families 143 (60.85%) accessed market facility inside their own village/town while only a small segment of 18 households (7.66%) did shopping exclusively outside village/town and average number of households 74 (31.49%) accessed market facility both inside and outside their village/town. Market here included shopping for clothes, grocery etc.

Table 4.19: Sub-division wise Healthcare

Medical Facility	Chizami	Pfutsero	Chazouba	Phek	Meluri	Total
Local PHC	21	29	49	41	38	178(75.74)
Local PHC & Others	15	17	6	12	7	57(24.26)
Total	36	46	55	53	45	235(100)

Source: Primary data

Analysis: Table 4.19 shows that respondent families in all five subdivisions had access to government primary healthcare centre and most of the households 178 (75.74%) used local PHC facilities for free medicine as well as treatment of minor ailments whereas for major healthcare issues, villagers preferred to go to nearby towns especially Kohima, Dimapur and in a few cases to Guwahati for further treatment. It is to be noted that others here indicate hospitals outside the locality i.e. village or town.

This data can be examined in the light of a basic health service sample survey (DHDR Phek-2009) wherein it was found that 28.79% of rural male respondents and 66.12% of urban male respondents expressed satisfaction over existing medical facility. In case of female respondents, 49.34% of rural area and 50% of urban females were satisfied with basic health services. Table 19 shows that all respondents had access to one or the other kind of medical facilities though it doesn't show the extent of satisfaction the respondents had from existing facilities. However, as per ethnographic data, discussed elaborately in chapter five, out of 20 respondents, 14 of them expressed satisfaction over basic health care amenities in the district. Together read with the DHDR Phek-2009 report, it can be deduced that roughly 50% of the population of Phek district were satisfied with health facilities.

Table 4.20: Subdivision wise Magnitude of Life style changes over last 25 years

Life style changes in last 25 Years	Chizami	Pfutsero	Chazouba	Phek	Meluri	Total
Drastic	32	44	52	52	42	222
A little	2	0	3	0	3	8
No change	0	0	0	0	0	0
Others	2	2	0	1	0	5
Total	36	46	55	53	45	235

Source: Primary data

Analysis: Table 4.20 shows that for each subdivision, as per majority respondents, lifestyle changed drastically over last 25 years. In Chizami, 32 out of 36; in Pfutsero 44 out of 46; in Chazouba 52 out of 55; in Phek 52 out of 53; and in Meluri 42 out of 45 respondent families told that they underwent drastic lifestyle changes. There is no family with 'No change' and only 8 out of 235 who admitted to have undergone 'A little' change. There were 5 respondents under category 'Others' who were clueless about it and had mixed reactions. They did not give any definite response. It is to be noted that these lifestyle changes were in relation to basic lifestyle changes including food, clothing, housing, education, transport and communication and so on.

Table 4.21: Rural/Urban divide on magnitude of Life style changes over last 25 years

Life style changes in last 25 Years	Rural Area	Urban Area	Total
Drastic	173	49	222 (94.47)
A little	7	1	8(3.40)
No change	0	0	0(0)
Others	2	3	5(2.13)
Total	182	53	235

Source: Primary data

Analysis: Table 4.21 indicates that magnitude of lifestyle changes over last 25 years shows no differentiation between rural and urban area. In both rural (173/182) and

urban (49/53) areas, majority (222/235) respondent families admitted having undergone lifestyle change ‘drastically’.

4.5 Indigenous Agriculture and Related practices –

The third section consists of **12** tables and figures highlighting core indigenous agricultural practices and other related domains including horticulture, traditional rain water harvesting and animal rearing.

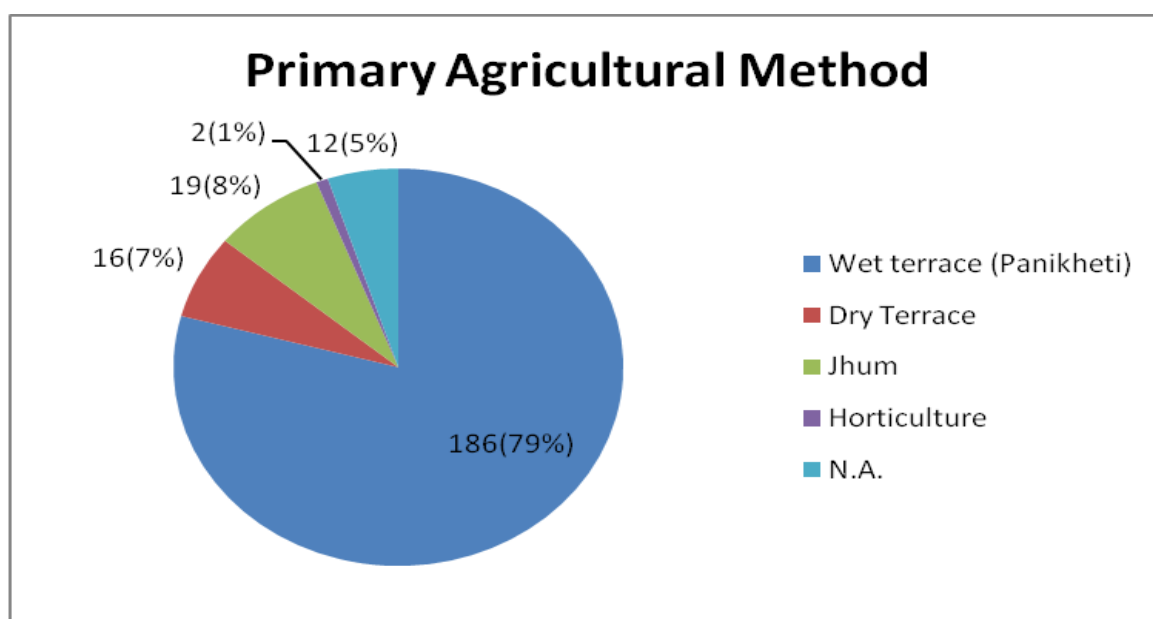


Figure 4.8: Primary Agricultural Method

Source: Primary data

Analysis: Fig. 4.8 shows that ‘Wet terrace Rice Cultivation (Panikheti)’ was the most commonly practised agricultural form with 186 households (79.15%). ‘Jhum’ came second with 8.085%, closely followed by ‘Dry Terrace’ – 6.81%; ‘N.A.’ category (i.e., people who did not practise any form of agriculture) stood fourth with 5.11% and ‘Horticulture’ being a new field had least number of practitioners – 0.85%.

Table 4.22: Rural/Urban divide in Core Agricultural Practices

Agricultural Practice	Rural Area	Urban Area	Total
Wet terrace (Panikheti)	145	41	186
Dry terrace	14	2	16
Jhum	18	1	19
Horticulture	2	0	2
N.A.	5	7	12
Total	182	53	235

Source: Primary data

Analysis: Table 4.22 shows that in rural area along with the main agricultural practice of 'Wet terrace' (145), 'Jhum' (18) and 'Dry Terrace' (14) were also popular. In urban area, 'Wet terrace' (41) was the main practice with 'Dry Terrace' accounting for 2 households and 'Jhum' one family only.

Table 4.23: Secondary Agricultural Practices

		Number of Households	Percentage to Total
Secondary Agricultural Practices	Panikheti	6	2.55
	Dry terrace cultivation	9	3.83
	Jhum cultivation	96	40.85
	Horticulture	13	5.53
	Jhum & Horticulture	6	2.55
	Dry terrace & Horticulture	7	2.98
	Dry terrace & Jhum	17	7.23
	Dry terrace, Jhum & Horticulture	9	3.83
	N.A.	72	30.64
	Total	235	100

Source: Primary data

Analysis: As per Table 4.23, there were 72 respondent households (30.64) who did not resort to any secondary agricultural practice. Out of the remaining families, highest number i.e. 96 (40.85) practised 'Jhum cultivation' as secondary agricultural

practice; 17 (7.23) had ‘Dry terrace along with Jhum’; 13 (5.53) had ‘Horticulture’; 9 (3.83) households had ‘Dry Terrace Cultivation’; another 9 (3.83%) had ‘Dry Terrace, Jhum & Horticulture’ all together ; 7 (2.98) had ‘Dry Terrace & Horticulture’; 6 (2.55) had ‘Jhum & Horticulture’ and another 6 (2.55) had ‘Panikheti’ as their secondary agriculture practice. Thus it was observed that although there is a lot of consciousness amongst local people regarding environmental damage caused by Jhum yet nearly half of the agri-population practised it as a means of subsistence, mostly for growing vegetables.

Table 4.24: Type of Agricultural tools used and Form of Agriculture

		Number of Households	Percentage to Total
Agricultural tools	Traditional Only	112	47.66
	Modern Only	0	0
	Both	112	47.66
	N.A.	11	4.68
	Total	235	100
Form of Agriculture	Traditional	65	27.66
	Modern	0	0
	Mixed	149	63.40
	Do not know	21	8.94
	Total	235	100

Source: Primary data

Analysis: Table 4.24 shows the type of agricultural tools used by households along with their form of agriculture. Most respondents (112+112=224) told that they either used traditional tools only or both traditional as well as modern agricultural tools. As far as form of agriculture is concerned, the preferred one is ‘Mixed’ -149 households (63.40%) followed by ‘Traditional’ – 65 households (27.66%). There were some respondents in the category ‘Do not know’ – 21 (8.84) who did not give any response. It is to be noted that mixed form of agriculture here indicates agricultural practices where both traditional as well modern methods and tools were used.

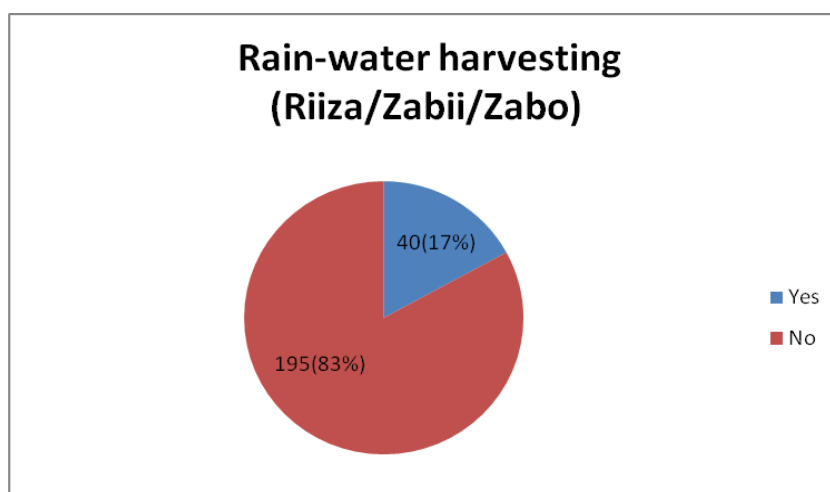


Figure 4.9 Practice of Traditional Rain-water Harvesting (Riiza/Zabii/Zabo)

Source: Primary data

Analysis: Fig. 4.9 indicates that majority of the respondent households (82.98%) did not practice rain-water harvesting. The remaining 17.02% responded positively to rain-water harvesting.

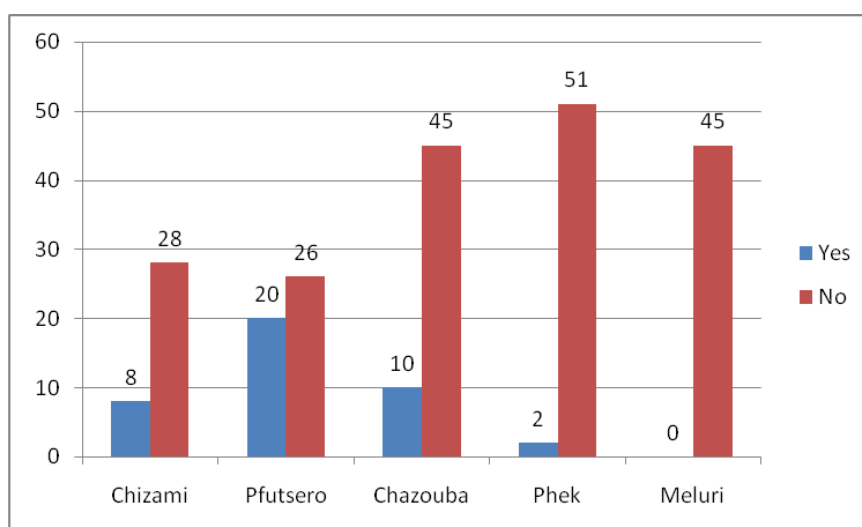


Figure 4.10 Sub-division wise data on Traditional Rain-water Harvesting (Riiza/Zabii/Zabo)

Source: Primary data

Analysis: Fig. 4.10 shows that among five subdivisions, Pfutsero 20 (43.48) had the highest number of households practising traditional rain-water harvesting followed by Chazouba 10 (18.18), Chizami 8 (28.57) and Phek 2 (3.92). In Meluri, there were no respondent households doing rain-water harvesting. Notably Kikruma, the village

known for Riiza i.e. traditional rain-water harvesting is situated in Pfutsero subdivision.

Table 4.25: Horticulture

		Number of Households	Percentage to Total
Practice of Horticulture	Yes	37	15.74
	No	198	84.26
	Total	235	100

Source: Primary data

Analysis: Table 4.25 shows that the percentage of respondent households practising horticulture was less with only 37 households (15.74) practising it; however it must be noted that horticulture here refers to cultivation of newly introduced plantations for example kiwi, cardamom etc. It was less common in comparison to traditional agricultural practices in terms of household number but was found to be fast catching up as a profitable venture amongst the natives.

Table 4.26: Animal rearing

		Number of Households	Percentage to Total	
Rearing of Animals and Purpose of Rearing	Yes	Self-consumption	30	12.77
		Local sale	0	0
		As pet	2	0.85
		All three of above	11	4.681
		Self-consumption and Local sale	170	72.34
	No	22	9.362	
Total		235	100	
Variety of animals reared	One	64	27.23	
	Two	129	54.89	
	More than two	20	8.51	
	Not applicable	22	9.36	
	Total	235	100	

Source: Primary data

Analysis: Table 4.26 shows that ‘Self-consumption and Local sale’ was the predominant purpose of rearing animals among respondent households – 170 (72.34%). Only ‘Self-consumption’ was the second biggest purpose of animal rearing among respondents. Notably, only two households were found to rear animals as pets. As regards variety of animals reared, two types were predominant among the households – 129 (54.89%), illustrated in the next table. One variety was second highest – 64 households (27.23%) while more than two variety accounted for 20 (8.51%) households. The remaining 22 (9.36%) households did not rear animals of any type. It is to be noted that animal rearing as a traditional practice was an integral part of quotidian life. In contemporary times, institutionalized mechanisms of state also give importance to animal husbandry projects, sometimes even at the cost of local concerns.

Table 4.27: Sub-division wise data on Animal rearing

Animals Reared	Chizami	Pfutsero	Chazouba	Phek	Meluri	Total
Chicken	4	16	15	14	5	54
Pig	0	0	0	3	3	6
Mithun	1	0	0	0	3	4
Chicken & Dog	4	0	6	2	1	13
Chicken & Pig	22	15	25	14	9	85
Chicken & Rabbit	2	2	2	3	13	22
Rabbit & Guinea Pig	1	0	0	0	0	1
Chicken & Mithun	0	0	0	0	3	3
Chicken & Cat	0	0	0	5	0	5
Chicken, Pig & Mithun	0	1	1	0	3	5
Chicken, Rabbit & Guinea Pig	2	1	5	5	0	13
Chicken, Dog, Cat, Rabbit & Pig	0	0	0	0	2	2
Not Applicable	0	11	1	7	3	22
Total	36	46	55	53	45	235

Source: Primary data

Analysis: Table 4.27 shows animals reared by respondent households (subdivision-wise). It is seen that the combination of ‘Chicken & Pig’ was the highest with a total

of 85, followed by ‘Chicken’ (54), ‘Chicken & Rabbit’ (22), ‘Chicken & Dog’ (13), ‘Chicken, Rabbit & Guinea Pig’ (13) and the others with less than 10. Among the subdivisions, Chizami had ‘Chicken & Pig’ as highest (22) followed by ‘Chicken’ (4) and others. Pfutsero subdivision has ‘Chicken’ (16) as highest followed by ‘Chicken & Pig’ (15) and others. Chazouba has ‘Chicken & Pig’ as highest (25) followed by ‘Chicken’ (15). Phek has both ‘Chicken’ and ‘Chicken & Pig’ as highest with 14 households for each category. Meluri has ‘Chicken & Rabbit’ as the highest (13) followed by ‘Chicken & Pig’ (9) and others. It is to be noted that the rearing of mithuns was found to be highest in Meluri.

Table 4.28: Rural/Urban divide on Education and Animal Rearing

Educational Qualification	Animal Rearing undertaken		Animal Rearing Not undertaken		Total
	Rural Area	Urban Area	Rural Area	Urban Area	
Illiterate	27	4	3	1	35
School Drop Out	95	19	4	3	121
Below Matriculate	3	0	0	0	3
Matriculate	17	4	1	4	26
Intermediate	11	5	0	0	16
Graduate	18	6	1	4	29
Post-Graduate	1	2	0	0	3
M.Phil/Doctorate	0	0	0	0	0
Professional/Technical	0	1	1	0	2
Others	0	0	0	0	0
Total	172	41	10	12	235

Source: Primary data

Analysis: Table 4.28 shows that among respondent households undertaking animal rearing, the majority of ‘Illiterate’ (27 against 4), ‘School Drop Out’ (95/19), ‘Below Matriculate’ (3/0), ‘Matriculate’ (17/4), ‘Intermediate’ (11/5) and ‘Graduate’ (18/6) are in rural area. In case of ‘Post-Graduate’ (1/2), ‘Professional/Technical’ (0/1), the households with ‘Animal Rearing’ are less in rural area as compared to urban area.

Among respondent households with ‘Animal Rearing Not Undertaken’, the rural-urban divide is mixed as can be seen from table 28. In terms of total households with ‘Animal Rearing Not Undertaken’, urban area (12) scores over rural area (10).

Table 4.29: Rural/Urban divide on Education and Main Agricultural Practice

Education	Pani-kheti	Dry Terrace	Jhum	Horti-culture	N.A.	Total
	Rural/Urban	Rural/Urban	Rural/Urban	Rural/Urban	Rural/Urban	
Illiterate	18/4	7/0	5/1	0/0	0/0	35
School Drop Out	84/18	4/1	10/0	8/0	1/1	121
Below Matriculate	3/0	0/0	0/0	0/0	0/0	3
Matriculate	16/6	1/1	0/0	4/0	1/1	26
Intermediate	9/5	0/0	1/0	1/2	1/0	16
Graduate	13/8	2/0	2/0	0/0	2/2	29
Post-Graduate	1/0	0/0	0/0	0/0	0/2	3
Professional/Technical	1/0	0/0	0/0	0/0	0/1	2
Others	0/0	0/0	0/0	0/0	0/0	0
Total	145/41	14/2	18/1	13/2	5/7	235

Source: Primary data

Analysis: Table 4.29 shows that among 35 ‘illiterate’ respondents, the majority (18) were engaged in ‘Pani-kheti’ (wet rice terrace cultivation). Again, among a total of 121 ‘School Drop Out’, the majority (84) were engaged in ‘Pani-kheti’. The same is the case with ‘Below Matriculate’ (3 out of 3), ‘Matriculate’ (16/26), ‘Intermediate’ (9/16) and ‘Graduate’ (13/29). Only in case of ‘Post-Graduate’ (1/3) and ‘Professional/Technical’ (1/2) ‘Pani-kheti’ cannot be said to be the predominant agricultural practice. In case of Jhum, it can be seen that majority i.e., 10 respondents were school dropout, 5 were illiterates and remaining 3 were from intermediate and graduate categories. It is to be noted that the two graduates engaged in Jhum considered it to be a rich traditional practice, environmentally sound when modified to suit contemporary age. Another major trend that emerges from the data was that majority respondents engaged in agriculture were school drop-outs, followed by illiterates. As discovered during ethnographic fieldwork presented in chapter five not many people from younger generations were interested in agriculture as main

occupation. Infact even parents wanted their children to finish their studies outside and preferably do a job. This speaks of a broader trend reflecting migration, modern lifestyle and infrastructural development issues.

Table 4.30: Rural/Urban divides on Education and Traditional Rain Water-Harvesting

Educational Qualification	Riiza/Zabii/Zabo is undertaken		Riiza/Zabii/Zabo is not undertaken		Total
	Rural Area	Urban Area	Rural Area	Urban Area	
Illiterate	3	0	27	5	35
School Drop Out	21	0	78	22	121
Below Matriculate	0	0	3	0	3
Matriculate	5	2	13	6	26
Intermediate	2	2	9	3	16
Graduate	4	0	15	10	29
Post-Graduate	0	0	1	2	3
M.Phil/Doctorate	0	0	0	0	0
Professional/Technical	1	0	0	1	2
Others	0	0	0	0	0
Total	36	4	146	49	235

Source: Primary data

Analysis: Table 4.30 shows that there was no significant co-relation between educational category of a respondent and practice of traditional rain water harvesting. Majority respondents practising rain water harvesting – 21 were from school dropout category. The table shows that majority of those practising rain-water harvesting were based in rural area (36 out of 40) as against urban (4).

4.6 Social Change and Development: Religion, State and Economy

The fourth section consists of **10** tables and figures indicating factors of positive change and development, changing nature of festivals, challenges to development, and occupational pattern of respondents as per their educational qualification. In view of respondents of this study, two most prominent institutions that propelled social

change and development in Phek were *religion* and *state* and two most prominent areas in which social change and development witnessed visibility were *gender* and *economy*. Religion in the form of Christianity and State through its various mechanisms and schemes propelled education, health, hygiene and competitive work culture amongst natives.

Table 4.31: Subdivision wise data on most important factor for positive change and development

Most Important Factor for Positive Change and Development	Chizami	Pfutsero	Chazouba	Phek	Meluri	Total
Education	11	8	12	1	9	41
Transport & Communication	2	0	2	1	1	6
Agriculture	0	6	1	1	1	9
Christianity	23	30	40	49	34	176
State Sponsored Schemes	0	2	0	1	0	3
Total	36	46	55	53	45	235

Source: Primary data

Analysis: Table 4.31 indicates that absolute majority of respondent households (176) considered ‘Christianity’ as the most important factor for positive change and development. Subdivision-wise too this fact is reflected with Chizami (23 out of 36), Pfutsero (30 out of 46), Chazouba (40 out of 55), Phek (49 out of 53) and Meluri (34 out of 45) showing ‘Christianity’ as the most important factor. The second most important factor was ‘Education’ (41 respondents). Third on the list was ‘Agriculture’ (9), fourth ‘Transport & Communication’ (6) and fifth ‘State Sponsored Schemes’ (3).

Table 4.32: Festivals (Total number of festivals celebrated including Agricultural festival celebrated and non-Agricultural festival)

		Number of Households	Percentage to Total
Total number of festivals celebrated	1 to 5	235	100
	More than 5	0	0
	Total	235	100
Agricultural Festival Celebrated	Yes	235	100
	No	0	0
	Total	235	100
Non-agricultural Festival Celebrated	Yes	234	99.57
	No	1	0.43
	Total	235	100

Source: Primary data

Analysis: Table 4.32 shows that all respondent households (235) celebrated minimum one to five festivals. However, none celebrated more than 5 festivals. It also indicates all the respondents celebrated 'Agricultural Festival'. In case of 'Non-agricultural Festival' all except one household celebrated it. It is to be noted that non-agricultural festival here betokens Christmas and the one respondent household not celebrating it belonged to non-Christian household in non-Christian Khel, Meluri.

Table 4.33: Sub-division wise biggest Festival

Festival	Chizami	Pfutsero	Chazouba	Phek	Meluri	Total	Percentage to Total
Christmas	34	44	53	52	30	213	90.64
Others	2	2	2	1	15	22	9.36
Total	36	46	55	53	45	235	100

Source: Primary data

Analysis: Table 4.33 shows that Christmas was the biggest festival for all subdivisions. Meluri was the only subdivision where festival other than Christmas was high (15) in comparison to Chizami (2), Pfutsero (2), Chazouba (2) and Phek (1). Overall, 90.64% of total (235) respondent households celebrated Christmas as the biggest festival. Others here include traditional agricultural festivals such as Sukrenyi, Yemshi etc. mentioned in chapter five.

Table 4.34: Educational profile and Primary Occupation

	Illiterate	School Drop Out	Below Matriculate	Matriculate	Intermediate	Graduate	Post-Graduate	M.Phil/Doctorate	Professional/Technical	Others	Total
Unemployed	0	1	0	0	1	3	0	0	0	0	5
House-Wife	0	1	0	0	0	0	0	0	0	0	1
Student	0	0	3	0	1	4	0	0	0	0	8
Farmer	27	81	0	9	2	6	0	0	0	0	125
Government job*	1	10	0	5	5	4	2	0	2	0	29
Private Job	0	4	0	0	3	3	1	0	0	0	11
Self-Employed	3	12	0	6	1	5	0	0	0	0	27
Others	4	12	0	6	3	4	0	0	0	0	29
Daily Wage Labourer	0	0	0	0	0	0	0	0	0	0	0
N.A.*	0	0	0	0	0	0	0	0	0	0	0
Total	35	121	3	26	16	29	3	0	2	0	235

Source: Primary data

Analysis: Table 4.34 shows that out of 235 respondents, the majority (121) were school drop outs, 35 illiterate, 29 graduates, 26 matriculates and only 16 were intermediate passed. The primary occupation data shows that 125 out 235 respondents were farmers, 29 were in government service or retired, 29 were in other categories of employment and 27 were self-employed. There appears to be a correlation between the high number of school drop outs and farming (as primary occupation) as 81 of them happened to be both school drop outs and farmers. Interestingly, there does not appear to be any co-relation between government service and higher level of education. It is seen that only 4 out of 29 graduates were in government service. On the other hand, 10 school drop outs were in government service or were retired government employees. It is also seen that out of 27 self-employed, 12 of them were school drop outs. Interestingly, only one out of 121 school drop outs was unemployed which points to the fact that all school drop outs managed in terms of employment. On the other hand, 3 out of 29 graduates were unemployed. We can conclude that there are not sufficient job opportunities for graduates and, on the contrary, school drop-outs and matriculates were better absorbed in farming, self-employment and lower level government services such as peons, drivers and cooks under Grade IV.

Table 4.35: Education and most important factor for positive change and development

Educational Qualification	Most Important Factor for Positive Change and Development					Total
	Education	Transport and Communication	Agriculture	Christianity	State Sponsored Development Activities	
Illiterate	6	0	2	26	1	35
School Drop Out	22	4	4	90	1	121
Below Matriculate	1	0	0	2	0	3
Matriculate	2	2	2	19	1	26
Intermediate	2	0	0	14	0	16
Graduate	7	0	1	21	0	29
Post-Graduate	0	0	0	3	0	3
M.Phil/Doctorate	0	0	0	0	0	0
Professional/ Technical	1	0	0	1	0	2
Others	0	0	0	0	0	0
Total	41	6	9	176	3	235

Source: Primary data

Analysis: Table 4.35 shows that among 35 ‘Illiterate’ respondents, majority (26) said ‘Christianity’ was the most important factor for positive change and development while 6 of them said ‘Education’, 2 of them ‘Agriculture’ and the remaining 1 ‘State Sponsored Development Activities’. Among 121 ‘School Drop Out’ respondents, 22 said ‘Education’ was the most important factor for positive change and development while 90 said ‘Christianity’. Even among the various categories of educated respondents, the majority (60) said ‘Christianity’ was the most important factor for positive change.

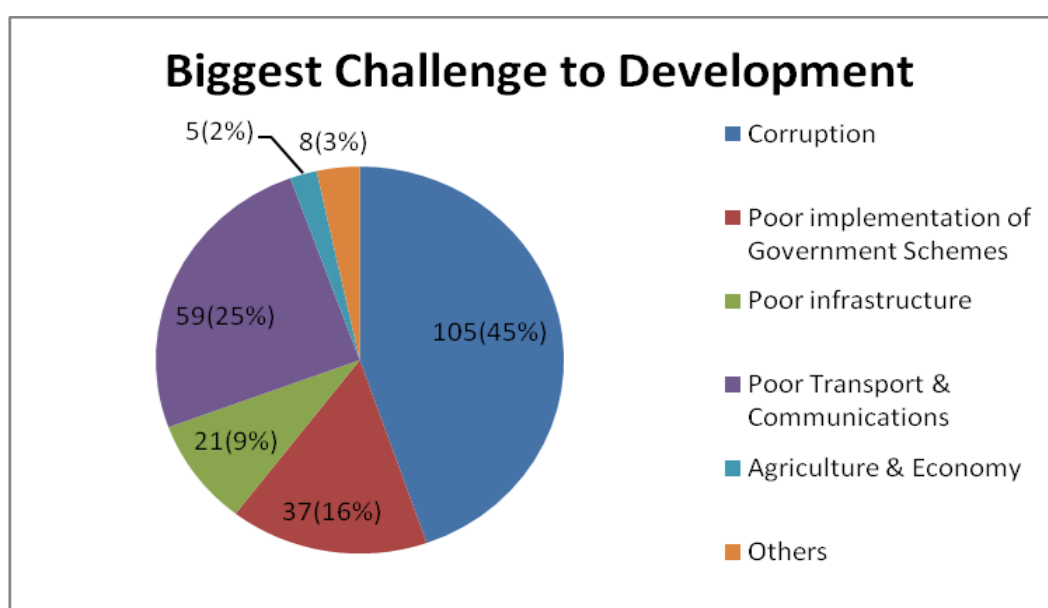


Figure 4.11 Biggest Challenge to Development

Source: Primary data

Analysis: Fig. 4.11 shows that majority respondents – 105 (44.68%) considered ‘Corruption’ as the biggest challenge to development. The second biggest challenge was ‘Poor Transport & Communications’ – 59 (25.11%) while the third was ‘Poor implementation of Government Schemes’ – 37 (15.74%). For 21 (8.94%) respondents ‘Poor infrastructure’ was the biggest challenge to development. For a small section of people 5 respondents (2.13), ‘Agriculture and Economy’ sector posed biggest challenge to development and for 8 respondents (3.40), the response was ‘Others’. The category ‘Others’ here include respondents who did not give any definite responses.

The results of a DHDR Phek-2009 survey indicated the concern of local public for more road linkages in the district, particularly in the rural areas. The survey was on whether there was ‘Need for More Roads’ and 99.7% of the rural respondents said yes. 69.7% of urban respondents also affirmed the need for more roads. It is therefore not surprising that in Fig. 11, 25.11% percentage of respondents considered ‘Poor Transport & Communications’ as the biggest challenge to development.

Table 4.36: Subdivision wise Biggest Challenge to Development

Biggest Challenge to Development	Chizami	Pfutsero	Chazouba	Phek	Meluri	Total
Corruption	16	20	26	22	21	105
Poor implementation of Government Schemes	7	9	9	11	1	37
Poor infrastructure	2	2	2	13	2	21
Poor Transport & Communications	5	13	17	4	20	59
Agriculture & Economy	1	1	0	2	1	5
Others	5	1	1	1	0	8
Total	36	46	55	53	45	235

Source: Primary data

Analysis: Table 4.36 shows that according to the respondents, ‘Corruption’ was the biggest challenge to development in all the subdivisions. In Meluri ‘Poor Transport & Communications’ (20) was considered almost equal to ‘Corruption’ (21) in terms of challenge to development.

Table 4.37: Awareness of State Sponsored Schemes and Gender

Whether heard of state sponsored schemes?	Male Responses	Female Responses	Total	Percentage to Total
Yes	155	25	180	76.60
No	29	26	55	23.40
Total	184	51	235	100

Source: Primary data

Analysis: Table 4.37 shows gender-divide in awareness of state-sponsored schemes. Out of 184 male respondents, 155 (84.24%) were aware of state-sponsored schemes and out of 51 female respondents, 25 (49.02) were aware of it which means that intra gender percentage of respondents who were aware of such schemes was higher in case of male.

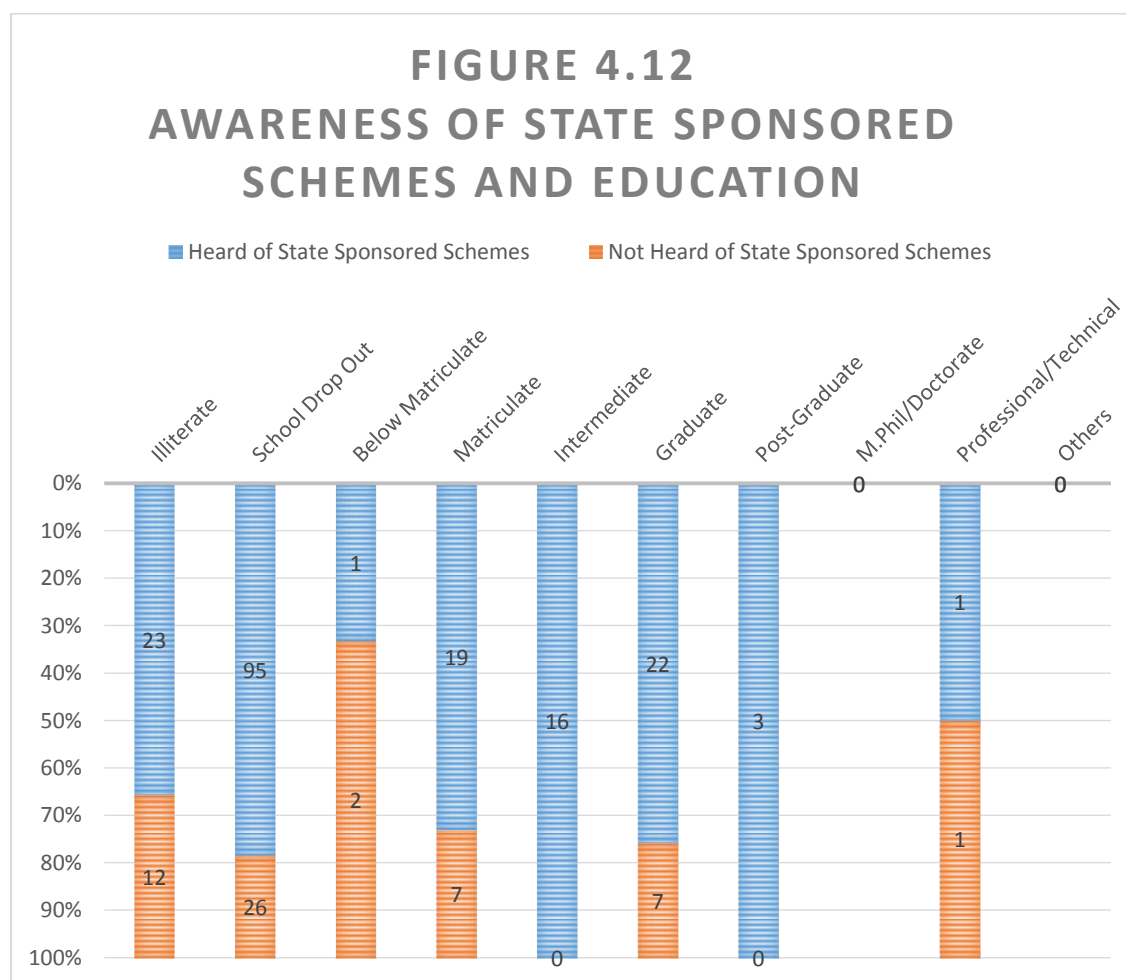


Fig. 4.12 Awareness of State Sponsored Schemes and Education

Source: Primary data

Analysis: Fig. 4.12 shows that out of 235 respondents, 180 of them had heard of state-sponsored schemes and 55 of them had not heard of it.

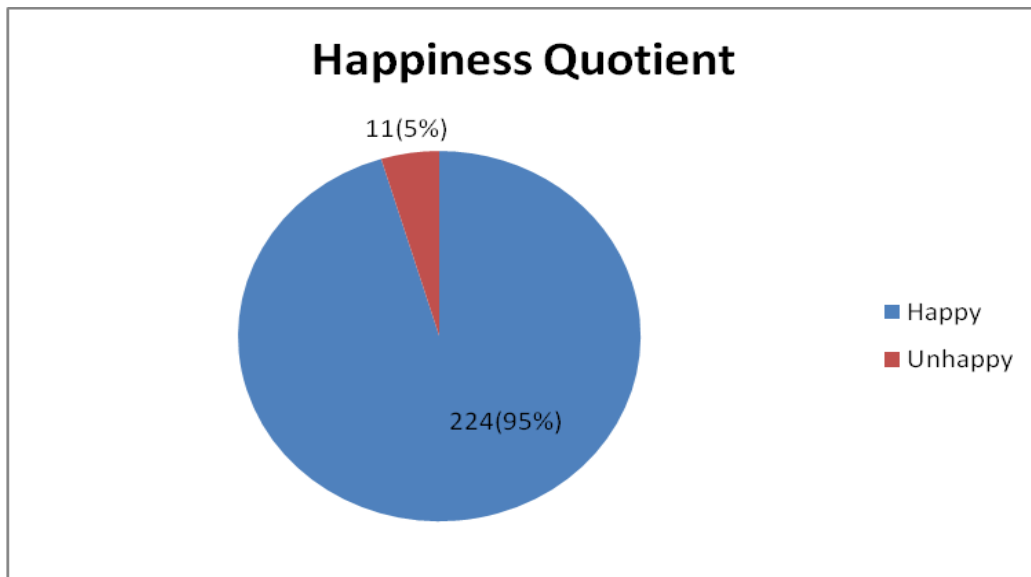


Fig. 4.13 Happiness quotient amongst Respondents with regard to Social Change and Development

Source: Primary data

Analysis: Fig. 4.13 illustrates that among 235 respondents, 224 (95%) were happy with over-all social changes and development witnessed by their community over the year whereas for the rest of the respondents that is 11 (5%), those changes and transformations in the community did not carry a positive meaning and they were not happy about the gradual loss of traditional fabric of the society.

4.7 Sustainable Development and indigenous knowledge

The final section that is, the fifth section consists of 3 tables and figures based on the concept of sustainable development and indigenous knowledge as it was crucial to register the understanding of the inter-relation amongst natives.

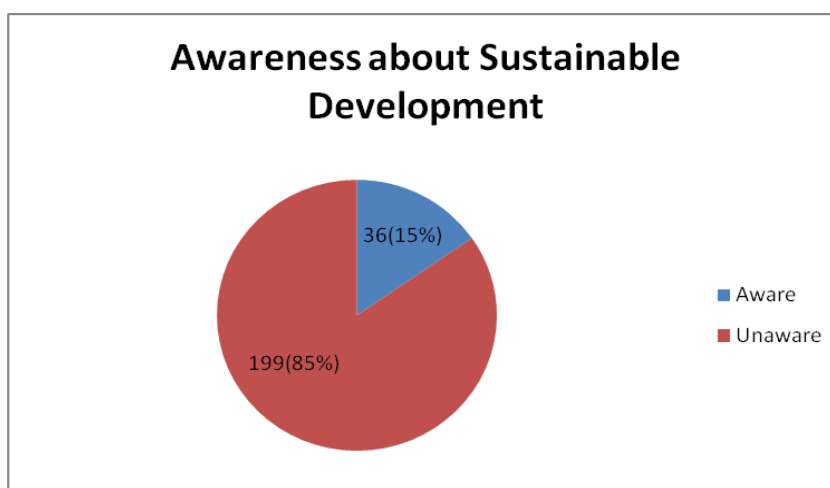


Fig. 4.14 Awareness of concept of Sustainable Development in Respondents

Source: Primary data

Analysis: Fig. 4.14 shows that majority – 199 respondents (84.68%) did not hear about the term sustainable development. Only 36 respondents (15.32%) said that they had heard of it.

Table 4.38: Concept of Sustainable Development and Education

Educational Qualification	What is Sustainable Development?			Total
	Environment Friendly Development	Abandonment of Jhum Cultivation	Unheard	
Illiterate	0	0	35	35
School Drop Out	1	1	119	121
Below Matriculate	0	0	3	3
Matriculate	0	3	23	26
Intermediate	1	0	15	16
Graduate	21	4	4	29
Post- Graduate	3	0	0	3
M.Phil/Doctorate	0	0	0	0
Professional/ Technical	2	0	0	2
Others	0	0	0	0

Source: Primary data

Analysis: As per table 4.38, awareness of the concept of sustainable development in Phek was largely related to education. Out of 36 respondents who had directly heard of it, all were educated ('Graduate'-25, 'Matriculate'-3, 'Post-Graduate'-3, 'Professional/Technical'-2, 'School Drop Out'-2 and 'Intermediate'-1). The table also shows that out of 235 respondents, 199 of them had no definite concept of sustainable development, 28 of them considered sustainable development as 'environment friendly development' and 8 of them viewed it as 'abandonment of jhum cultivation'.

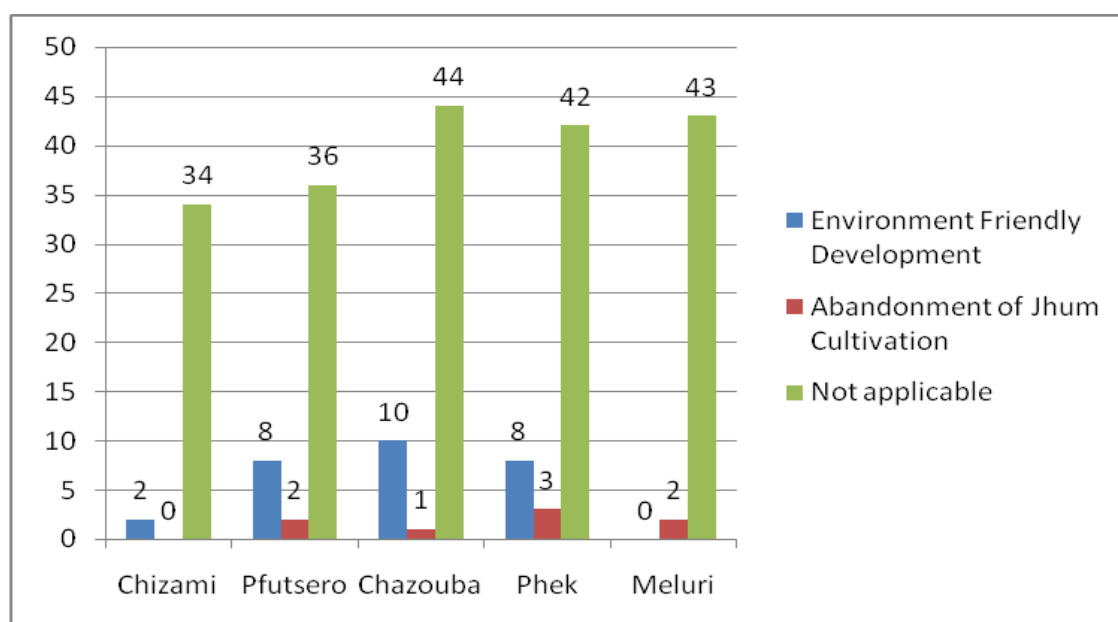


Fig. 4.15 Sub-division wise view of Respondents on concept of Sustainable Development

Source: Primary data

Analysis: Fig. 4.15 shows subdivision wise responses to the concept of sustainable development which indicates that in all five subdivisions, majority respondents viewed sustainable development as environment friendly development.

4.8 Conclusion

Indigenous tribal communities are generally characterised to be simple and egalitarian in nature. However primary data from field just discussed through a total of 38 tables and 15 figures provide images of socio-economic class difference amongst natives of Phek district at various levels of operation. Special reference may be made to tables and figures shown under *lifestyle changes, Health and Hygiene: basic amenities and assets*, as while collecting data related to these queries, some major intra-community

class differences were observed. For instance, in Table 15, it can be seen that 12 households have personal tap water connections compared to rest of the respondent households that have access to community water supply only. It was observed in field that all those 12 households with personal tap water connection were either pukka or semi-pukka houses, comparatively well off families with members engaged in diverse professions, mostly educated and using greater variation of gadgets, appliances and other amenities. Again, in Fig. 7, it can be seen that 94 respondents had liquefied petroleum gas (LPG) connection and used gas cylinder against 141 respondents who did not have LPG connection. Let alone the ones who did not have connection, even for those who had gas connection, on one hand some respondents remarked that they used it when they were lazy to do slow cooking in firewood whereas on the other hand, there were respondents who found it cost-ineffective and could not afford to buy it. These differences in class and status extended to all other aspects of life including pattern of housing, education, shopping and medical healthcare. Similarly stark differences were observed in field in relation to type of agricultural practices followed. One major trend observed was abandonment of traditional jhum cultivation amongst comparatively well-to-do families. As a whole, though economy was largely at the level of subsistence agriculture but in villages located near urban areas or in towns— (a) Presence of a greater mix in occupational pattern and (b) Spread of commercial agricultural activities even if at a slow pace, were observed.

CHAPTER 5

CHAKHESANGS AND POCHURYS-THE NATIVES OF PHEK DISTRICT: AGRICULTURAL PRACTICES AND BEYOND

“The outside world enters into the life of the villager in a multitude of ways” (Beteille, 2012).

The present chapter is designed in the form of an ethnographic narrative occasionally supplemented by statistical data from survey research. Though it is clad in researcher’s language however in the spirit of emic approach, perspectives of respondents have been given primacy. First-hand account has been included in the words of respondents as and where possible. The thesis was sub-titled *A Study of Agricultural Practices in Phek District of Nagaland* but it should not be misleading; the initial attention was certainly caught by *Zabo* and related agricultural practices of Phek however broader aim was to find out whether indigenous knowledge based practices such as *Zabo* can provide non-arbitrary symbols of (sustainable) development. Hence the impetus in field was on studying multi-dimensionality of culture and lifestyle amongst natives of Phek; how were their agricultural practices (a part of economy) embedded in a larger matrix of culture, religion and state. Hence, agricultural practices were not studied in isolation. In harmony with broad theme, the research engaged with indigenous practices revolving around quotidian life of concerned communities; invested with social histories and ancestral traditional values soaked in modern elements criss-crossing at various junctures.

Perspectives on tradition, modernity and development have been presented as essayed by given communities in order to understand local encounters with forces of globalization and change. Total number of respondents interviewed for ethnographic data collection was 20 that is, five from each of the four age-based groups as already mentioned in chapter three. Apart from interviews; observation method was sharply followed throughout the fieldwork.

For organizational convenience and clarity, the chapter has been laid down in form of broad inter-related thematic content domains supplemented by anecdotes,

quotations and testimonials from respondents with occasional diagrammatical representations in the form of tables and pie charts. Interviews of bureaucrats, scientists, other government officials, politicians and NGO workers have been incorporated as and where relevant.

Natives of Phek district appeared to have negotiated between tradition and modernity, practicing what they called a 'mixed form' on a purely instrumental basis. As shown in Fig. 13, among 235 respondents of household survey, majority i.e. 224 admitted to being happy about modern ways of life against 11 who expressed discontent over it. Similarly, among 20 respondents for ethnographic sample, 16 of them stated that they were happy about the changes, vouched for a mixed way of life that denoted ease and comfort in terms of *executing traditional practices with the aid of modern amenities* while remaining 4 still preferred earlier *non-modern ways of life*. Thus, in both sets of data, majority of the respondents admitted to being happy about the changes brought by modern ways of life.

Though the research is broadly based on relationship between sustainable development and indigenous knowledge, the idea as already stated in first chapter was to break away from usually stated position on indigenous knowledge as technical additions to be selectively incorporated in so-called modern science. Aforementioned relationship is perceived through the lens of symbolism wherein indigenous knowledge is represented by popular living ancestral practices in Phek district – A study of their agricultural practices and a few non-agricultural practices (discovered during fieldwork) with reference to their total way of life (culture) including religion and economy.

5.1 Area of ethnographic study

Area of ethnographic study comprised four administrative villages from three subdivisions. Selection of villages for ethnography was done by purposive sampling; nonetheless, insights were drawn from across Nagaland, including Kohima and all other places visited during fieldwork. Two Chakhesang villages namely Kikruma in Pfutsero subdivision, Poruba in Chizami sub-division and two Pochury villages – Hiitsu and non-Christain Khel, both in Meluri sub-division formed the core of thick

description¹⁸ for present study. Natives of all these villages are carriers and enactors of a rich indigenous culture caught in a flux between tradition and modernity.

5.1.1 Kikruma – It is situated in Pfutsero sub-division of Phek District in Nagaland. Besides being the biggest village of the district, it is well known as the rain water harvesting village. In the words of a respondent, an ex-village council chairman (Kikruma), “We are popularly known as the water harvesting pond village”. The village is divided into 8 wings as per polling station known by the names of North Wing 1, 2, 3, 4 and South Wing 1, 2, 3, 4. Total population of the village as per 2016 electoral roll is 5372. Out of this, male population is 2603 and female population is 2769. To the North lies the river Kiiriira and to the South lies the river Bavurii. The village is inhabited by Chakhesang community and is divided into eight colonies or khels with six clans which are as follows- Kezo, Puro, Tiinyi, Vero, Thira and Yhobii. There is one gaon burah for each clan and the senior most among them is the head gaon burah. All colonies here are Christian khels. Historically, Kikruma was known to be the land of head hunters and warriors who practiced the principle ‘Might is Right’; women were mainly confined to domestic chores. According to respondents, even now to some extent women are supposed to perform domestic chores all by themselves; education also came in late for women, however, there is comparatively lesser discrimination now. Geographically, Kikruma is prone to water-scarcity problem which is why ancestors of this village are known to have devised rain-water harvesting for integrated agriculture so that they could utilize rain water for maximum productivity. The village has a few sources of spring water; there is no major river nearby.

5.1.2 Poruba is a moderate size village with total electorate of 1383 people as per electoral roll, 2016. Even here people practise rain water harvesting for integrated agriculture albeit in a localised form and is different from that of Kikruma. The village is divided into two wings- A and B.

5.1.3 Hiitsu is a very small village located in Meluri subdivision with total electorate

¹⁸ Clifford Geertz used the concept thick description in *The Interpretation of Cultures* (1973) to mean explanation of particular behavior or phenomenon in its entire context such that the behavior becomes meaningful to an outsider.

of 539 people. Farming is the most widely practiced occupation however the village is famous for its indigenous practice of traditional salt-making. Other two things observed in this village were apiculture and mithun rearing.

5.2.4 Non-Christian Khel in Meluri is one of the few remaining villages in Phek district where non-Christian minority still resides. It is one of the smallest villages in the district with a total electorate of 266 people as per electoral list of 2016. It is situated not very far away from Meluri town. It was observed that the non-Christians had become a minority in these villages as most of the natives had converted into Christians. As far as occupational pattern was concerned, most of the people here too practised agricultural activities for a living however differences were observed in terms of their socio-cultural habits including rites, rituals, beliefs and practices, festivals and so on. For instance- this was the first village where as a guest, I was served traditional rice-beer called.

5.2 Before we move ahead with detailed ethnographic account, let us quickly go through local village administration and traditional land holding system in Phek –

5.2.1 Local administrative system of Phek district

The Chakhesangs and Pochurys of Phek district, like other Naga tribes, govern themselves based on traditional and customary laws rooted in the village system. A village normally comprises of a number of clans and representatives of each clan form a Village Council which looks after all affairs of the village. Traditionally, the village priest generally chairs the Village Council meetings (Singh & Theluo, 2016). Now-a-days the Village Council Chairman plays that role.

The traditional customary laws of the Nagas have been safeguarded (L.R.I, 2011) by Article 371(A) of the Constitution of India wherein it is given that no Act of Parliament will be applicable in Nagaland when it comes to (1) religious or social practices of the Nagas; (2) Naga customary laws and procedures; (3) Administration of civil and criminal justice involving decisions according to Naga customary laws; and (4) Ownership of transfer of land and its resources; except when the State

Legislature of Nagaland desires to make any Act of Parliament applicable in these matters.

The Village Council is the main organ of the traditional administrative system practiced by the Naga tribes including the Chakhesangs and Pochurys of Phek district. The system is rooted in age-old democratic practice of the tribes whereby village administration and disputes arising in the community are resolved by the Village Council. The sanctity of the Village Councils is such that judgements passed by them are rarely, if ever, defied by the public.

The village councils were institutionalized (Shimray, 2014) and later adapted to fit the Panchayati Raj system. Decentralization of governance through the traditional Village Councils and newly created Village Development Boards (VDBs) was given effect by the Nagaland Village and Area Council Act, 1978. This legislation by the Nagaland government also institutionalized specific responsibilities for the traditional village councils and VDBs. While the Village Councils look after administrative and judicial matters, the VDBs deal with financial allocation and expenditure related to community development.

5.2.2 Land ownership system of the Chakhesangs and Pochurys

Land laws in Nagaland are derived from tradition and have the sanctity of social approval and adherence. It is the same with the Chakhesangs and Pochurys of Phek district who inherit land from their ancestors and follow traditional rules governing ownership, possession and transfer of land. Just as in other aspects of social life, the Village Council plays a crucial role in the matter of land disputes as well.

There are different types of land (L.R.I, 2011) among given indigenous communities, namely, private land, village community land, clan land, reserved forest and government-acquired land. Private lands are used by individuals and families for cultivation, as dwelling place or for any other purpose. Land is well-demarcated by stones, trees, roads or streams but people do not have land records and they do not pay land revenue. The use of 'clan land' and 'village community land' is decided collectively by the respective clan and village council.

Land is generally inherited from forefathers and passes on from one generation to another. Despite the lack of land records, a person never loses the ownership of his land. This is ensured by tradition and strong customary laws which are respected and followed by every member in Naga society. Disputes over land when they arise are dealt with and disposed of by the Village Council. Transfer of private land takes place by way of gift, sale, mortgage, will and inheritance.

5.3 Ethnographic account of Development as Change and Transformation in Structural Components of Chakhesang and Pochury lives (Structural components here betoken culture, religion, economy and state)

Throughout fieldwork, subtle contestations were reflected at various levels of operation between man-made environment (culture) and nature. Right from basic needs - food, cloth and shelter to higher demands such as education, transport and communication, infrastructure-building etc., different aspects of socio-cultural and economic life witnessed major shifts over last few decades. Culture in all its forms was integrally linked with religion amongst the natives of Phek. Change in latter instigated significant changes in former.

After adoption of Christianity as their religion, Chakhesangs and Pochuries abandoned and in some cases modified traditional cultural practices especially those related to agriculture and hunting (i.e., economic activities). *Religion* as defined by Durkheim stands for “ a unified system of beliefs and practices related to sacred things, that is to say, things set apart and forbidden—beliefs and practices which unite in one single community called a Church, all those who adhere to them” (Dukheim, 1954, p.47). Chakhesangs and Pochurys like most Naga communities religiously adhered to the Church system. Christmas replaced traditional festivals as the biggest festival of the district (Please see Table 33). The only major festival celebrated as a remnant of ancestral times was a four-day intra-clan agricultural festival called Sukrenyi.

Thus, with spread of Christianity, nature and content of festive celebrations underwent massive change. Natives held unanimous view on non-utility components of tradition dying down, ensuring survival of relevant tradition that go in tandem with

contemporary age. This indicates a functionalist perspective towards remnants of traditional culture. Traditionally, their religious beliefs and practices comprised rigid taboos and restrictions; conversion to Christianity led to marked changes. Some traditional festivals were still celebrated for maintaining community ties while most others that were time-consuming and superstitious in nature became obsolete. This in a way reflects penetration of new values of time and rationalism supported by a foreign (Western) religion increasingly internalised by a non-Western society, in present case through religious ideas and principles. It is also in some ways reminder of Weber's work *The Protestant Ethic and the Spirit of Capitalism* (1905).

Over the years, Christianity established its stronghold in Nagaland not just as a dominant religion but also as a socio-cultural way of life, supposedly modern way of life constantly re-defining peoples' habitus¹⁹. It began to be valued for promoting rationality (rational thinking) hence considered by its advocates to be at par with modernity. This development was considered to be a result of consolidated efforts of Christian Missionaries and their active engagement with natives. Some respondents however argued against this development, for altering traditional fabric of community life, tampering with age-old beliefs and practices, ruining their traditional cultural ethos and rather promoting pseudo-Christianity. In the words of a senior scientist from KVK, "It is now more of a Christianised culture and not Naga culture...To adjust with modern lifestyle, people are damaging environment more than ever before...these are attitudinal changes as people need more money to cope up with modern life which results into greater exploitation of natural resources".

Something that emerged repeatedly during fieldwork was an overwhelming response adduced to the role of Christianity in fostering positive change and development. Respondents from survey as well as ethnographic study, emphasized on a sea-change experienced by the region with respect to development as an outcome of Christianity and its after-effects. They spoke about positive aspects of their new religion and that it not only adduced spiritual growth to their lives, but also introduced

¹⁹ The concept of habitus was popularized in Sociology by Bourdieu (1977) who used it to solve agency-structure problem such that habitus is shaped by structural positioning as much as it generates action i.e., when people act and display agency they simultaneously reflect and reproduce social structure.

education that in turn facilitated all round development of their community (Please see Table 31).

As per Table 31, highest number of respondents from survey sample replied positively about impact of Christianity in all five subdivisions. It is to be noted that same trend emerged from ethnographic observations wherein, people by and large co-related progress and development with Christianity. Thus, throughout field study, researcher encountered the influence of *Christianity in quotidian lives* as a fixed independent variable (dominant factor) –Almost every conversation with respondents began with their analogy of pre and post Christian ways of life. In all four villages, natives spoke about its role in drastically altering their community forms of life. It supposedly brought them face to face with modernity. Since popular narrative in field construed modernity as a by-product of Christianity, it became crucial to understand what exactly modernity implied in given context.

Every Sunday villagers attended local Church. On many such Sundays, researcher was opportune to meet people from different age-groups resulting in open-ended informal conversations outside Church premises. Those churches were usually located at hill-tops on plots of land acquired by donation. I asked them if there was something inherent in Christianity as a religion that worked in their stride or whether any other religion in their opinion could have as well brought development related changes to their community. It was not always a direct reply. Another way of affirming field observations was through questioning people on celebration of festivals, rites and rituals and by exploring material as well as non-material changes in post-Christianity era.

While Christians formed majority across the district, there were a few pockets comprising non-Christian population. Interestingly, one non-Christian Khel was selected in list of villages sampled for household survey based on mixed probability design. Thus, researcher got an opportunity to interact with non-converts from given indigenous community. Two non-Christian respondents shown in Figure 5 were non-converts from Pochury community in Meluri.

Fieldwork exposed dependent variables doggedly influenced by religion broadly in two ways- (1) Supposedly evolved way of life for converts from given community(s) and (2) As beliefs and practices (rites and rituals) connecting non-converts with their ancestors, hence regarded to be invaluable. Data on former was easily accessible, for latter researcher spent some time in Meluri sub-division. Accordingly, to be able to explore and analyse new found variables in field, a slight change to original schedule was made to accommodate ethnographic fieldwork along with survey research in non-Christian khel of Meluri.

5.3.1 Concept of Hygiene as a symbol of modernity and development

Historically, rise of Christianity precipitated use of various new denominations for *non-Christian Others* belonging to indigenous communities e.g.,-Pagan. An all-encompassing inclusive character of Christianity facilitated easy metamorphosis of so-called *Others* into Christians. This process of Christianising the others apparently involved fundamental shift in worldview. What began as basic lifestyle changes and reformation activities through education, extended to a more profound change in philosophical orientation of worldview. One significant concept that evolved in Nagaland with spread of Christianity is that of personal hygiene amongst natives. According to Oxford English Dictionary, *Hygiene* refers to a set of practices performed to keep oneself and one's surroundings clean so as to prevent illness and maintain good health. Though it may vary from culture to culture but the concept of hygiene can be perceived as a significant symbol of development (one that is arguably not wholly arbitrary). It is one of the pillars in researcher's proposed *HEAP model of development*.

The amount of emphasis state agency puts on hygiene and cleanliness as an integral part of development agenda gives a sense of bio-power in Foucauldian sense. What is even more striking being the connection drawn between religion, hygiene and development by members of indigenous communities in Phek. General query on health, hygiene and social well-being led to opening of new sites of information for research. Respondents from field referred to personal hygiene as a major breakthrough in lifestyle changes, highlighting changes in organisation of space and that of idea as a direct corollary of the same, particularly in relation to animal and

human shelter, toilet and water facilities, rites and rituals and so on. However, whereas on one hand modern ways of life fostered better health and hygiene, on the other hand, same modern ways of life in the view of some respondents also created a more vulnerable society. In the words of one of my respondents- “Earlier after returning from agricultural field, we never took bath; in that way, we are much cleaner now but I often wonder as to why we are also more prone to diseases than our ancestors; earlier people were healthier, lived longer, consumed only local produce whereas now we have markets replete with products from outside our village”. Thus, there was some confusion regarding an inverse relationship between health, hygiene and development in an increasingly market-centric world. Nonetheless a seemingly simple concept of hygiene shares a profound relation with notion of development. It does the job of differentiating developed (hygienic) *We* from under developed (unhygienic) *Others* effectively.

The present study did not exhaust sub-domain of Christianity and that of Hygiene. However, it tried to explore *pre and post-Christianity narratives* of natives based on observation and interview method; the study also introduced the notion of hygiene in development model, leaving scope for further study.

5.3.2 Economy, Indigenous Practices and State

Economy in Phek district by and large revolved around subsistence-level agriculture with majority population practicing traditional agricultural methods. Variation wherever found was carefully documented in chapter four and five. Agriculture as core economic practice was common to all villages. Almost every household barring a few exceptions, practiced traditional agriculture and even where one was engaged in some other profession, traditional agriculture was still pursued as secondary occupation or atleast as a hobby. However, we must analyse this critically as this is not necessarily planned preservation of traditional practices. In most cases people practiced cultivation for a living. It was only in select households that people practiced indigenous agricultural methods e.g. ‘*Riiza*’ as a matter of pride and choice. Notwithstanding the reason, (passion or compulsion), agriculture (farming) was undoubtedly the most widely practiced occupation in the region. Even though there was an upward trend in migration with younger generation moving out for education

yet majority of the population was still dependant on indigenous agriculture and allied activities (e.g., animal husbandry, horticulture and so on) for livelihood. A thirty-five year old male respondent from a remote village called Hiitsu in Meluri exclaimed “It will be better if more people in our village can do animal husbandry for economic growth.” Thus, while some strived for a more qualified life, looking for opportunities beyond agriculture, there were those who took pride in indigenous knowledge base, constantly working on its preservation and enrichment as they believed it would automatically better their lives. Such differences in perspectives were found across two variables – ‘age’ and ‘locality’. In a sea of uniformities, the only major variations in peoples’ responses and in their economic practices were found in terms of demography and geography.

Economic activity revolved around indigenous practices that can be broadly divided into two categories – (a) Agricultural and (b) Non-Agricultural.

5.3.2.1 Indigenous agricultural practices

Jhum cultivation including Alder based Jhum cultivation

Shifting or slash and burn cultivation, popularly known as Jhum in North-East India is an age-old agricultural practice prevalent in many regions of the country. As the very name suggests, it involves the cutting and burning of plants or trees in a forest to make space for a cultivation field. With innovations in science and technology, state sponsored development model ushered in modern agronomical practices that aimed at substituting traditional agricultural methods. Jhum particularly was discouraged from an environmental point of view. However, there has been some difference of opinion regarding jhum.

M. D. Chaturvedi, Inspector General of Forests, Government of India (1951) during his investigation on forests related problems in Assam, stated that jhum cultivation was erroneously held responsible for large scale erosion and that such a narrow view of jhum needed to be dispelled in favour of a modified approach. Limited understanding of jhum, may be accorded to an absence of detailed understanding of complex system of time and space that it entails (Das, 2006). Starting from jhum calendar to community-based land ownership system (that

supposedly maintains an egalitarian structure of the society), followed by collective work (that maintains social co-operation), mixed cropping and most importantly, self-sufficiency- all of these and many more factors embedded in traditional jhum were ignored conveniently with onslaught of modernity where market economy primarily focused on generating surplus value. Jhum is based on subsistence economy hence viewed as a symbol of underdevelopment since colonial days. It is largely based on an ideology of reciprocal exchange. Although based on subsistence principle, its production ethics involves a system of sharing and redistribution largely based on an ideology of reciprocal exchange through cultural and religious rituals, thus enabling survival of an entire community and not just individuals. At the same time, ecological relationships prevalent in indigenous communities do not always necessarily mean that people are naturally inclined to ecological conservation and sustainable resource management. Many indigenous communities today face severe challenges imposed by growing friction between global market-driven surplus model and local subsistence-driven basic-needs model. Another factor which is increasingly making its presence felt is growth of social stratification and polarization vis-à-vis social structure of indigenous communities (Duhaylungsod, 2001). This challenges basic notion of egalitarianism that these communities are known for. Moreover, jhum as an agricultural practice emerged and evolved ages back under completely different set of circumstances with different physiographical character of land and totally different population pattern.

In relation to Jhum, three broad types of mind sets, determined by an inter-play of class and space were observed amongst natives -

- 1). Local leaders including village council chairmen, bureaucrats, politicians and comparatively well-off farmers were of the opinion that jhum is detrimental to environment, needs to be eliminated whereas
- 2). Economically weaker sections asserted their need to prioritise (hand-to-mouth) existence claiming that they could not afford to think of environmental dangers caused by jhum if any.
- 3). Then there is a third level of opinion emerging from some section of natives who suggested that jhum is better compared to many other agricultural practices and that problem lied with the way in which it was practiced without inculcating necessary modifications to suit

changing face of the planet.

Earlier, population was significantly low compared to area of forest coverage; it made sense to practice jhum; today with significantly higher population and lower forest coverage, it is not advisable to practice jhum without modifications. When respondents were asked as to how they managed to shift their jhum fields and maintain gap-period at a time when land had become an increasingly scarce resource, most of them replied that it was possible as they possessed small or large pockets of land at scattered places. Jhum was thus integrally linked with *traditional land-holding system*, discussed earlier. It was not just a mode of agricultural practice; for many it was also a way of preserving traditional land holding system that is known to promote egalitarian values in their community along with added bonus of healthy living by healthy eating. Thus, most of the Jhum cultivators tried to maintain a gap period of at least ten to twelve years, depending on several factors. Dependent variables like type of soil, tree as well as independent variables like amount of land-holding generally determined the gap-period.

One of my respondents remarked: “Now-a-days people neglect Jhum as they do not realise benefits inherent in this mode of cultivation... If done systematically as prescribed in our ancient tradition, it yields good quality products with minimal environmental damages. Jhum does not cause deforestation as we re-plant oak trees and also maintain a gap of more than ten years”.

Terrace cultivation – Panikhethi (Wet terrace) and Dry terrace

As per qualitative as well as quantitative data, throughout the district, wet-rice terrace cultivation popularly known as *pani-kheti* was the most commonly practised traditional agricultural method. Jhum fields were scattered at distant places, generally far away from places of dwelling, hence for small families, it was difficult to manage jhum fields for paddy. Dry terrace cultivation on the other hand was not a popular practise in many places due to dearth of agri-link roads. Kutcha hilly roads made it an arduous task to carry modern machineries to agricultural fields. Hence in such cases, people primarily practised *pani-kheti* or wet-rice cultivation with a little area of jhum for cultivating vegetables.

Terrace cultivation refers to the farming method of cultivating crops on sides of hills by planting on graduated slopy terraces. In spite of being labour-intensive, it is favourable as it increases arable land area and also helps in reducing soil erosion and loss of water. Though people continue to practise traditional agricultural methods but they also embrace so called modern intervention by state supposedly for the better. However due to financial and infrastructural constraints including bad transport and communication (mountainous terrain), they were left with limited capital in terms of modern technology.

For the Chakhesangs of Phek district, settled or terrace cultivation is the preferred method of agriculture. Unlike other Naga tribes, the Chakhesangs do not give the same importance to jhum cultivation (L.R.I, 2011) even though many of them practice it.

Integrated farming practices namely, Riiza, Zabii, Zabo

Prior to fieldwork in Kikruma, rain-water harvesting in Phek district was known to the researcher by the name *Zabo*, as per secondary sources. It was during fieldwork that researcher learnt about the difference between *Zabo* and *Riiza*. What outsiders popularly call *Zabo* is actually a variant of *Riiza*. Some villages, outside Kikruma, replicated *Riiza*. Even some officials from government institutions like Krishi Vigyan Kendra who were interviewed for present study referred to rain-water harvesting in Phek as *Zabo*. Villagers in Kikruma expressed their disappointment over it. They wanted their age-old practice of rain water harvesting to be known as *Riiza* and not *Zabo*. Then there is *Zabii*, another local variant of rain water based integrated farming.

What is Riiza?

Riiza is an ancestral water harvesting system in which natives dig up ponds to store rain-water. Stored water is systematically diverted to agricultural fields through proper channel traditionally with the help of bamboo pipes and now-a-days also with modern plastic pipelines. According to respondents of Kikruma, traditional technologies were devised in sync with natural environment and ecology by their forefathers who had a wide knowledge base. Benefit of years of practice and gathered

knowledge behind such practice cannot be wasted. Riiza as an intensive integrated farming method is practised religiously in Kikruma. Due to major irrigation issues and absence of any major river nearby, it is practiced in a systematic and organized way since ages; in summers especially during monsoons Riiza is more about rain-water harvesting and in other times of the year e.g., during dry winters, it acts as a reservoir especially so in case of those Riizas that have own spring water source. It was observed that a combination of following bottlenecks made Riiza a less common practice in other areas of Phek district- (a) Cost factor, (b) Blockage of road openings to field areas by land owners and (c) General availability of water supply and (d) Lack of awareness regarding long-term benefits of rain-water harvesting.

Thus, Riiza is an environment-friendly, amalgamated system of water and soil conservation, irrigation, cultivation, animal husbandry and community participation. This is an indigenous innovation that is both scientific and sustainable. It has four main elements: forest land, water harvesting, cattle-shed and agricultural land (Maibam, 2018). The main purpose of Riiza is to irrigate the paddy field when there is shortage of water. But the process is such that water harvesting, irrigation, soil conservation and animal husbandry are synergized. Besides irrigation, the harvested water in Riiza is also used for rearing fish and for consumption of cattle and other domesticated animals.

What is Zabii?

Zabii is an integrated farming variant of Riiza which is specially practiced to rear specific type of fish e.g., Fiikha – it stays protected in small, closed and permanent water body, generally sourced by stream water. In dry seasons, when there is acute scarcity of water, mother fish is bred safely in Zabii. Some of the villagers, including neighbouring villages practise another method of rearing fish call Dziitsii: it is a water-locked open field in contrast with closed confined space i.e., Zabii. These are basically paddy cum pisciculture sourced by stream water, supported by channels dug out for rain water. Interestingly, in tandem with existing literature, even scientists and officials at Krishi Vigyan Kendra (KVK) referred to Kikruma's Riiza as Zabo. According to scientists at KVK, they did not introduce any major modification in Zabo system except for including certain new crops in it.

A Fifty-eight year old retired headmaster, also a cultivator, known to have the best Riiza in entire village was very happy and enthusiastic to take me around his Riiza field. He used modern- day pumping machines to connect water up and down upland areas.

Villagers adopted different measures to protect their Riiza/Zabii. Pioneered by agricultural department, comparatively well-off villagers started using plastic sheets in their Riiza pond. Some even planted different variety of trees around it as due to dense shade, water (in Riiza) did not evaporate easily. Generally, Riiza ponds or tanks were seen to be constructed in a sloppy fashion for maximum water storage or retention as during Monsoons, mud blocked small holes where there was water seepage.

In spite of being a popular household practice in Kikruma, there were many villagers who did not practice Riiza or Zabii. There were two kinds of responses related to this- (a) Since their agricultural fields were located far away near rivulets so they did not feel any need to practice Riiza; some told that they had access to water source from small streams so they constructed irrigation channels from those streams to the field that in turn helped rain water to flow directly to the field and (b) Most of the families who did not practice Riiza or Zabii told that they did not possess sufficient land or money to construct the same even if they wanted to.

One of my respondents from Kikruma shared an idea of constructing *Community Riiza* in order to make this ancient practice affordable to many. In the background, his wife was seen as weaving clothes in traditional handloom; she was making uniforms for the upcoming Mothers' Day celebration in the village. She even stated that if not for financial constraints, she preferred modern machine or power loom to traditional handloom. Their enthusiasm towards then upcoming Mother's Day event was noteworthy- apparently a Western import and a by-product of Christianity, it betokened transition in choice of cultural festivals celebrated in the community. Weaving traditional clothes for West-inspired event was again a reminder of tradition-modernity flux in Phek district.

As a whole, rain-water harvesting was catching up but not a household name in all villages. My respondents from different villagers expressed their views differently on it as discussed earlier. According to Dr. Singh, a senior scientist at KVK, “The villagers who do not practise Rabi cropping do not indulge in rain-water harvesting as they generally do not face water scarcity issues”.

5.3.2.2 Indigenous non-agricultural practices

Handicraft and handloom including basketry and weaving

Basketry and weaving were found to be practised commonly across the district mainly for self-use but of course in some households these practices also served as secondary means of occupation; the products were mostly sold locally. As per ethnographic study, it was observed that out of 10 male respondents, 6 of them practiced basketry and out of 10 female respondents, 9 of them practised weaving.

Animal rearing including apiculture

Traditionally the natives are used to animal rearing, starting from poultry and meat to rabbits and mithuns, they rear a variety of animals as seen in Table 26 and 27 in chapter four. It is an integral part of their lives. Under the efforts of National Research Centre on Mithun and Indian Council of Agricultural Research (ICAR), animal husbandry is gradually evolving into a commercial activity. Two specific references must be made of apiculture and mithun rearing.

Apiculture is traditional beekeeping practice that found new vigour under Nagaland Beekeeping and Honey Mission (NBHM), a state government endeavour of sustainable livelihood opportunity meant to preserve and promote Nagaland’s honey. It does dual job of conserving the traditional practice of bee hunting and creating new jobs. Beekeeping is an age old practice embedded in socio-cultural rituals of the communities. Earlier forefathers directly accessed bee from forests for personal consumption whereas now some people even receive training for it. According to officials, since the establishment of NBHM in 2007, it has introduced modern scientific beekeeping methods to develop scientific management practices, improved harvest techniques by increasing productivity and promoting sustainability, produced

pure, organic and high quality honey and created a demand in the domestic and export market. The officials said that government should continue awareness campaigns to preserve bee habitats that are fast deteriorating because of rampant degradation of forest cover (The Telegraph, 2016). Respondents admitted that modern beekeeping was more convenient than traditional style. In Chakhesang areas, it was already gaining momentum and was a dominant practice in Pfutsero subdivision where it was found that a two-room office was recently allotted for state sponsored beekeeping mission under which local indigenous people would be the proprietors of bee; in Pochury area, NHBM had not started back then, as a traditional method it was widely practised including stinged and stingless bee. Again, in Lozaphuhu NHBM had started and around 40 households were tied up to the project.

As far as mithun rearing is concerned, it has attracted debate amongst a section of natives. As highlighted by Chinai (2018), haphazard development schemes by the government destroy indigenous agriculture and land in Nagaland. An example of poorly thought-through development policies advocated by the government and blindly accepted by the natives is extensive mithun rearing. According to journalist Rupai Chinai, ideas of development schemes imposed by the government have led to disillusionment among many people in Nagaland. She talked about Chizami village where youths have come out to question and debate what kind of development is good and sustainable for them. Disappointed with failed government programmes, they have come up with a study circle to examine what is good for them in terms of sustainability and protection of their resources and environment. Chinai also focussed on the work of the NGO, Northeast Network which has been taking the lead in helping villagers of Chizami understand the forces of globalization and its effects on local economy.

Traditional hunting and fishing

Hunting is no more a widely practiced activity amongst the natives. On greater cause of environmental and wildlife protection, it remains banned throughout the year excluding some specific occasions when it is allowed for limited duration. Participation of woman in hunting is traditionally considered taboo. Earlier there used to be elaborate social ceremony in terms of rituals conducted at home before the male

member, also the head of the family proceeded to hunting. Such rituals were abandoned with the onslaught of Christianity. Even in case of fishing, traditionally natives adhered to strict rituals. Many of those rituals wore out of practise in contemporary age. Fishing otherwise is a popular practice, found in local variants across the district. It is done with the help of modern as well as traditional equipments. Small nets are allowed to be used throughout the year whereas bigger nets are only allowed at specific time-periods; modern fishing nets are banned in view of greater environmental concerns.

Traditional salt-making

The practise of traditional salt-making was discovered during household survey in Meluri subdivision. There, it was found concentrated in Hiitsu village. As per secondary sources, this practice is popular in another district of Nagaland namely, Peren. These areas are known for mineral salt springs and it is the water from such springs that are used to produce local salt, famous for its medicinal properties. This salt is made by the process of continuously boiling the salt-water. The end product acquires the shape of mini salt cakes.

It was found that unlike in areas of traditional agriculture where state interference and commercialisation was not a matter of much concern, in emerging areas such as horticulture, floriculture and in non-agricultural indigenous practices such as animal rearing, apiculture and salt-making, state interference was appreciated and welcomed in favour of commercialised profit-making activities.

5.3.3 Organic farming and traditional agriculture in Phek

Organic farming may involve both traditional as well as modern methods. Most of the villagers in Phek liked to call their agricultural products organic as they steered clear from chemical fertilisers, pesticides, insecticides, hybrid variety of crops that may affect health in long run. Educated people from within the community are known to take initiatives in disseminating knowledge on such topics from time to time. Since they do not want to compromise on quality for the sake of quantity hence they do not mind government departments imparting training to them on modern ways of organic farming.

In the words of a respondent, “Traditional agricultural methods are better in terms of quality (e.g., rice); modern methods are easy-to-employ, better in terms of ease of work and quantity of product but quality (of rice) is not as good as that produced by traditional methods. Traditionally, we use spade and buffalo to plough field hence soil gets deeper and softer, retains moisture but in modern method, soil gets harder when it dries up after using power tiller but we prefer modern instruments as they reduce our work load significantly. At present, low levels of production do not even suffice individual households, let alone market, hence we need modern agriculture but one that is organic and sustainable”. Though he spoke in favour of surplus production but he specified that it was required to meet local needs, not for profit-making venture under commercialisation of agriculture.

According to Dr. Singh, senior scientist at KVK, by default agricultural products in Phek are organic and have credibility in market even if they may not have certificates. For instance, certain villages are known as *vegetable villages*; particularly for *cabbage cultivation*. Organic farming finds institutionalised support from National Centre of Organic Farming and Morarca Foundation. He further added that natives had started growing hybrid seeds and high yield variety for vegetables in the wake of growing market demands.

So far traditional agricultural methods were discussed but traditional methods also need traditional tools. Most of the villagers were found to use traditional tools for farming; some claimed it to be a matter of choice stating that they are better than modern counterparts whereas others complained it to be a result of choicelessness.

5.3.4 Commonly used agricultural tools by the Chakhesangs

Traditional

- (a) ‘Kiidi’ - Traditional Spade
- (b) ‘Siitho’ - Tool used for pounding in order to stop water from sipping out
- (c) ‘Methodi’ - Tool hung on buffalo’s body for ploughing agricultural field.

Modern

- (a) Power tiller (Tractor),
- (b) Water pumping machines (for irrigation)

5.3.5 Commonly used agricultural tools by the Pochurys

Traditional

- (a) Sickle,
- (b) Spade,
- (c) Hoe,
- (d) Kathi,
- (e) Jumphool and
- (f) Dao

Usage of modern agricultural equipments was not common amongst the Pochuries.

5.3.6 Use of modern machinery

Power tiller came out to be the single-most important modern machinery used by natives of Phek district. It shows a shift in age-old practice of using animals for ploughing in agricultural field. However, this shift was not prominent in any other village except the rain-water harvesting village Kikruma. Inhabitants of Kikruma credited their positive mind-set and dogged determination to excel in agriculture being the reason why they were prone to cutting roads by themselves inspite of sloppy unfavourable terrain so as to be able to carry power tillers to agri-fields.

A respondent from Kikruma remarked- “Ours is a simple agrarian economy but modern life is complex. Most of us depend on agriculture for livelihood and in last twenty years, use of modern machineries has increased. But it is very difficult to get help (financial or non-financial) from government or avail government schemes; most of us are either uneducated or less qualified. Government turns a deaf ear to our needs hence most of us including myself pool in money in groups to buy power tiller and

use it on rent or sharing basis”. Like several other villagers, aforementioned respondent used to hire power tiller on rent at the rate of Rs 350-400 per hour. In spite of being full-time cultivators by profession, he and some others, considered themselves unemployed. Apparently, in some cases educated youth were engaged in agriculture by compulsion and not by choice. They did not consider agriculture as a desirable occupation; they called themselves cultivators and not farmers.

5.4 Truth claims by Science

All respondents called their agricultural practices to be in a mixed form, in the sense that they believed it carried best of both worlds- traditional and modern; they did not necessarily look at Western science for validation. Nonetheless science made its own truth claims as reflected in interviews conducted with scientists and officers working at various government departments. During one such interview, a senior scientist at Krishi Vigyan Kendra, Poruba, explained their role as facilitators of knowledge validation for local people in relation to age-old traditional practices especially for higher productivity of agricultural produce.

Typical authoritarian position of knowledge validation by modern science was marked out in some Pochury villages of Meluri sub-division. Traditional salt-making, an indigenous non-agricultural practice in Hiitsu, Meluri awaited validation by modern science before it could be expanded into a full-time commercial activity. In the words of then village council chairman, Meluri- *“We sell traditionally-made salt in the market; this salt is popular for medicinal purposes including joint massage, relief from cough etc., however laboratory testing and certification will help in expansion... Also, we need solar heaters to maintain ecological balance such that villagers can produce more salt in an eco-friendly way”*.

Contrariwise, some practitioners of integrated agriculture (rice-cum-pisciculture) and riiza in Pfutsero subdivision use modern science not for validation but as elements of technology which may or may not be incorporated in age-old traditional practices. Again, in case of non-agricultural traditional practice such as bee-keeping, both traditional as well as modern box systems are used as per individual preferences.

A subject matter specialist (Junior) in District Agriculture Office at Phek, Nagaland remarked on the concept of development, *“Agricultural development can go a long way in bringing a positive change for the area; introduction of new techniques and use of farm machineries can ensure increased productivity. Irrigation channels are well-developed in this region as there are water sources; our department helps in construction of water harvesting ponds; villagers have been doing it themselves as well. But then farming population is decreasing day by day. Educated people migrate from villages to towns or cities and rural-urban migration is unlikely to stop anytime soon”*. When asked about provisions of training, if any for farmers, he replied – *“Before we undertake any scheme, we first provide training to the local farmers; infact we provide both training and financial assistance. Before introducing anything new, we need to undergo tests and also win the hearts of local people, it is not that easy. Recently, we organized a training workshop on IPM (Integrated Pest Management) and soon we will conduct a workshop on rotten management”*. He further added, *“Under National Food Security Mission, ‘System of Rice Intensification’ was introduced. Under this technique, irrigation can be done even with limited water and also it ensures increase in productivity. In this new system, seedlings are kept in nursery for eight to twelve days following thereafter; they are transplanted in field. There are user friendly machines viz. ‘Conno-weeder’ and ‘Power-weeder’ that are provided by government absolutely free of cost. Since last three years, it is being practised in some villages of Phek district like Kutsapo, Metsale and Losami. Gradually, it will be taken up in more villages”*.

Regarding commercialisation of agriculture, he stated that it did not seem to be possible in case of rice, that if people were willing, perhaps they could overcome difficulties and make it possible and that there was somehow some amount of commercialisation coming up in other products like fruits and vegetables. Horticulture for instance had become more organized. His thoughts on traditional practices and sustainable development echoed with that of ordinary villagers. He stated *“Since we do not use chemicals, our products are mostly organic and environment friendly. Modern agriculture includes pesticides, chemicals etc. however, in my opinion, these are best avoided; instead of using such stuffs to increase productivity, traditional methods prove to be more beneficial. Perhaps we need some kind of local variety of*

crops which are disease-resistant and locally available manure. We no longer encourage traditionally popular practices like Jhum and if at all it is practiced, we create awareness for alder-based Jhum cultivation". Even he believed that Jhum cultivation could be modified to the advantage of indigenous people, making it more eco-friendly. He added, "We are deficient in food grains as we have less area of farming; most of the land areas are not developed for agricultural purposes; we need to construct more terrace fields and practise 'pani-kheti' which is an ancient practice that helps against soil erosion, hence a great choice for food grain cultivation".

According to Dr. R.K.Singh, senior scientist and programme co-ordinator in Krishi Vigyan Kendra, Poruba, "We as representatives of modern science and state do the validation of indigenous technical knowledge (ITK) and determine whether a particular traditional belief system is correct or not- if found correct, we suggest improvement; apparently any such improvisation takes times but gradually gets internalised by natives...they cannot go back to the old system so balance has to be created between modernization and sustainable environment system". I asked him how to which he replied— "By creating awareness about ill-effects of environmental degradation, by government initiatives in introducing environment-friendly sustainable technologies and by creating better infrastructure facilities under consideration of locally available resources...After all In today's world they need external interference as they cannot live in isolation".

Dr. Nesatalu Hiese, Scientist D at Nagaland Science and Technology Council, Kohima, Nagaland and Dr. Zavei Hiese, Senior Scientist, Science and Technology Department, Government of Nagaland commented that there should be more initiatives for utilising traditional knowledge for the larger benefit of the society. That under *Drinking Water and Sanitation programme*, there are funds by Central government, projects should be taken up by public health engineering department for replicating indigenous traditional rain water harvesting model for drinking water project. Following is an excerpt from a lengthy two-hour interview with them-

On indigenous agricultural practices

“Some traditional practices are highly advanced e.g. Alder based Jhum cultivation (pollarding the tree) is more advanced than modern agro-forestry; modern scientific agriculture should infact learn from such traditional methods. Zabo- traditional rain-water harvesting is another tremendous traditional practice and a system similar to Zabo is being done in Rajasthan to cope with water scarcity issue”.

On intervention of science and technology in agriculture and organic farming

“Pilot project for rain water harvesting has already been completed in five villages of Kohima district with the aid of Karnataka State Science and Technology; the idea of roof-top rain water harvesting for drinking purposes was taken from them. There is also a provision under this project for constructing rain water harvesting ponds.....As far as pest management and composting systems are concerned, use of natural fertilisers is a common practice throughout the region; some of the systems need modification. Recently, water testing referral lab was commissioned. In Mokukchung, Wokha and Northern Kohima (Rengma) traditionally, salt is used as a weedicide mostly in the paddy fields; small unwanted plants die thus producing more yield but what happens is after five years or so, plants stop growing; salty water runs down to the river and even fish die. Moreover salty river water causes health problems, e.g. in three villages under Zunheboto, there are alarming rate of increase in cases of kidney problem and that of high blood pressure. Preliminary investigations have been initiated and soil testing is also going on. However, in Phek, Jhum cultivation is well managed and there salt water is not used in the fields. We have taken up a project for organic certification in Phek district, mostly in Pfutsero sub-division; we tested their land for three years and found no trace of chemicals”.

5.5 Commercialisation, Festivals and Socio-Cultural Legacy of Monoliths: The Surplus Connection

Amongst 32 respondents, majority (25) did not express concern about commercialisation of agriculture. In earlier times, when population was less and natural resource was in abundance, there was a sense of continuity between nature and culture. People used to organize feasts and festivals that made proper use of surplus

production. Many such traditional festivals lost relevance in cusp of modernity and became archaic.

Traditional festivals presently celebrated by the Chakhesangs are as follows:

Siikriinyi (January 25-31)

Kiiriinyi (May 2-4)

Chikhranyi (July 15-16)

Tiirhinyi (13-17 August)

Traditional festivals presently celebrated by the Pochurys are as follows:

Yemshe (Yesi) festival: Main traditional festival is Yemshe celebrated in October first week; boys and girls engage in merry-making, cleaning the village campus and surrounding footpaths that lead to agricultural fields, dance and party.

Nazhu festival (February 20th to March 1st), Khufenye, Thiinie and Therinye.

Some of the traditional festivals given up in contemporary times by natives of Phek are Nyuthii, Khumiitii, Chatiin, Chibii, Biitsii, Thiighiikhriichii, Liikhruo, Thruthuokhagha, Nyugha, Yishi, Thiinyiighii, Kalika, Thiighii thratrii and Miilaghii.

Two respondents from Kikruma narrated stories of stone monoliths spread in and around the village. In olden days, there were big granaries for stocking surplus grain. Grand feasts were held and such feasts symbolically determined power, honour and prestige within the community. With passage of time, population increased rapidly and that in turn altered the fabric of community life. Traditionally held *grand feasts* are a thing of the past now. While speaking of declining trend of feasts, the respondents pointed out at one of the stone structures that stood prominently in the village. That was indeed the discovery of the story behind monoliths of Kikruma. Those monoliths are invested with social histories, culturally inflected values as well as personal biographies; they cast ray of light onto a history that went largely unwritten and undocumented, although not of course unremembered as rich repertoires of oral history flourished from one Naga village to the next (Wouters, 2015).

Again, even in Poruba, Village Council Chairman remarked, *“In present times, development means infrastructure development whereas, earlier it meant organizing big feasts, e.g. if someone gave two feasts, status was held higher depicted by Naga House, three feasts would earn oneself a stone memento and so on, community ties were stronger whereas now-a-days people are highly individualistic and concentrate more on individual gain and surplus if any is utilised for profit-making”*. Thus, a common thread of material pursuits bound all of these villages together. With changing times, many traditionally relevant festivals including organising feasts became archaic. Agricultural produce was observed to be mainly used for self-consumption; surplus production, if any, meant business/profit-making and not feasts or festivals. Many respondents claimed that it was difficult to go for full-scale commercialisation as agriculture produces were not sufficient – though they were known to be self-reliant but in ground reality, they did not fare very well. If we look at it the other way round, subsistence agriculture was the dominant trend in Phek but not enough to match the increasing demands of modern lifestyle hence, market based economy managed to seep into the economy in connection with new sites of agricultural or related practices in form of horticulture, floriculture, cash crops, small-scale businesses and so on, albeit at a nascent stage. It must be mentioned that in all town areas, non Naga population was found doing businesses in the form of grocery, bakery, garments shop and so on. These people were not new migrants. In fact they were early settlers who had shifted to these pockets long back at a time when no one from local indigenous population was involved in such commercial activities. Today, significant number of Naga population is directly involved in business activities (Please see Figure 4).

As per Fig. 4, Out of 235 respondents, 27 were engaged in self-employment, out of which 22 respondents were businesspersons. Nonetheless out of 20 respondents in ethnographic study, only 6 respondents spoke in favour of commercial agriculture whereas remaining 14 favoured subsistence agriculture; on the grounds of being naturally organic and promoting good health for human beings as well as environment. Where on one hand, the survey data shows gradual inclination in business as an option for occupation but on the other hand, by virtue of ethnographic data, one can observe the emergence of voices of dissent that collectively collaborate

to promote sustainable livelihoods. For instance, Chizami model of development was carved out by the natives with the help of North-East Network NGO and Chizami Women Society in favour of conservation of everything local.

So far I engaged with ethnographic data from respondents belonging to Christian villages; now let me explore the inner life-world of inhabitants of Non-Christian khel in Meluri –

5.6 Non-Christian community

The researcher was fortunate enough to be able to spend some amount of time amongst non-Christians in one of the few surviving Non-Christian Khels of Phek district, located in Meluri sub-division. There was a time not very long ago when Non-Christians were a majority in this village. Over past few years, their population dwindled significantly and today they are a small minority at the brink of collapse. Second generation amongst them have mostly converted to Christianity and according to an aging Non-Christian minority, all institutions including church, state and missionaries together formed a dirty nexus propelling such conversions; that there was no support for Non-Christians compared to their Christian counterparts because of which second generation mostly took to Christianity. Though some of them expressed grief over the situation most of them seemed to have come to terms with it.

A forty year old landless widow with a fifteen year old school going daughter remarked, *“I was originally a non-Christian, converted to Christianity but I regret doing so; I remember being scolded by my parents, they were right; Christians are bad; non-Christians do not fight, do not steal, live in peace unlike Christians who are money-minded; even for Church, they charge membership fees”*.

Then there was another encounter with a typical non-Christian family where parents were non-Christians and children were Christian converts. Sixty-year-old respondent claimed, *“I will not convert; my son can do as he wishes. Those who love their parents will stick to their traditional religion; politics may change religion but traditional religion cannot be wiped away from history”*. Earlier when someone converted to Christianity, he or she was boycotted from community but now non-Christians have become a minority. Their village is presently left with only around

thirty surviving Non-Christian households. Although upset about such developments yet the respondent ended conversation on a positive note, “*Holebi history te thakibo amar khaan traditional religion*”.

They referred to their traditional religion as *Lani Ngalie*. There were leaves hanging at the entrance of non-Christian households similar to that seen in a typical Hindu household. Notably, the number of festivals celebrated amongst them was higher compared to Christians. Their traditional drink, rice beer²⁰ was made in huge quantity during festivals.

Festivals:

1. Ngazhu- It is celebrated for around 10 days in the months of February-March. It is a pre-sowing festival, celebrated for Pani-Kheti and Jhum cultivation and includes traditional dance and drink.
2. Spirit-worship
3. Nizhookhu- It is celebrated specifically for Jhum cultivation during the month of April when they first set fire. The village Chairman and traditional King decide the date every year. Traditional king system is still prevalent in their community and the king inaugurates Jhum kheti every agricultural season. People in this region do not seem to have much awareness about demerits of Jhum cultivation however they are aware of the ill-effects of chemical fertilisers, pesticides or insecticides and refrain from using the same.
4. Rasakhu – It is a pre-harvest festival.
5. Tsatekhu: It is celebrated when they start eating newly harvested crop

Like in other villages, even here in non-Christian khel, core economic activity revolved around agriculture. That asunder, they also practiced fishing using modern as well as traditional equipments. Small nets were allowed to be used throughout the year whereas bigger nets only allowed at specific times of the year; modern nets were

²⁰ Rice Beer is the traditional drink of the Chakhesangs and Pochurys; former call it Zutho in Chokri dialect and a stronger version of it is called Thiithwu whereas latter call it Akha in Pochury dialect; rice beer is referred to as Hazu in Kheza dialect. It is made up of rice, millet or maize and is served to guests as a welcome drink or during festivals.

banned. In view of respondents, there was a time when every important activity agricultural or non-agricultural e.g., fishing was governed by a set of rituals. Traditionally they were more successful in fishing activity; they would never have any physical contact with anyone, not even children or spouse while going out for fishing as it was considered a sin. In the words of a respondent who belonged to non-Christian minority, “*If I sleep with my wife, I will not go for fishing as it is considered to be a taboo that could bring bad luck to the entire community*”.

Apart from the non-Christian khel, the researcher also happened to visit another village called old khel-Lozaphuhu, with around twelve non-Christian households. Unlike in other villages across the district, the main festival in these villages was Sukrenyi; non-Christians observed it for seven days with elaborate rituals whereas Christians observed it for one day only. Interestingly, in old khel-Lozaphuhu, Christians and non-Christians were found to live harmoniously.

5.7 Change and Continuity in Tradition

Association of *traditional* with an *original form of culture*, untouched by modernity must be dealt with caution. Original form of culture is a relative concept. For instance, activities performed during internationally renowned *Horn Bill Festival* of Kohima, strive hard to represent original form of traditional culture so as to promote broader socio-cultural cohesion and preserve indigenous cultural heritage. However, they are part of a meticulously selected *tangible and intangible cultural heritage* sought to be preserved by present generation and to promote tourism in the state. In this sense, original form of traditional culture can here be understood as *invented tradition*²¹ or as living tradition in congruence with ethos of modern living.

The following example from field portrays a unique relationship between tradition, temporality and modern living –

Traditional death ritual practiced amongst Chakhesangs followed in pre-

²¹ Originally the idea of invented tradition was made prominent by E. J. Hobsbawm and T. O. Ranger in 1983 where they held that many traditions are often quite recent in origin and sometimes invented. Here the term has been used to implicate that sharp distinction between tradition and modernity is often itself invented and that traditional culture or any tradition for that matter (just like symbolic phenomena) is spurious (humanly created, invented and re-invented) rather than naturally given.

Christianity era is not popular anymore. Earlier when a person died, all important belongings of the dead, e.g. clothes, water, food etc. were placed beside the dead body. It was believed that the dead would need necessary articles in life after death. The dead body along with essential articles was hung to a tree. This practice is archaic now. Thus, to qualify as a living tradition, an original form of traditional culture needs to regenerate itself constantly through various material and non-material sites that act as symbols of socio-cultural importance. Giddens made an interesting analogy between tradition and organic creatures – ‘they either develop or mature or they diminish and wither away’. So to say, tradition can be referred to as a form of ‘living past’ that wears a normative hat as it represents not only what a society does but also what it ought to do. This perspective essentializes tradition as a feeder for modernity whereby, tradition re-invents to add to the growth of modern. In his article *The Essential Tension between Modernity and Tradition: Asian Cultural Heritage and Scientific development*, Smolicz (1991) rejected bipolar relationship between tradition and modernity whence tradition was an indicator of a negative connotation of static primitiveness.

In recent years, since many people from younger generations were encouraged to migrate from rural to urban areas and even outside the state in pursuit of education and non-agricultural professions, the question arose as to who would take forward their traditional agricultural/ non-agricultural practices and whether those practices were slowly dying down. Some respondents came up with interesting replies—

A forty-seven year old female respondent from Porba stated, “*If our children get good jobs, they can easily engage wage-labourers in agricultural field*”. Another seventy-four year old female respondent from Hiitsu told, “*Traditional practices will never disappear; we sing folk songs, perform our folk dances, practise traditional agriculture that forms the core of our economy, we wear traditional attire during festive occasions and our children will continue to do so. Even if they get good jobs, they will come here once in a while and make sure traditional practices continue in some or the other form*”. While their answers on one hand affirmed their belief in successful preservation of traditional culture, on the other hand, also reflected deeply entrenched mechanism of class and inequality, something which tribal society is

generally not known for. These communities do not seem to be free from the clutches of globalising forces; people want roads, they want education, they want development as popularly understood Western surge of modernisation theory and its follow-ups. They are even ready to migrate if required. Tradition continues to thrive under carefully chosen systems that fit into modern development agenda.

5.8 Sustainable development

Respondents were mostly unable to respond with immediate effect to the term *sustainable development*. Conversations during informal meetings provided a window to their perspectives on relevant research issues. Thirty-one year old Tiinyi, a male respondent from Kikruma was among select few who was aware of the concept through magazines and books. He believed that it should be followed at individual as well as community level for greater benefit of human race, regardless of where one was located and irrespective of one's religious practices as nothing stands taller than nature. Notably, banners and hoardings themed on environmental and wildlife protection were common sight in all four villages and for that matter across the state. On surface level it symbolised some level of environmental awareness amongst natives but as a researcher it was important to dig deeper into such symbolic markers.

Accordingly, I tried to produce a mirror-account of field experiences and that of aspirations and perspectives as essayed by respondents from indigenous communities. While conducting survey, details of which were discussed in preceding chapter four, it was discovered that most of the natives bore a simple notion of sustainable development – a form of development meant to be environment-friendly and better off with abandonment of practices that were harmful for the well-being of environment and people, for instance, jhum cultivation as illustrated in Figure 15.

In general, village heads as in village council chairmen, student organisation members/leaders and other local public leaders spoke at length about importance of environmental protection and state sponsored development. However they spoke from a position of authority hence it was necessary to unravel perspectives of common villagers who mostly expressed a positive attitude towards change and development.

Taking a hint from Durkheim's *social facts*, change or transformation has been clubbed under two broad categories- material and non-material. Material changes were prominently visible in structural aspects of lifestyle – housing, food and drink, technology, state intervention, population, education, religion, economy and polity. Non- material changes were observed in form of beliefs and values, gender-roles, language, occupational practices and so on. Villages in Phek district appeared to be effected more by former while some people from older generation expressed their concern over latter as well. They were particularly unhappy about environmental destruction caused by commercially induced profit-making motives of younger generation. Eighty-four year old male respondent Rhakho, a cultivator by profession, commented: *“In my youth, we did not wear sandals or shoes; being semi-nude was normal for us... there are vast changes now in almost every aspect of life... we are not eating what our parents ate”*. He cited the example of *rice beer*, a traditional home-made alcoholic beverage. With a sense of pride, he told, *“Now- a-days we do not consume rice beer much, only a few people brew it especially non-Christians, even they offer it only to guests and/or have it themselves; selling and buying of rice beer is prohibited....there is a lot of change which is beyond my comprehension so I cannot express much but from what I know, now we are living more comfortable lives”*.

Each time a respondent appeared confused regarding her or his perspective on change and development; researcher conversed with them a little longer on general aspects of quotidian life and asked them if they were happy with ongoing changes. During one such interview when question was posed to a seventy year old male respondent, he replied with a noticeably innocent smile up his face, that change for good was welcome. He then cited an example to substantiate his statement – *“To construct this kind of veranda where we are presently seated takes much lesser time and lesser energy now; in spite of a few unwanted things, life as a whole is somehow more comfortable now”*. The unwanted things from what could be gathered from respondents across the district can be best expressed as (a) loss of mechanical solidarity (in Durkheimian sense) and (b) increasing market-driven consumerism in the society.

Apart from positive responses, there were also a few voices of dissent and confusion amidst some natives who did not view Christianity, development or modernity- any of it as a blessing. It was equally important to take note of such voices that provided discontinuity in an otherwise running narrative. During fieldwork, researcher encountered many villagers complaining about bad roads, poor transport and communication, especially in Meluri sub-division and not without reason. In fact some of the roads were in very bad shape, dilapidated to the extent that researcher was compelled to conduct telephonic survey in one household; it was not possible to travel to that village at that point of time. Not very far from that place was Avankhu under Pokhungri circle, an international trade centre, inaugurated on 22nd February, 2016. According to local people, the road on Indian side of the international border with Myanmar needed repair and construction.

Regarding the new trade route with Myanmar, the then Education minister-Shri Yitachu (referred to as their traditional king in Yisisotha village, Meluri subdivision by Pochury tribe members) remarked, “Once prospect is there, road is nothing”. According to him, emergence of an international route was enabling factor for both countries i.e., India and Myanmar; it helped in maintaining friendly relations between the two neighbours. As far as sustainable development is concerned, he stated that there were many villages where hunting and logging activities in forest area were banned as the state needed rich forest coverage for environmental conservation and also for sustaining water; that water is an invaluable resource asset and in the process of development, hydro power could bring a vast area under cultivation. He also categorically mentioned that the practice of some traditional agri-methods such as jhum was vehemently discouraged; that the state was constantly trying to provide road linkages and to encourage cash crops production in small areas. Besides, he also mentioned that in a troubled state such as Nagaland, public should be pro-active and alert not just in economic sphere but also in political issues.

5.9 Women on Development and Gender-Role:

It must be mentioned that during fieldwork, most encounters with women turned out to be peculiar and interesting. Initially they would shy away from participating in any conversation, they either laughed/giggled or asked other members

of the family or even neighbours to talk. A little later, when they felt comfortable enough, they would share deeply enriching thoughts extending to diverse range of topics, right from flagging off prejudices of a patriarchal society to perspectives on indigenous agriculture. Like they say in second-wave feminism, *the personal is political*. This stands valid for present study implicating that the personal (seemingly private domain of women engaged in domestic chores etc.) should be examined carefully to provide insight into the political.

The researcher would like to share one among many such experiences where though the respondents were unaware of state-sponsored schemes other than MNREGA and did not speak directly about matters related to state and power but they gradually opened up on matters pertaining to politics and gender equality— *It was a regular Sunday afternoon, villagers had returned from church. Women were busy with household activities. The researcher, on way back from church, met a forty-seven year old lady, a cultivator from Porba village in Chizami, drying grain in the courtyard. Initially the lady was not very keen on interacting; her infant child cried continuously and after first few minutes of talking, she kept the child inside the house and called out to her old neighbourhood aunt. By that time, researcher reframed questions from state sponsored government schemes to everyday mundane affairs. The lady first discussed it with her aunt and then the two of them started speaking about various organizations in their village e.g., student organizations, youth bodies and women organisations where according to them, women were under-represented. They acknowledged increasing participation and involvement of women in local level politics in recent years but stated that it was below satisfactory level; in their opinion women should equally be a part of all such organizations. It was pleasantly surprising to hear such remarks as initially they were hesitant to talk but post ice-breaking session, they told me about things that I had not heard from other women in the field. They talked about state, politics, feminism and gender equality in their own everyday life-experiences. Thus, many a times, a concept may also be understood through praxis and not necessarily through theory. The first lady was a school dropout and the second illiterate. When asked about changes if any in nature of work, they gave the same reply as most other women, mentioning revolutionary change in their lives, owing to road connectivity and community water supply.*

While talking about issues related to lifestyle changes and gender role in their community(s), most women talked about reduction of drudgeries in their day-to-day lives. Apart from highlighting these positive dimensions of change, some respondents also pointed out negative aspects of change. A sixty-year old woman recalled as to how during her childhood, character and behaviour of people were simpler; they did not feel the need to lock their homes, knew that they were safe to go out whenever they wanted. Modernity certainly brought comfort and luxury but at the expense of security and freedom. When younger women (aged 20-40) were asked about insecurities if any, whether there were any known accounts of domestic violence in their community(s), they replied in negative, stating that there was no such case heard of in their village. During entire field-work period, researcher did not come across any visible episode of domestic violence however the presence of woman organizations and testimony of some women regarding successful formation of rules and regulations pertained to sexual harassment latently speak of their organised effort against patriarchal prejudices and crime against women. A young female cultivator from Kikruma spoke about new rules and regulations framed by Women Society wing of Village Development Board (VDB) for prohibiting cases of harassment and sexual abuse meted out to women. Woman VDB is a sub-body under VDB formed during 1990s; they get a share from main VDB fund. She articulated her view on traditional agricultural practices being storehouse of knowledge and environment-friendly hence sustainable and that they must be preserved and also replicated elsewhere with localised variations.

A close look at division of labour in these communities reflects gender-centric roles performed by women and men. While talking about absence of known cases of domestic violence in the village, a seventy year old female respondent exclaimed with a smile, “I wonder as to how you manage to work like this, courageously like a boy!” Amidst routine answers that draw a common pattern, these are the remarks that cannot be missed as they can be important latent clues; reflecting deep-seated patriarchal gendered differences present in these communities.

Three areas of work marked by prominent gendered roles were- weaving, domestic household chores especially cooking and agriculture.

(a) Weaving:

The culture of *weaving* is one such gendered activity that has survived through generations albeit with some major alterations. Traditionally, it was earlier a compulsory activity for all girls; they had to plant cotton or, so to say, develop raw material for weaving themselves. Weaving those days was perceived as a symbol of high prestige and honour. Age-based groups were formed to practise weaving communally. Today weaving is neither compulsory nor a community activity; whether for personal or commercial purpose, in present generations it is an individual activity apparently performed by female gender only. Thus, in earlier generations, weaving was an important cultural symbol associated with womanhood. Even today weaving is an important exercise practiced by exclusively by woman however the strict customs associated with it have become thing of the past. As validated by female respondents, unlike in earlier generations when unmarried girls were bound to practice weaving, had to customarily shave off their heads and remain bald till marriage, such strict customary rules grew obsolete in present times.

(b) Cooking:

Cooking like most household chores was done by women. Most of the respondents used firewood as medium of cooking.

(c) Differentiation in nature of work in agricultural practices:

Women worked more than men as they performed both household chores as well as agricultural tasks. However, it was told that women generally performed physically less strenuous tasks such as plucking grass and weed, sowing activity, carrying tiffin and so on.

Researcher accompanied some of these women to their agricultural fields. Participating in their agri-related activities gave a better over-view of their agricultural chores. Participant observation requires active co-operation of local people. Throughout the course of fieldwork, inhabitants of Phek district were extremely warm and hospitable. It was during one such field activity of clearing weed

that some female respondents elaborated differences in nature of agricultural work performed by men and women.

Nature of agricultural work certainly differed for men and women. However, irrespective of nature of work, women outweighed men in respect of total working hours. In fact some male respondents were all in praise of women from their community for multi-tasking so efficiently. A thirty-year-old male respondent, a cultivator by profession stated, “Women are more supportive than male members both in house and in field”. Thus, seemingly modern concept of *super-woman syndrome* (referring to women who single-handedly manage both domestic and professional work without complaining, criticised by some group of feminists) was fairly active even in indigenous communities of Phek district, Nagaland.

Below is an excerpt from an interview with a sixty-two year old female respondent from Kikruma:

It was five o' clock in the evening; the respondent was busy preparing broth for domesticated pigs. She used firewood for cooking and not the gas stove that was lying at a corner of the kitchen. Out of curiosity to know about the choice of cooking medium, researcher asked her how often she used gas stove. She replied, “We mostly use firewood and I am anyway preparing food for pigs...” She spoke about a few major changes in her own lifetime. She started on a positive note, stating that since in earlier times, agricultural fields were located far away and there were no roads, women had to wake up very early, around 3:00 a.m. in wee hours before dawn. There was no torch light during those days; they burnt pinewood oil and marched to the field. Moreover, they carried heavy head-load on their way back home whereas in present day, vehicles are available on rent/sharing basis that can be hired to fetch goods from distant locations. Researcher noticed slight tonal change in her voice while she graduated to point out some of the vagaries of contemporary developments – “Earlier we loved and respected our environment more...With population expansion and development of transport and communication (including agri-link roads), people now cut trees according to their whims and caprices. Earlier, since everybody carried head-load, they only carried how much they really needed”. So in her view, though people from ancestral generations felled trees but they were far more judicious and

did so only to meet their bare minimum requirements; they used natural resources economically. In modern times, it is the commercial viability of selling and profiting that rule peoples' activities. Sensing some dilemma in her statements concerning change and development, researcher again asked her about personal lived experiences of lifestyle changes as a woman compared to that of earlier generations, if more favourable now. She responded positively on marked changes in woman's daily life immediately citing example of rice mills (a by-product of modernity and globalisation), claiming that household chores have become less laborious, time-efficient and energy-saving.

Apart from formal interviews throughout the day, it was during evening chatting sessions that a lot of knowledge related to study area was gathered. It was during such informal interactions that researcher could sense some sort of pattern evolving in data hinting towards some kind of flux between tradition and modernity. The dynamics between the two was perceived through community ways of life revolving around culture and indigenous practices.

In view of female respondents from all four villages, education was the single-most important pre-requisite for ensuring all-round development of people in the region. Good quality education would help their children procure good jobs and assure that younger generations did not get stuck with agricultural practices. They shared their personal story stating as to how they were busy making their ends meet, not for basic needs of food, cloth or shelter but predominantly for bearing expenses of good education for their children. Good education for them meant sending their children to towns and cities as villages only had schools and most of the schools were limited to eighth standard.

Another factor that drew attention was women from older age group (40-50 years) giving birth to children. Broad differences in lifestyle, food habits and so on seemed to be reasons behind high fertility rate amongst women post-thirties; something which is considered rare in modern life. In general women workforce was observed to be actively engaged in agriculture as well as household chores. Seventy-five year old cultivator Hoshi and many others of her age went to agricultural field regularly and practiced cultivation defying their ages. I asked old Hoshi if it was not

exhausting to climb up the hills at her age. She replied that it was a part of her daily routine especially the nearby fields. While heading back to work, she exclaimed in reverberation with most other women, “Earlier there was no rest for women but now-a-days our work is comparatively lighter”.

5.10 Conclusion

Thus, if we may look at development as change for progress that could be - (a) Material and (b) Non-material, natives of Phek appeared to be seemingly positive in their opinion about former whereas they reserved a mixed opinion regarding latter. They had experienced specific lifestyle changes, amounting to a more comfortable life. It was the taste for comfort that created a ripple effect, changing several other aspects of community life. Earlier when population was scarce, natives belonging to same clan or tribe lived together, more like a close-knit community with greater social cohesion. Ongoing population explosion has led to greater diversification from *gemeinschaft* (community) to *gesellschaft* (group). In respondents’ view, they are exposed to lesser insecurities in present times as there are several government schemes and funds unlike earlier when natives lived in total isolation. On the flip side, older generations who were rigid in their approach towards outsiders, did not like external interference and were not under state mechanism but they respected their environment more. Over-all socio-cultural fabric of society stood altered by development and religion in Phek district and are prominently visible in following spheres- (a) Dressing, (b) Housing, (c) Religious rites and rituals including festivals and feasts, (d) Traditional practices such as weaving and hunting (e) Social organisation of dormitories (morungs) for young boys and girls, (f) Concept of health and hygiene.

While aforementioned categories are a manifestation of change and development in quotidian lives of the Chakhesangs and Pochuries of Phek district, they are cocooned inside broader socio-economic and political factors. These broad categories not only facilitate and/or restrict such manifestations but also in view of respondents, play a determining role in course of change and development. They can be classified in following domains-

- (a) Religion meaning conversion to Christianity and related outcomes, education being at the top of the list apart from other major lifestyle and socio-cultural changes
- (b) Infrastructure development mainly transport and communication
- (c) State-sponsored development programmes
- (d) Combination and/or modification of indigenous and modern practices, both agricultural and non-agricultural

As far as indigenous practices such as *riiza and zabo* are concerned, respondents were found to use modern science as a tool to supplement their practices. In fact government departments were found trying to replicate them in other regions as well. Thus it does create a strong possibility of an independent knowledge domain of *indigenous science*.

CHAPTER 6

SUSTAINABLE DEVELOPMENT AND INDIGENOUS KNOWLEDGE: A CONCLUSION TO A REVISED BEGINNING

Development in many ways defies definition apparently because of its manifold diversifications and conceptualizations across globe. Nonetheless, even today, popular development thrust signifies an attempt to *develop the underdeveloped*; even today it primarily rests on conceptual bipolarity between developed North and underdeveloped South. It is this *artificial polarization* that reproduces same age-old colonial dichotomy of civilized versus uncivilized, wrapped under notion of development as a signifier of desirable progress (read progress as qualified life), advocating the idea of civilizing the uncivilized. As already mentioned in chapter one, development thus is a highly value-laden concept fed with universalized symbols of progress and change, significantly dominated by modernizing ethos of the West. In fact modernity's promise of development is a mammoth enterprise; a never-ending project replete with paradoxes. It forces an ethnocentric mapping of world on lines of *developed we* against *underdeveloped others*. I repeat the question as to how do we comprehend rather challenge culturally biased symbolizations of modern world development?

For most of the people on earth, the word development ushers a negative connotation of what they are not. Our planet does not hold the carrying capacity of all countries to successfully follow Western example of modernity and development. According to William Rees (1996) (who pioneered the concept of ecological footprint), at present rate of world population, sometime by this century, "Five additional Earths would be needed, all else being equal - and this is just to maintain the present rate of ecological decline." The wealthiest segments of world's population have already appropriated entire long-term carrying capacity of the Earth. It is on the background of environmental damages of such severe extent that concept of sustainable development surfaced (Agrawal, 1995).

The rhetoric of official development aid as well as that of historically placed dichotomies take the 'external intent to develop' as an a priori to 'internal dynamics

of immanent development' in underdeveloped countries (Lepenies, 2008); precisely why to a large extent, contemporary notion of development is shaped by longstanding history of dichotomous categorisation of world, referred to as artificial polarisation here. Development policies, guided mostly by international institutions like World Bank, International Monetary Fund, and United Nations and so on, do not tamper with well-placed historical foundations of the concept. Some historical classifications e.g. conceptual dyads like Hellene-Barbarian, Christian-Pagan and Human-Subhuman are deeply embedded in West-centric conceptualisation of developed versus underdeveloped world. Reinhart Koselleck coined the expression 'asymmetric counter-concept' to characterize semantic structure of such pairs. Taking a clue from Koselleck's work, Lepenies (2008) drew close links between historical 'asymmetric counter-concepts' and concept of development. Such recapitulation helps us understand present-day ironies related to the concept.

Development, a supposedly multi-dimensional concept, is often strait-jacketed as global policy tool under modernization ethos; how do we capture interplay between tradition and modernity in field? For purpose of my research theme, I tried to study this through socio-cultural changes in concerned indigenous communities. Since it is one of my prime research objectives to decipher whether indigenous knowledge can be perceived as a source of non-arbitrary symbol of sustainable development, hence it was important for me to understand and evaluate indigenous practices of Phek district in relation to their larger worldview. Thus, I lifted parameters from quotidian socio-cultural life of people peeping into their culture and economy embedded on bedrock of religion and polity to address my research questions. Since indigenous knowledge is understood as a whole and not in parts hence these parameters were studied in conjunction with one another.

Development could mean different things to different stakeholders. Each time that we talk about it, we need to point out as to whose development are we really talking about and whether our conceptualisation(s) of development addresses primary concerns of stakeholder(s) being addressed in a given context. It became evident during pilot survey that co-relation between sustainable development and indigenous knowledge cannot be understood in isolation. Though sustainable development grew

out of concerns of severe global environmental crisis and role of indigenous communities in providing local solutions to global problems but it is not entirely wrong to say that it was another attempt to save state induced development agenda from falling into oblivion. The very nature of sustainable development being future-oriented (conservation of resources for future generations) accelerated its popularity, creating a snowball effect on other related domains especially agriculture and rural development. With a host of prominent environmental changes; marked increase in human population, lesser rainfall compared to earlier days and dry catchment water-sources, criticality of using natural resources economically is more important than ever before. In spite of all kinds of material comforts introduced by modernity induced development, environmental damages cannot be overlooked.

One fundamental fallacy of our times seems to be random association of anything indigenous with realm of homogeneity. Indigenous knowledge may or may not be present in a coherent form. Indigenous worldview and indigenous knowledge based practices are not reducible to just another resource out there waiting to be tapped. They may constitute vital symbols that could speak of social history of these communities, aiding a greater understanding of their identity and of their relationship with past, present, and future. Just like our natural world is divided into categories, our social world is also highly categorized. What becomes noteworthy is our identification with one or more of these categories. These social categories evolve historically.

Amidst a plethora of categories unleashed by modernity, one not so remarkable but deep-seated categorization is the colonial hang-over of 'developed we' against an 'underdeveloped others'. Who are these 'developed we/underdeveloped others'? Since formal top-down development approach met with several criticisms, somewhere around 1970s, alternative approaches started to proliferate. One such idea was that of endogenous development that highlighted possibilities of drawing upon indigenous knowledge to produce more effective development strategies from within. The concept of endogenous development did not however become as popular as that of sustainable development that gradually turned out to be a torchbearer of state development policy-making. Article 8(j) of the Convention of Biological Diversity

(UN, 1992) contributed to this process by requiring signatories to: “respect, preserve and maintain knowledge, innovations and practices of indigenous and local communities embodying traditional life-styles relevant for the conservation and sustainable use of biological diversity” (Wiarda, 1983). Taking the shape of a cross-cultural proposition that encourages cross-cultural dialogue with indigenous communities and government of different countries, sustainable development managed to gain a lot of momentum in theory. This study tries to open world of possibilities for culturally neutral symbolization of sustainable development such that it becomes meaningful in practice as well.

What started as an accidental knowledge of *Zabo*, turned out to be quite a journey during course of fieldwork; substantially broadening ambit of indigenous knowledge to include non-agricultural practices as well for example *Traditional salt-making* by Pochury community in Meluri sub-division. With a view to prioritize environmental management, global forums increasingly open doors for integration of traditional knowledge with Western science. However they usually do not take necessary steps to revert historically grounded power relationships between practitioners of indigenous knowledge and that of Western science. One such power relationship was observed in relation to practitioners of traditional salt-making in Hiitsu village in Meluri sub-division of Phek district and scientists as discussed in chapter five.

In connection to reversal of power dynamics and overcoming of dichotomy between so called developed and underdeveloped, the term underdeveloped considered derogatory by many is replaced by the term developing in contemporary era. Former denotes static state of affairs devoid of any sign of progress whereas latter presupposes a movement towards a satisfactory level of progress (read as development). The word developing is thus a semantic expression of an idea proposing development to be a process, a gradual movement, which will lead to overcoming of rigid dichotomy of developed versus underdeveloped (Lepenies, 2008).

Since my research objectives require an in-depth understanding of given indigenous culture in terms of their own interpretations, hence, I based my research on a mixed model –

It was partly an ethnographic approach linked with broader framework of symbolism; at the same time for up scaling the credibility of my work, I also used survey method. Thus, in light of my literature review and under the premises of mixed research methodology, my major research findings from the field can be summarized as follows:

6.1 Major Research Findings

As discovered during fieldwork, religion is the single-most important factor constituting worldview of Chakhesangs and Pochuries of Phek district. They believed all major changes and development to be hugely a result of shifts in their religious beliefs and practices. Christian missionaries, in sync with west-centric modernity seem to have redefined entire way of life for natives belonging to these communities. These missionaries not only spread Christianity but also in the process, reproduce west-centric notions of modernity and development in the region. As elucidated in preceding chapters, my informants singled out ‘advent of Christianity’ as a watershed moment, marking a plethora of changes in their socio-cultural life. For instance, with conversion to Christianity, the idea of festivals underwent massive change; several old rituals were discarded.

The assumptions forming premise of the study were cross-checked in field with the help of quantitative as well as qualitative methods, both of which confirmed that development was an unavoidable phenomenon in peoples’ everyday lives. Development is rather a twisted tale awaiting revisions that distribute equal weightage to so-called scientific practices as well as age-old indigenous practices. Whether seen as a myth, a reality or hyper-reality, development today is an integral part of government vocabulary. My data analysis clearly points towards fortifying indigenous knowledge as independent space for addressing larger world development crisis, world water crisis being a critical part of it.

Can we envisage a new metaphor of development fed by diverse knowledge systems including indigenous and science, non-western and western in symphony? Can a revised understanding of sustainable development in unity with indigenous knowledge open new doors for development to include diverse worldviews?

In congruence with both set of data laid out in chapter four and five, I safely conclude that yes, it is possible for indigenous knowledge to create horizon for newer frontiers of knowledge, conducive to sustainable development. Traditional practices like Riiza, Zabo are great examples to identify indigenous knowledge as a distinct and separate knowledge domain. The emulation of Riiza as Zabo by representatives of modern science in Phek district only furthers argument in favour of a symbiotic relationship between indigenous knowledge and scientific knowledge, creating niche for an indigenous science. The Chakhesangs and Pochurys of Phek district understand development as a necessary evil. Even though most of the respondents from sample one and sample three had not directly heard about the term sustainable development but almost all of them were able to relate to it. In all five sub-divisions, natives were divided through socio-economic conditions of class in their approach to traditional practices and environmental conservation. As pointed out in chapter four and five, field findings show that the educated and comparatively well-off people were the ones who had heard of sustainable development; they were also the ones who professed agriculture as a hobby and not for hand-to-mouth living. Though cut apart by socio-economic life-situations but natives were still joined together by religion. The philosophy and practices of religion may have changed but it still played the role of binding them together. In fact vast majority of people believed in the transitional powers of Christianity as a religion.

My research as a whole reflects upon the interplay of tradition and modernity in shaping non-arbitrary symbols of sustainable development. Indigeneity in the present context negotiates with conventional systems of power-knowledge complex, specifically Christianity both as a religion and as a way of community life. This research work is intended to address the double jeopardy of indigenous knowledge complex— the danger of promoting it as an independent knowledge system (that would probably be appropriated by capitalism and globalization for its sustenance) along

with the problem faced by it as something parts of which need to be incorporated in Western science in the name of sustainability. The study relies on data triangulation to capture a comprehensive understanding of the research problem. The underlying assumption is that there is some science in indigenous knowledge just like there is some tradition in modern scientific knowledge. Moreover the integration of indigenous communities into the wider economy brings a series of life-style changes that create new aspirations, access to which requires a greater participation in market economy. There is also demand for rapid modernization of indigenous resource management strategies.

Why should we club these vibrant forms of indigeneity under multiple or alternative modernity rather why not simply call them indigenous and still assert their authoritative power? This brings to my mind the relationship between science and common sense. Common sense can be viewed in two ways- one in a pejorative way and the other in a positive sense. It is almost as if associating something with ‘modernity’ and ‘science’ automatically gives it an edge over the otherwise commonsensical or traditional knowledge. Foucault’s power-knowledge complex seems to be doing its work both latently and actively in contemporary society. Thus it becomes important to look at the simultaneous processes of homogenization and heterogenization in a highly globalized world where continuity and change manifest in myriad ways.

We can understand this under the framework of reality-anti reality debate in a different rubric though. We already know about the developments of various philosophical moorings in social sciences starting from positivism – to post-positivism to social constructivism and interpretivism to post-modernism. It is interesting to note that concerns of a scientific study of society under sociology boomed with positivist moorings associated with modernity and ever since then it has come a long way to have broadened its base so as to include different approaches taking sociology from the realms of grand universalist theory to multiple paradigms. However what started with modernity has travelled to post-modernity and in either case the concept of ‘modernity’ is taken for granted like we apparently know what we encompasses.

Seeing a particular culture as hybrids of tradition and modernity, seeing the contemporary world as a playground of multiple realities, all of these entail a priori knowledge of what constitutes tradition and modernity so as to be able to articulate the effects following their permutation-combination. It is here that tradition is conveniently clubbed with that which is 'local', vestiges of a time dating before modernity; modernity thereby is formulated as 'out there' in the global world, associated with the contemporary times and post-modernity then easily becomes the offshoot of modernity. But what if the "modern" itself is continuously being constituted and re-constituted through time and space and thus not easily separable from "traditional"? This brings us to a more fundamental question- why are the concepts of tradition and modernity being reproduced in a typical fashion?

Wade talked about social constructedness of tradition and modernity taking various examples from anthropology. Kuper's book *The invention of Primitive Society: The Transformation of an Illusion* (1988) delineated the endeavours of anthropology in reinventing the idea of 'primitive society', binaries of tradition versus modern as a justification for its intellectual pursuits. The Occidental/Orientalist projects underlying much of anthropology's history in colonial days reflect similar Eurocentric tendencies (Wade, 2007).

Although various scholars so far have pointed out mutually re-inforcing hybridizing nature of traditional indigeneity and modern science, however both these concepts usually pass as untampered binaries. The relationship between sustainable development and indigenous knowledge thereby parallels the relationship between theory and research which is quite a dialectical one.

This work was intended to address double jeopardy latent in indigenous knowledge complex- the danger of being promoted as an independent knowledge system in queue to be the next big thing subsumed by the wheel of global capitalism along with the problem faced by it as something that needs to be authenticated by science.

Anthropogenic activities during ancestral generations automatically helped in environment conservation as people were not guided by business-centric (profit-

making) motive of modern economy whereas with every subsequent generation, changes in socio-economic practices accelerate significant changes in environment. Even seemingly small economic activity like selling firewood sets huge repercussions in forest and over-all environment protection. In the words of a retired government school teacher from rural Kikruma who is now a cultivator, “Earlier people did not sell firewood like they do now. With spread of machines and vehicles, raw materials are easily transported from one place to another; moreover with invention of guns, hunting became more of a sport than a survival strategy of earlier hunting-gathering communities. People started killing birds and animals rapidly, the balance is lost somewhere”. To control unwarranted hunting, it is allowed only twice a year on the occasion of Good Friday and Christmas and remains banned otherwise under Wildlife Protection Act.

However, occasionally, during fieldwork, in the late evening hours, I met groups of people, returning from hunting of small animals. At the same time, I also observed enthusiasm amongst local youth who stood together on various social issues, environmental protection being one of the burning issues. In the words of village council chairman of Kikruma, “Younger generations are more aware than us. Kikruma Youth Organisation is very active; it is approved by Village Council and is empowered to keep a check on illegal hunting, felling of trees, indiscriminate burning of jungles etc”.

Natives in Phek are generally attached to their traditional practices viewed as culturally significant and environment-friendly. It is only in need of greater economic security and upward social mobility that they like to engage themselves with other professions. Although there has not been any drastic change in their occupational pattern but a lot of emphasis was laid on the significance of education. It is rather the spread of education that results in changes if any in indigenous practices apart from the modifications brought by representatives of state and modern science. Indeed science and technology has become a part and parcel of natives’ contemporary lives. The inhabitants in fact seek positive government intervention for aid through training, workshops, providing machineries, raw materials and so on. However, modern machineries would mean increased productivity that in turn necessitates bigger

markets for surplus products. This calls for greater commercialisation, indicative of contemporary trends post-liberalisation. However, to many, the idea of rapid commercialization appears to be problematic.

In his essay, *Technology and the Reproduction of Values in Rural Western India*, Arjun Appadurai (1990) made a critical analysis of electrification of traditional open-surface wells in a village in Maharashtra. It was observed that commercialization of agriculture, induced by technical change, not only disrupted reproduction of community values and culture, but also increased farmers' dependence on cash nexus, depriving them of the insurance provided by a close-knit communal existence. Collectively, these essays stressed on the significance of consolidating indigenous knowledge culture against West-centric modernization culture.

So to say, indigenous knowledge systems are not free from external influences whether these influences are helpful or harmful. Phek district betokens post-Christianity influences and changes in variegated ways. This research work dwells on capacities of indigenous/traditional knowledge and institutions both to (a) deconstruct the so called global scientific narrative that projects them as inferior or dependent as well as to (b) highlight the ability of such traditional knowledge/ institutions to borrow technical, and sometimes cultural resources of the west in order to confront socio-economic and political challenges in the given area.

One of the research objectives was to evaluate whether 'scientific knowledge vis-à-vis modernity' and 'indigenous knowledge vis-à-vis tradition' operate as two separate entities, where science mostly overshadows the indigenous or is it possible for indigenous knowledge to operate independently? As the present work suggests, tradition and modernity cannot be juxtaposed as two strict dichotomies pulling and pushing apart from each other. Indigenous knowledge thereby does not necessarily entail unchanging age old traditional practices that stand in opposition to modern scientific practices. It could be equally dangerous to be blinded by the power of modern science that many a times renders indigenous knowledge as mere add-ons to its platter. We must understand that both science and indigeneity grow out of the matrix of fluid socio-cultural fabric. Hence it is crucial to acknowledge the dynamics

of indigenous practices like that of ‘Riiza’ and ‘Zabii’ which simultaneously sheds light on avenues of sustainable development. If viewed through the lens of symbolism, development in the contemporary world is recreated everyday by arbitrary symbols. In a way then the very concept of sustainable development can be re-visited as a conceptualization of non-arbitrary symbols where ‘Riiza’ and ‘Zabii’ comfortably fit in as examples of non-arbitrary symbols.

There are binary tensions between western science and indigenous knowledge systems. Agrawal (1995) discusses the problems of differentiation and power relations and the romanticisation of indigenous knowledge. However, unlike earlier, when traditional indigenous knowledges were typically seen as obstacles to development, it is now claimed by some that these are pivotal to discussions on sustainable resource use and balanced development (Agrawal, 1995). The association of anything that is indigenous with that which is homogenous and static is highly problematic. It must be understood that indigenous knowledge based methods are not just another resource out there to be tapped. They may constitute non-arbitrary symbols of development that not only elucidates the socio-cultural history of the community in which they are embedded but also present newer dimensions of development.

Zegeye and Vambe (2006) discussed some independent-structured indigenous knowledge institutions in Ethiopia – Local men and women used these institutions to maintain their traditional practices and simultaneously cope up with new challenges in life. For instance- *Debo* and *Shemma* – Former referred to an indigenous knowledge based institution that acted like a local knowledge bank for the community, provided it with necessary skills for farming and related activities in drought-prone Ethiopia. Latter was used by Ethiopian women who specialized in handicrafts and weaving. Then there was the famous example of *ZINATHA*²²- Zimbabwe National Traditional Healers Association, a brainchild of Professor Gordon. L. Chavunduka who studied community medicine. It stood as a testimony to the capacity of age-old local traditional institutions in reinventing themselves.

²² Zinatha is a popular community based AIDS prevention and care system in Africa, a product of local initiatives; for details please refer to Zegeye & Vambe, 2006, p.

[t]he “locality” of local knowledge is not only, or even mainly its embeddedness in a non-negotiable here-and-now, nor its stubborn disinterest in things at large...Local knowledge is substantially about producing reliably local subjects as well as about producing reliably local neighborhoods within which subjects can be recognized and organized. In this sense local knowledge is what it is, not principally by contrast with other knowledges... but by virtue of its teleology and ethos.

(Appadurai, 1995, p.206)

Indigenous knowledge systems are not necessarily always at dagger's drawn with global forces. What is important is to let these communities equally determine validity of different knowledge systems. An understanding of *modernity* as a purely Western concept needs to dissolve, making way for *alternative modernity* frameworks in a fast-changing world. Non-material aspects of indigenous knowledge systems particularly oral narratives /myths/ songs/ rituals/ legends/ dance/ proverbs and so on are not inherently positive or representative of a unique indigeneity all by themselves. It is the context in which they are performed along with the content that they embody which together make them a potential starting point to rethink whole body of indigenous knowledge systems. In a nutshell, there is no absolute antagonism amongst diverse knowledge systems from within and without.

Kikruma highlights a classic example of a non-arbitrary symbol of sustainable development that encourages a two-way relationship between tradition and modernity. Christianity here is not just a religion but a community way of life which inspite of being a foreign import has very well been internalized by the community for the larger social welfare. An ever increasing awareness of environmental issues, concerns of global warming clubbed with emphasis on afforestation, banning of hunting and maintenance of forest coverage on the background of their water harvesting system all together make Kikruma a hot spot of sustainable development discourse and practice. There was a time when people were mostly engaged in ‘Shifting cultivation’ but with the passage of time, shifting cultivation (also known as slash and burn cultivation) has diminished visibly. ‘Riiza’ and ‘Zabii’ have gained popularity in recent years owing to their connection with environmental sustainability. Most of the literature review on indigenous agricultural practices in Nagaland mentions ‘Zabo’ however during my

fieldwork, I discovered that the local people in Kikruma are not very happy about this as they want their water harvesting system to be known by its original name i.e. 'Riiza' and secondly 'Zabo' is pronounced as 'Zabii'. According to the villagers, scientists and scholars from government departments and the people from the neighbouring villages have clubbed together water harvesting and fish cum paddy culture of Kikruma village under the name 'Zabo'. 'Zabii' method of farming is based on 'terrace wet rice cum fish' culture of the Chakhesang community (Singh et al., 2009). Notably Kikruma's water conservation method saves water flowing even from the steep and slopy inroads of the village to the main roads; it is further directed to the ponds and utilized for irrigation. There are a series of humps on the village main roads which at the first glance appear to be speed-breakers which they are actually not. Villagers here build a series of such elevated humps so as to block the runoff water at about every few meters. The water drains into a channel along the roadside and takes a right-angle turn when blocked by a stone. It is then channelled into the ponds. The sharing of this water between different families or clans is through mutual negotiations. This informs us about greater value attached to community form of life in this village. Riiza forms an excellent example of co-operation and competition. Sliced bamboo strips are also placed along the hill slopes to drain water into a pipe that goes below the roads and empties into the channel on the other side of the road, before being diverted into the fields. The villagers of Kikruma have mastered the art of step farming in the form of both dry as well as wet terrace cultivation. Like most other villages in the state, Kikruma also has a hilly terrain nonetheless they have turned some of their major disadvantages into their advantages that remind me of the famous story of David and Goliath.²³ The water channels are cleared and dug out from time to time depending upon the agricultural season either in accordance with their natural flow path or are directed from one step farm to the next as per the requirement generally flowing from an elevation across the steps at different levels under different owners. There are a few things that must be noted based on the interviews and observation- there is no concept of being landless here as everyone owns some amount of land; the owners of different plots of land in the terrains share

²³ David and Goliath is a well known book by Malcolm Gladwell (2013) that uses a popular narrative from the Bible to explain the strength derived from weaknesses amidst the otherwise socially, culturally or physically disadvantaged people.

the run-off water in an organized manner; the owners of the terraces situated at higher level from where the water channels generally originate are not allowed to tamper with the run-off water. However, some of my informants stated that they are unable to construct Riiza even if they want to owing to financial constraints and possession of lesser amount of land. A lot of effort goes in towards the maintenance and cleaning of the water channels. Riiza being a community based water harvesting system; the above mentioned activity is commonly shared by the villagers based on their designated cultivation area.

In recent years indigeneity has found voice in two directions – One regarding the struggle for rights of indigenous people across the globe and the other is a growing awareness of the relevance of indigenous knowledge for a greener development practice. This research is apparently based on the second idea. One prime limitation often put forward against the concretization of indigenous theory for sustainable development is its underlying association with the dangers of non-replicability. In respect to the key cases in my research, ‘Zabii’ is being hugely followed and practised in other villages of Phek district as well. ‘Riiza’ even today remains central to Kikruma however as stated by most of its practitioners it would only do good to practise something like this in other areas as well including plains. Moreover, the land resource department of the state conducted detailed research of Riiza and started replicating it in some of the neighbouring villages viz., Phusachodii, Thenyizu, K.Basa and Pholami. Moreover, a neighbouring Angami village Kidema also started practising Riiza following the footsteps of Kikruma.

6.2 Shortcomings of the study

My research is imbued in the spirit of mixed methodology approach to make best of both worlds – quantitative and qualitative methods. Though an earnest effort was made to produce a thick ethnographic account apart from an extensive survey study, however the study is plagued with a few limitations. (a) There were a few questions discovered during course of study (related to non-agricultural indigenous practices) for which entire sample of household respondents could not be interviewed, consequently, such questions were left out from survey but of course added in ethnographic interview (b) While collecting household survey data, in case of six

households, two from Meluri sub-division, three from Phek and one from Pfutsero, I could not collect data from the sample chosen by mixed probability sampling due to non-availability of respondents; (c) That asunder, in case of one particular village in Meluri sub-division, I conducted telephonic interview of concerned respondent with the help of village council chairman; the only road to the village was blocked due to landslides and being very far geographically it was not possible for me to go back to that region for a single household owing to resource constraints and (d) During fieldwork, I happened to visit one non-Christian khel for household survey, however, I could not engage in depth with non-Christian way of life apart from collecting some data out of my brief visit of two-weeks period in that locality.

6.3 Conclusion: Scope for Further Research

The present study was subtitled ‘A study of agricultural practices of Phek district in Nagaland’; reason being ‘Zabo’, (one of the primary reasons why I chose Phek district as research field) is a part of indigenous agricultural practice of the Chakhesangs. Moreover, existing literature concerning indigenous practices in Nagaland shed light mainly on agricultural practices, agriculture being their main source of livelihood. Although secondary data on agricultural practices was relevant, however, scope of indigenous practices was broadened during course of fieldwork to include both agricultural as well as non-agricultural practices. Moreover, one aspect that was specifically earmarked in early stages of research design was laying emphasis on looking at indigenous practices from a broader intermingling perspective of economy, culture and associated changes in community forms of life cut across gender and environment.

A critical interaction between environment and society; culture and development demand sharp attention in contemporary sociology. The damages already done so far have to be mended with a more holistic and long-sighted approach. Unless we create room for the acknowledgement of non-arbitrary symbols of development, there isn't anything much that we could probably do to stop/alter the pace of the global flight towards dystopia. In present study, researcher tried to (1) explore the scope of indigenous knowledge in forming a revised understanding of sustainable development, (2) describe indigenous practices such as ‘Riiza’ and ‘Zabii’

and (3) evaluate the dynamics between tradition and modernity vis-à-vis indigeneity and science.

On the face of growing environmental crisis worldwide, there is abundant literature drawing attention to – (a) Role of indigenous knowledge in promoting environment-friendly development, (b) Impact of privatization under market economy (Nathan, Kelkar & Walter, 2004) and (c) Effects of market-centric culture and consumerism on development and environment. Through present study an attempt was made to highlight given indigenous communities' approach towards agriculture and local resource management in relation to their perspectives on development and environment. As suggested by primary and secondary data, agriculture was the biggest sector in terms of occupation for indigenous communities of Phek. Their agricultural produce was mainly for self-consumption hence, at a superficial level, their economy could easily pass for a subsistence type, which does not seem to be bad given subsistence agriculture is looked up to as a food safety valve in several low income countries today. These were people who grew what they ate, built their own houses, weaved their own clothes, made their own tools and lived without regularly buying commodities in market. So was the market absent? The answer is no. These people participated in market related activities to some extent, from time to time. So if they were self sufficient, why was market making its presence felt? As observed during fieldwork, market was increasingly making its presence felt in the lives of given indigenous communities, more so through symbols of West-centric development. However, indigenous practices such as Riiza-Zabo stood the test of times and proved to be immensely beneficial in laying emphasis on the need to treat so called modern science and indigeneity at par with each other; demonstrating as to how tradition and modernity supplemented each other.

In the spirit of the theme of the research, researcher proposed HEAP model of development – that combines four elements –Hygiene friendly, Environment friendly, Agriculture friendly and People friendly measures in order to promote mutual relationship among sustainable development, scientific knowledge and indigenous knowledge systems. Thus the research carries forward the scope of further exploring non-arbitrary symbols of development through the proposed model.

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Appendix A

Interview Schedule

Structured Interview Schedule for Sample 1 (Household Survey)

PART 1

A. Basic Characteristic Questions

Q1. RESPONDENT DETAILS

1(a) Gender-

Male	Female	Others
(1)	(2)	(3)

1(b) Age-

15-25	26-36	37-47	48-60	61 & Above
(1)	(2)	(3)	(4)	(5)

1(c) Educational Qualification-

Illiterate	School Drop Out	10 th Std. &Below	Matriculate	Intermediate
(1)	(2)	(3)	(4)	(5)
Graduate	Post-Graduate	Doctorate	Professional/Technical	Others
(6)	(7)	(8)	(9)	(10)

1(d) Occupation-

Unemployed	Housewife	Student	Farmer	Govt. Employee
(1)	(2)	(3)	(4)	(5)
Private Employee	Self-Employed	Others		
(6)	(7)	(8)		

1(e) Religion-

Christian	Non-Christian	Others
(1)	(2)	(3)

1(f) Number of Family Members-

1-2	3-4	5-10	11&Above
(1)	(2)	(3)	(4)

Q2. FAMILY MEMBERS DETAILS

SL No.	Gender	Age	Education	Occupation	Religion	Relation to Respondent	Remarks

Q3. TYPE OF FAMILY

Nuclear Family

(1)

Joint Family

(2)

Extended Family

(3)

Q4. TYPE OF HOUSE

Pukka House

(1)

Semi-Pukka House

(2)

Kutch House

(3)

Q5. BASIC HOUSEHOLD AMENITIES

5(a) Electricity-

Yes

(1)

No

(2)

5(b) Water Supply

Yes

(1)

No

(2)

5(c) Community Water Supply

(1)

Household Tap Water

(2)

5(d) Toilet Only

(1)

Toilet & Bathroom

(2)

None

(3)

Q6. HOUSEHOLD ASSETS

6(a) Television-

Yes

(1)

No

(2)

6(b) Mobile Phone-

Yes	No
(1)	(2)

6(c) Vehicle-

Yes	No
(1)	(2)

6(d) Type & Number of Vehicle(s)-

(i) Two-Wheeler

1	2	2&Above
(1)	(2)	(3)

(ii) Four-Wheeler

1	2	2&Above
(1)	(2)	(3)

6(e) Fridge

Yes	No
(1)	(2)

6(f) Washing Machine

Yes	No
(1)	(2)

Q7. COOKING MEDIUM

Firewood	LPG Cylinder	Electric Cooker/Induction	Firewood & LPG
(1)	(2)	(3)	(4)
Firewood & Electric Cooker/Induction		All Three	
(5)		(6)	

Q8. SHOPPING PLACE

Inside the town/village	Outside the town/village	Both
(1)	(2)	(3)

Q9. MEDICAL CENTRE

Local PHC	Others
(1)	(2)

Q10. ANIMAL REARING

10(a) Do you rear animals?

Yes	No
(1)	(2)

10(b) How many variety of animals do you rear?

One	Two	More than Two
(1)	(2)	(3)

10 (c) Why do you rear animals?

Self-consumption	Local sale	As pet	All Three	Both consumption& Sale
7 (1)	(2)	(3)	(4)	(5)

B. Research Related Questions

Q11. What are the various types of agricultural methods practised by your community at present?

Q12. Have you heard of Riiza/Zabii?

Yes	No
(1)	(2)

Q13. Do you practise Riiza/Zabii?

Yes	No
(1)	(2)

Q14. Do you practise jhum cultivation?

Yes	No
(1)	(2)

Q15. Is there any change in type of machineries/tools used for agriculture since your parents' generation to date?

Yes	No
(1)	(2)

Q16. If yes, do you think that you have benefitted from these changes?

Yes	No
(1)	(2)

Q17. So at present which of the following forms of agricultural methods is closest to what you practise?

Traditional Form	Modern Form	Mixed Form
(1)	(2)	(3)

Q18. Have you heard about the concept of Sustainable Development?

Yes	No
(1)	(2)

Q19. If yes, what do you know about it?

Q20. If yes, which of the following according to you is closest to the concept of Sustainable Development?

Traditional Form of Agriculture	Mixed Form	Modern Form
(1)	(2)	(3)

Q21. Do you see any relationship between Development and Environment?

Q22. Do you see any relationship between Agriculture and Environment?

Q23. Which of the following according to you is most Environment Friendly Form of Agricultural Practice?

Traditional Form of Agriculture	Mixed Form	Modern Form
(1)	(2)	(3)

Q24. Are there other practices where traditional methods are applied other than agriculture?

Yes	No
(1)	(2)

Q25. If yes, can you please specify what are they?

Medicine	Salt-Making	Handicrafts/Handloom	Others
(1)	(2)	(3)	(4)

Q26. What according to you is the most important factor for development in your region at present times?

Education	Transport& Communication	Agriculture	Others
(1)	(2)	(3)	(4)

Q27. How much has your way of life changed in last twenty (20) years or so, may be from your childhood to date?

A lot/Drastically	A little	None	Others
(1)	(2)	(3)	(4)

Q28. What according to you has been the most important propeller of change in your community way of life over the years?

Education	Development	Religion	Others
(1)	(2)	(3)	(4)

Q29. How many Festivals does your community presently celebrate in a year?

One-Two	Two-Six	Six-Ten	More than Ten
(1)	(2)	(3)	(4)

Q30. Do you celebrate Agriculture Related Festivals?

Yes	No
(1)	(2)

Q31. Has the number of Festivals celebrated increased or decreased over years?

Increased	Decreased	Others
(1)	(2)	(3)

Q32. In either case, why so?

Q33. Which is the biggest Festival of your community?

Christmas	Sukrunyii	Others
(1)	(2)	(3)

Q34. Have you heard about State-Sponsored Development Schemes?

Yes	No
(1)	(2)

Q35. How much according to you has your community benefitted from State-Sponsored Development Schemes?

A lot	A little	Not at all	Don't Know
(1)	(2)	(3)	(4)

Q36. What according to you is the biggest challenge to Development at present in your region?

Corruption	Unemployment	Lack of Infrastructure	Others
(1)	(2)	(3)	(4)

Sample (Semi-Structured) Interview Schedule

PART 2

A. For Respondents from Sample 2

Q1. What is your main source of livelihood?

Q2. What are the different types of agricultural methods that you practise?

Q3. What are your views on jhum Cultivation?

Q4. What are the machineries and tools used in agriculture?

Q5. What would best describe present way of your community life —?

Traditional / Modern / Mixed / Others

Q6. Agriculture apart from horticulture is mostly at a subsistence level in your community, do you think it should remain so or do you feel need for commercialisation of agriculture?

Q7. What comes to your mind when you hear the word 'Development'?

Q8. Have you heard about the concept of ‘Sustainable Development’? If yes, what do you know about it and what is the source of information?

Q9. There are a plenty of signboards displaying information on different topics of ‘Environmental Awareness and Wildlife Conservation’ at different places in your village/town. What do you think is the importance of such signboards and who are involved in placing them?

Q10. Is there any noticeable change in the perception of ‘Development’ and ‘Well-being’ over passage of time? If yes, can you please explain these changes?

Q11. What according to you is the most important factor for Development in your region?

For those who answered Christianity – Like you have already mentioned, Christianity has shaped your lives in a tremendously positive manner over past seventy years, do you think any other religion apart from Christianity could have probably played a similar role?

Q12. What according to you are the changes directly resulting out of Christianity?

Q13. What are the various traditional practices followed by your community – agricultural and non-agricultural? Have these practices undergone any change over the years? If yes, can you please explain the changes and if your community has benefitted from such changes?

Q14. Have you heard of Riiza/Zabo or any other form of rain-water harvesting? If yes, do you practise it?

Q15. With an upward inclination in the number of young people migrating from villages/towns to cities/other states, how do you think would traditional practices be carried forward?

Q16. Do you receive any kind of training or other help from (a) Govt. departments and (b) NGOs?

Q17. In what ways has your community benefitted from State-Sponsored Development Schemes over past few years?

Q18. Have you noticed any significant change(s) in your community over a span of twenty to thirty years or so to say from your childhood to present times? If yes, please explain the change(s) and also mention whether you are happy or unhappy about it, stating why so.

Q19. Is there any change in the concept of Hygiene in your community over years? If yes, can you please explain with an example what kind of change have you witnessed?

Q20. Do you see any change(s) in the nature of work performed by women in your community over the years? If yes, please explain.

Q21. Do you think that women are engaged in more multi-tasking compared to men in your community? If yes, please cite examples.

B. Additional Questions For Respondents in Traditional Salt-Making Site (Sample2)

Q1. What is the source of water for making traditional salt?

Q2. Please explain the method of traditional salt production.

Q3. What are your working hours?

Q4. Are you also engaged in any other occupation apart from this?

Q5. Salt is an easily available commodity and not highly priced, so then why do you practise this immensely laborious traditional method of local salt production? Where do you sell this product?

Q6. Has this salt been tested in any laboratory proving its health benefits?

Additional Questions for Respondents in Kikruma Village (Sample 2)

Q1. Kikruma is known for its water harvesting system 'Zabo'. What is Zabo?

Q2. What is Ruza and how does it differ from Zabo?

Q3. Water crisis is a serious global problem today so do you think traditional water harvesting methods like Ruza should be practiced in other places as well?

Q4. The use of power tillers is a common sight in your village compared to many other villages where people held hilly terrain responsible for the less use of this modern machinery; what do you think is the reason behind high use of this machine in your village?

C. For Respondents from Sample 3

Q1. What do you think about development in the context of indigenous communities of Phek district?

Q2. Do you see any co-relation between development and environment? What are your views on sustainable development?

Q3. What is the role of science or that of scientific knowledge in traditional practices of the natives?

Q4. What are your views on traditional rain-water harvesting practised in certain areas of Phek district? What do you think about its replicability in other areas?

Appendix B

PHOTOGRAPHS FROM FIELDWORK



Figure B.1: Traditional Ruza (Rain-water harvesting ponds) in Kikrumba village

Source: Taken by researcher during fieldwork



Figure B.2: A signboard by Kikruma Students' Union show casing environmental concern

Source: Taken by researcher during fieldwork



Figure B.3: Traditional handloom Weaving by a female respondent.

Source: Taken by researcher during fieldwork



Figure B.4: Traditional Salt-making site in Meluri subdivision

Source: Taken by researcher during fieldwork



Figure B.5: Traditional Salt-cakes

Source: Taken by researcher during fieldwork



Figure B.6: Jhum fields post-burning

Source: Taken by researcher during fieldwork



Figure B.7: Terrace fields

Source: Taken by researcher during fieldwork



Figure:B.8: Training session organised by KVK

Source: KVK, Phek



Figure B.9: An old female farmer in the field

Source: Taken by researcher during fieldwork



Figure B.10: Cutting and Distribution of Mithun for Traditional Marriage Feast

Source: Taken by researcher during fieldwork