Evidence-based Initiatives of FIAN Nepal on Right to Food
Policies, Programmes & Practices in Nepal

Food-first Information and Action Network (FIAN) Nepal
Evidence-based Initiatives of FIAN Nepal on Right to Food
Policies, Programmes & Practices in Nepal

Editors:
Prof. Dr. Keshab Khadka
Basant Adhikari
Nirmal Gadal
Buddhi Ram Chaudhary
Mabin Ghale

Food-first Information and Action Network (FIAN) Nepal
Published by:
Food-first Information and Action Network (FIAN) Nepal
Kupondole, Lalitpur, P.O. Box: 11363
Tel.: +977-1-5011609, 5527152, 5527650
Fax: +977-1-5527834
Website: http://www.fiannepal.org
Email: info@fiannepal.org

Disclaimer:
The information and opinions presented in the research studies are entirely of the writers and do not necessarily reflect the official views and opinions of FIAN Nepal to which the writers are affiliated.
Acknowledgement

FIAN Nepal has identified six thematic areas towards strengthening right to food movement in Nepal. They are: 1. food and access to natural resource and services, 2. right to water (inclusive of access to irrigation, water privatization distortions and access to safe drinking water), 3. agricultural inputs (i.e., seeds, fertilizers, government services, resource mobilization), 4. women/marginalized sections/Dalits, 5. extra territorial obligations, and 6. food aid and labour (farm labour and diaspora). Since its establishment, FIAN Nepal is exploring these thematic areas and advocating for the protection and promotion of human right to food, with specific focus on vulnerable people and communities of Nepal. In this process, FIAN Nepal has pursued evidence-based analyses on the above thematic areas either by making use of case studies or researches, the results of which are compiled here – as research works on **Food Aid, Access to Natural Resources, Seed Policy, and Climate Change**. These reports are FIAN Nepal’s initiatives to explore the situation as it is, identify the gaps and make appropriate recommendations therein. Several experts and individuals have supported to bring this report in this form. Particularly, the contributors for research work, Ms. Basudha Gurung, National Program Advisor and Mr. Ganga Acharya, Program Coordinator deserve great appreciation for initiating these studies and for her contribution to finalize these studies. Mr. Somat Ghimire, Mr. Jailab Kumar Rai, Dr. Krishna Prasad Poudel, Dr. Laya Prasad Upreti, Mr. Basudev Regmi, Mr. Madan Thapa, and Ms. Prakriti Kasyap have played instrumental roles in this regard. Hence, they deserve special thanks from FIAN Nepal.

These research reports went through extensive editing and formatting for publication in this form. It has been possible through the collective efforts of the editorial team, FIAN Nepal’s members and staffs. Otherwise, it would not have been possible to bring this publication at its present format without the painstaking support of all the above members in such a short time frame. Therefore, I would like to thank them who extensively contributed to hatch this maiden volume of research reports.

Ms. Sabine Pabst, Dr. Ana María Suárez Franco of FIAN International also deserve special thanks for supporting us in different ways shaping the research study and improving the report. The financial support from our partners, the EED/Bread for the World and Misereor Germany are highly appreciated in this regard.

Finally, FIAN Nepal acknowledges the dedication and contributions of all involved in the course of this noble task. Hope to receive your constructive suggestions to improve our future publications.

Thank you,

Dr. Sarba Raj Khadka
Chairperson
Foreword

Right to Food was buzz word in Nepal amongst human rights activists during early 1990s as ensuing aurora of new found democracy ushered with Government’s commitment to International Covenant on Economic, Social and Cultural Rights, 1966. The then Prime Minister Mr. Krishna Prasad Bhattarai had courageously ratified the ICESCR on 14 May 1991 (31 Baisakh 2048) amidst wide disagreement and tense debate that whether it was advisable to add “extra burden on fledgling democracy”. Of course, this noble event proved seminal to invoke series of new initiatives on promoting and protecting right to food that culminated the surging tide of civil society protest during World Food Summits in 1996 itself against food security approach based on profit hungry markets, more pronouncedly in 2002 at WF5 +5. Actually, the commitments of MDGs to halve the hunger toll populace across the globe by 2015 (now a mockery!) dazzled the human right to adequate food activists in those last years of 20th century promoting both national and international interests.

Taking into account of Nepal’s commitment to international human rights norms and standards, FIAN Nepal has commissioned research studies on four issues that contribute the realization of human right to food in Nepal. The four studies on Food Aid, Access to Natural Resources, Seed Policy, and Climate Change presented here cover thematic concerns having direct bearing on hunger and food and as diverse as the legal and delivery mechanisms, the food aid, access to natural resources, seed and breed perspectives, and climate change. These topical issues are extensively explored in the emerging socio-political contexts of Nepal and Nepalese society in a much disaggregated manner focusing on innocent yet affected people, the ultimate right holders. At a time when zero-hunger/zero-poverty agenda finds all pervading features of Post-MDGs framework, these Nepalese replica may showcase some examples to generalize broader development agenda across poor and low-performing developing world. FIAN Nepal nurtures a conviction that zero-hunger world requires fundamental paradigm shift: poor and disgraced as right holders and the state as well as the political stalwarts as duty-bearers. The required shift in value system and principles thereof include rights, equality, justice, peace, sustainability and partnership for development not in the lip-service fashion but through increased responsibility. It has already been high time to delve in general value premises: freedom, equality, solidarity, tolerance, respect for nature and shared responsibility. Truly, the justice delivery needs definite targets and measurable and verifiable indicators, both outcome indicators and process indicators. FIAN Nepal will feel highly encouraged if this maiden effort goes serviceable, however, insignificant it may be, in this process. We humbly welcome and are committed to remain grateful to our valued readership for comments and suggestions for our guidance.

– the editors
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Impact of Food-Aid on Livelihoods and Food Security: A Human Right to Food Perspective

Abstract

Nepal is one of the least developed countries in the world and has been receiving food aid for several decades. The impact, performance and effectiveness of food aid schemes in Nepal have been continuously under debate among development planners, political actors and social activists. There is no doubt that food aid, if placed adequately, can clearly impact the right to food in at least during emergency situations. It will enable state to fulfill obligations to fulfill right to adequate food. However, food aid in western hill district has been criticized as it has increased dependency syndrome on food. This study conducted by Mr. Somat Ghimire has reviewed existing food aid programs implemented by government of Nepal through Nepal Food Corporation, Program implemented by World Food Program and other International food aid agencies and tried to examine existing food aid programme in the right to food perspectives. The study was conducted through field observation, focus group discussion and interview of key informants. This study has reveled realistic picture of impact of food aid and also identified several points for improvement on existing food aid related program modalities, approaches and strategies of food aid program to contribute for sustainability of local agricultural system. We hope, summery of the study published as this article will be interesting and useful for the readers. Let careful readers judge it. We simply like to thank Mr. Somat Ghimire who successfully conducted this study during 2011. For full report, plz, visit FIAN Nepal website: fiannepal.org -Editors)

1. Introduction

Food aid is regarded as one of the oldest forms of international support lent to the least developed countries particularly during times of severe food crisis. Food aid has been credited with saving millions of lives that have been plunged into serious humanitarian crisis as a result of catastrophic natural and manmade disasters such as earthquake, flooding, hurricanes, wars and violent conflicts all over the world.

On the other side, International food aid, though apparently a benevolent response to the hungry masses, is frequently criticized by observers as it is considered to be one of the most complex, controversial and misunderstood instruments of foreign policy. Critics argue that international food aid has several flaws in principle and practice.
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resulting mostly in adverse effects, rather than promotion of the right to food. However, for those who are unfamiliar with the complexities associated with food aid, it simply means temporary humanitarian assistance to the victims of natural and other disasters such as floods, drought-induced famines, civil war, etc.

Nepal is one of the least developed countries in the world and has been receiving food aid for several decades. Nepal received food aid deliveries as early as the mid-1950s under a bilateral agreement between the Government of Nepal and the Government of the USA, though there was no recorded food crisis situation in the country at the time\(^1\). Regular food aid, however, began in the early 1970s, with the first reported famine due to drought and attacks of locusts in cereal crops in the Jumla district in 1972. At that time the Nepalese government also started to provide subsidized food to people in remote hilly districts,\(^2\) which still continues today.

The impact, performance and effectiveness of food aid schemes in Nepal have been continuously under debate among development planners, political actors and social activists. There are clearly three schools of thought with respect to the effectiveness of food aid:

One school of thought simply highlights the positive contributions of food aid in disaster relief and in assisting poor households to create a sustainable foundation for their livelihoods.

In contrast, second streams of thinking argue that food aid has been ineffective and has produced dismal results, failing to alleviate hunger problems in Nepal. In theory, food aid means ensuring people’s right to food, but in practice, it undermines the right to food of people by creating a disincentive effect in local agricultural systems and by producing dependency syndrome among rural communities. The possibility of creating dependency on the part of food aid recipient communities is the foremost concern of many critical observers all over the world as food aid creates short-term incentives for the recipients at the cost of longer term-strategies for sustainable food security- on the household (micro) level, the district/regional (meso level), as well as the national level (macro level). Additionally, there are concerns about misuse of this external assistance by the local elite and reinforcement of existing unjust social structures of power at the local level. In this line, critical analysts strongly contend that in addition to providing food in emergencies and saving the lives of the victims, in some cases the nature and process of current food aid practices is also violating the right to food.

Representatives of the third thinking school, between these two views, are those who recognize the positive contributions of food aid in reducing food insecurity, but also advocate for alternative and improved strategies to making food aid schemes more effective, through complementary middle and short term strategies to ensure that food aid recipients recover their food autonomy.

Despite the obligations of the state under the human right to food, the picture of food and nutrition security situation of Nepal is grim. Recent estimates show that more than a quarter (7 million) of the total population of Nepal is forced to go bed hungry every night\(^3\). Nearly 40% of the children below the age of five suffer from malnourishment,

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1 Khadka, 1989
2 Adhikari, 2008
3 National Planning Commission, 2010
particularly protein-energy malnutrition\textsuperscript{4}. Infant and under-five mortality rates are high, at 41 and 50 per 1000 live births respectively. Life expectancy at birth is 64.1 years (Table 1). More than 25% of the total population fails to earn sufficient income to feed themselves falling below the national poverty line (NRs 7696/- per person per year)\textsuperscript{5}.

Table 1: Key demographic features of Nepal\textsuperscript{6}  

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Population size (millions)</td>
<td>27.5</td>
</tr>
<tr>
<td>Life expectancy at birth (year)</td>
<td>64.1</td>
</tr>
<tr>
<td>Population below national poverty line (per cent)</td>
<td>25.4</td>
</tr>
<tr>
<td>Underweight children aged &lt;five years (per cent)</td>
<td>38.6</td>
</tr>
<tr>
<td>Under-five mortality rate (per 1,000 live births)</td>
<td>50</td>
</tr>
<tr>
<td>Infant mortality rate (per 1000 live births)</td>
<td>41</td>
</tr>
<tr>
<td>Maternal mortality ratio (per 100,000 live births)</td>
<td>229</td>
</tr>
</tbody>
</table>

There is no doubt that food aid, if placed adequately, can clearly affect the right to food in at least three ways during emergency situations. It can save lives in emergencies such as floods, earthquakes, displacements due to conflicts, etc., through direct provision of food under adequate sanitary conditions which allow food to be nutritious, thereby fulfilling (providing) the right to food for those who in the specific post-catastrophe time are not able to feed themselves. States must comply with their obligations to provide disaster relief and humanitarian assistance in times of emergency where food aid can play a crucial role. It can save people in situation of vulnerability from being forced to sell their assets during such a period and thus help to build sustainable livelihoods, thereby fulfilling (facilitating) the right to food. Similarly, it can insulate the poor from fluctuations in food prices during the crisis period and can avoid social confrontations in the struggle for scarce food.

However, in most cases, food aid is associated with adverse consequences. According to critical voices, International food aid essentially serves the interests of domestic agricultural policy, development assistance, and the foreign and trade policies of the donor countries\textsuperscript{7}. Aid is managed through bilateral and multilateral agencies with heavy involvement of NGOs as well as profit-seeking agencies involved in agribusinesses and shipping sectors. A complex constellation of interests of these multiple actors underpins the core policies of international food aid. Consequently food aid has constantly been under scrutiny by social activists, policy makers and food aid analysts all over the world, despite its proven ability to save millions of lives, especially in emergency situations.

For most observers, food aid is purely a donor-driven response, serving the interest of the donor countries rather than the food security needs of recipients. Therefore, in several cases it is argued that food aid creates “dependency” of recipient communities/countries, allowing them to neglect their own responsibility for achieving food security within their own context rather than actually promoting the right to food. Mostly, food aid practice has been excessively top-down and insufficiently informed by the actual situation and views of the ultimate beneficiaries\textsuperscript{8}.

Development experts in Nepal and elsewhere have long been concerned with the unintended consequences of imported food aid in recipient countries associated with

\textsuperscript{4} Ibid
\textsuperscript{5} World Food Program, 2009a
\textsuperscript{6} National Planning Commission, 2010
\textsuperscript{7} Barrett & Maxwell, 2005
\textsuperscript{8} Food and Agriculture Organization (FAO), 2006
labor and production disincentives, induced changes in food consumption behavior of people, and changes in natural resource use patterns, which in aggregate have undermined local farming potential, making communities more vulnerable to food insecurity\textsuperscript{9}. However, serious studies analyzing the nature of the nexus between food aid and dependency and associated impacts on local livelihoods from a human right to food perspective insufficient in Nepal.

Against this backdrop, this study intends to analyze the implications of food aid to the agriculture-based rural economy of Nepal from a human rights perspective, seeking to ascertain if current food aid policies and practices contribute to the progressive realization of the human right to adequate food in Nepal. The study is focused on analyzing the effect of food aid on local agricultural production systems, changes in food habits of local communities and related consequences or implications, as well as the governance of food distribution at local level. The study adopts a human rights-based approach to assess the food aid policies and practices in Nepal discussing selected districts and communities. The Voluntary Guidelines to Support the Progressive Realization of the Right to Adequate Food in the Context of National Food Security\textsuperscript{10} adopted by FAO in November 2004 apply a human rights lens to food aid. The food aid related guidelines of this document are taken as the guiding principle for the assessment.

2. International Food Aid

It is difficult to define food aid succinctly. However, Barrett and Maxwell’s definition is widely accepted. They define international food aid as the provision of food commodities for free or on highly concessional terms to individuals or institutions within one country by foreign donors\textsuperscript{11}. Food aid is commonly but inaccurately perceived in the simplistic terms of donating food to a hungry population.

Contemporary international food aid was initiated by the USA and Canada in the early 1950s, following large surpluses of cereals induced by price support policies for agricultural commodities in these two countries. The disposal of surpluses through food aid became imperative for North American producers, not only to reduce the storage costs of the grains, but also to open up new overseas markets for their farm produce.

Moreover, food aid served as a foreign policy tool in the Cold War era against the Soviet Union with food being used to support strategic countries. Until the mid-1960s the United States and Canada were essentially the only donors of international food aid. However, from the late 1960s on, the European Union (i.e. the European Commission and the member states of the European Union) also emerged as a significant food aid donor with massive surpluses of wheat and animal products generated through a combination of farm price supports and barriers in food imports under the provisions of the Common Agricultural Policy (CAP) of European nations. Food aid from the US and EU comprise almost 80% of the total international food aid today; the US being the largest donor contributing nearly 60% of the total. The remaining share comes from a number of smaller donors including Canada, Japan, Australia, China and Korea.\textsuperscript{12}

\textsuperscript{9} See Khadka, 1989 and Adhikari, 2008
\textsuperscript{10} Available at http://www. fao.org/docrep/meeting/009/ y9825e/ y9825e00. HTM (last accessed on 14 November 2010)
\textsuperscript{11} Barrett & Maxwell, 2005
\textsuperscript{12} Mousseau, 2005 Commission, 2010
Thus the history of food aid clearly shows that it was primarily initiated as a result of agricultural, trade and foreign policy interests of developed western countries, rather than as a tool for fighting hunger and food insecurity around the world. However, the policies and practices of food aid have evolved greatly during the last 50 years, incorporating humanitarian concerns and focusing more on the needs of recipient countries. Nonetheless, the basic interests of the donors remain in play even today, as the flow of international food aid is negatively correlated with the international prices of food grains\textsuperscript{13}. As food aid flow increases with the low prices and high level of grain stocks in developed countries, in our opinion the main motive of food aid still seems to be the domestic support of farmers and agribusiness interests of the donor countries (Mousseau, 2005; Adhikari, 2008; Barret & Maxwell, 2005).\textsuperscript{14} In our opinion, international food aid, a seemingly benevolent response to the people in crisis also induces suspicion that the humanitarian face is merely a moral appeal to cover inherently objectionable corporate interests.

3. Types of Food Aid

Generally, international food aid is commonly classified into three categories according to the way donors provide it to recipient countries, i.e. through program, project or emergency operations\textsuperscript{15}.

3.1 Program Food Aid

Program food aid which was predominant in international food aid, is usually provided by the donor countries to the recipient in the form of food aid in-kind economic assistance either in the form of a loan or grant. Under this modality, generally the recipient governments sell the food items received as international support in local markets and generate cash to overcome the balance of payment problems. Contrary to common belief, program food aid has no direct relation to the food insecurity problems of the recipient countries. It is also not targeted towards specific vulnerable populations. Rather, program food aid is more concerned about the macroeconomic stability of the nation\textsuperscript{16}. Food assistance from the government of Japan to Nepal essentially falls under this category.

3.2 Project Food Aid

Project food aid is provided on a grant basis in order to support specific development activities like road and community structure construction. This type of food aid may be channeled either through multilateral agencies like the World Food Program of the United Nations, through NGOs or bilaterally.\textsuperscript{17}

Project food aid usually operates in two different ways. (i) food commodities are distributed directly to vulnerable groups in exchange for their labor works through Food-for-Work (FFW), or sometimes Cash-for-Work (CFW) projects or through mother and
child feeding centers or school-feeding programs as a human resource development project (ii) the food commodities are sold in local markets to generate money (called monetization), which is used for a wide range of poverty reduction and food security projects.\textsuperscript{18}

Food-for-Work, or Cash-for-work (CFW), are labor-intensive infrastructure works undertaken by the vulnerable population or community in exchange for food grain and/or cash. The infrastructure then constructed, such as roads, foot trails, school buildings, health posts, wells or irrigation canals are expected to contribute to the sustainable development of the community.\textsuperscript{19} Most of the food aid schemes handled by the World Food Program (WFP) of the United Nations in Nepal fall under this category.

### 3.3 Emergency or Humanitarian Food Aid

Emergency, relief or humanitarian food aid is directly provided to the victims of natural or manmade disasters with the intention of immediate relief. In the past this form of food aid was mainly used as a life-saving short-term response, however in recent years it has been extended to include continuing humanitarian assistance, like the Protracted Relief and Recovery Operations (PRROs)\textsuperscript{20} of WFP in Nepal, which has been in operation since 2006.\textsuperscript{21}

Another way of distinguishing different types of food aid is based on the source of supply of the food commodities. There are three sourcing categories of food items delivered as food aid:

(i) **Direct transfers** – all food items originate from a particular donor country; which is the main feature of international food aid operations in Nepal

(ii) **Triangular transfers** – items are purchased or exchanged in one developing country for use as food aid in another country; and

(iii) **Local purchases** – food items are procured in a country and used as food aid in the same country.\textsuperscript{22} In Nepal, normally local purchases are not in practice in international food aid operations.

### 4. Food Aid and the Right to Food: Framing the Debate

The world is currently able to produce more than enough food to provide every individual with an adequate diet to lead a healthy, active and productive life. Yet, more than one sixth of the total population of the world do not have enough to eat and are undernourished as of 2010\textsuperscript{23}. The co-existence of hunger within a world of plenty is thus one of the gravest paradoxes of our time.

In situations of systematic hunger, the international community is obliged to provide emergency support to ensure that the affected people do not starve. At the same time, national governments are expected to use the maximum resources available to make sure that their citizens do not die of starvation. Article 2 of the International Covenant on Economic, Social and Cultural Rights affirms that the international community is obliged to support national governments in many ways - food aid being

\textsuperscript{18} Harvey et al., 2010, pp. 10-13

\textsuperscript{19} Bishokarma, 2012

\textsuperscript{20} OECD, 2006

\textsuperscript{21} Bishokarma, 2012, p. 5

\textsuperscript{22} Ibid

\textsuperscript{23} FAO, 2010
one option—when said national governments are unable to help their people due to lack of resources, capacity or available food stuffs in a situation beyond their control. The Extra-territorial state obligation (ETO) also clearly states that all States must take action, separately, and jointly through international cooperation, to respect, protect and fulfill to economic, social and cultural rights of persons within their territories and extraterritorially.24

In light of the international human rights instruments, food aid is considered one of the obligations of the international community.25 However, caution should be taken when using food as international aid. The Voluntary Guidelines to support the progressive realization of the right to adequate food in the context of national food security adopted by the FAO clearly set out roles, responsibilities and obligations of the donor and recipient governments and other relevant stakeholders while using this aid to promote the right to food (box:1). Donors’ food aid policies should not undermine national government’s efforts to ensure food security in their own context and food aid should not be a permanent fixture.

Despite these provisions, international food aid has largely been used as a political tool to serve the corporate, economic and political interests of countries in the global north, rather than focusing on addressing the food insecurity of the underdeveloped global south on a sustainable basis. As a result, there are unintended impacts on the livelihoods of the hungry masses26.

Box: 1

GUIDELINE 15: International Food Aid

15.1 Donor States should ensure that their food aid policies support national efforts by recipient States to achieve food security, and base their food aid provisions on sound needs assessment, targeting especially food insecure and vulnerable groups. In this context, donor States should provide assistance in a manner that takes into account food safety, the importance of not disrupting local food production and the nutritional and dietary needs and cultures of recipient populations. Food aid should be provided with a clear exit strategy and avoid the creation of dependency. Donors should promote increased use of local and regional commercial markets to meet food needs in famine-prone countries and reduce dependence on food aid.

15.2 International food-aid transactions, including bilateral food aid that is monetized, should be carried out in a manner consistent with the FAO Principles of Surplus Disposal and Consultative Obligations, the Food Aid Convention and the WTO Agreement on Agriculture, and should meet the internationally agreed food safety standards, bearing in mind local circumstances, dietary traditions and cultures.

15.3 States and relevant non-state actors should ensure, in accordance with international law, safe and unimpeded access to the populations in need, as well as for international needs assessments, and by humanitarian agencies involved in the distribution of international food assistance.
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15.4 The provision of international food aid in emergency situations should take particular account of longer-term rehabilitation and development objectives in the recipient countries, and should respect universally recognized humanitarian principles.

15.5 The assessment of needs and the planning, monitoring and evaluation of the provision of food aid should, as far as possible, be made in a participatory manner and, whenever possible, in close collaboration with recipient governments at the national and local level.

According to the information obtained by FIAN Nepal food aid in practice often lacks social justice so that the poor and marginalized section of communities such as women, elderly, dalit groups who are in dire need of food are often discriminated against in access to aid resources. Most importantly, there are debates regarding whether food aid is the appropriate intervention to tackle perennial problems of food shortages and hunger in the hills of Nepal. In fact, international food aid is typically expected to assist communities that suffer from transitory food insecurity problems which affect households occasionally and temporarily but require immediate attention to save them from collateral damage.

5. Overview of Food and Nutrition Security in Nepal

Nepal is one of the least developed countries in the world with more than 80% of the population living in rural areas. It ranks as number 144 out of 188 countries in the Human Development Index.\textsuperscript{27} The country is characterized by marked diversities in agro-ecological conditions and resource endowments. With an area of about 14.7 million hectares, Nepal has three distinct ecological and geographical settings ranging from a cold high mountainous region in the north, a subtropical hilly region in the center, and a hot and humid plains area - the terai - in the south stretching from east to west.

The hilly central region occupies about 42% of the total area and accommodates 45% of the total population\textsuperscript{28}. The southern plains region-terai- accounts for about 23% of the total land area and bears 48% of the total population\textsuperscript{29}. The remaining 7% of the total population resides in the mountains and covers 35% of the total land mass of Nepal. The three agro-ecological regions differ markedly in climatic conditions, land-use patterns, soil types, production potentialities, social and cultural patterns of peoples, ways of life and farming practices.

As predominantly a rural country, the importance of the agriculture sector can hardly be exaggerated, especially when coping with the hunger and malnutrition problems. Nearly 74\% of working adults are employed in agriculture\textsuperscript{30} and its contribution to the GDP figures around 32\%\textsuperscript{31}. However, the sector has stagnated for a long time, performing below expectation, despite being a priority sector in successive periodic plans. The agriculture sector has faced problems of sluggish growth of less than 3\% annually for nearly two decades, while the population growth of the country remained
more than 2% over the same period, making it increasingly difficult to meet internal food demand through local production.

Consequently, as of 1986, Nepal converted from a long history as a food exporter to a net food importer. Agricultural sector growth is estimated to be 1.1% in the current fiscal year 2009/10\textsuperscript{32}. For the current year, the national edible cereal food balance is estimated to be a deficit of 316465 MT\textsuperscript{33}, by far the largest deficit over the past decade\textsuperscript{34}. Thirteen out of 16 mountain districts and 21 out of 39 hill districts have continuously been food deficit for several years. Currently, it is estimated that some 40 percent of the population does not have access to the minimum calorie requirement, with a higher proportion in the mountain regions (45 percent) followed by hills (42 percent) and the terai (37 percent)\textsuperscript{35}. Persistent problems of food and nutrition insecurity in Nepal largely bear the structural (socio-cultural, political and technical) characteristics framing the availability, access, utilization and stability dimensions of right to food.

In an agrarian economy, land is the most important asset for food security. Unfortunately, land ownership in Nepal is extremely skewed and varies significantly across regions. More than 55% of farm families are either landless or marginal cultivators holding less than 0.5 ha of cultivable land (Table 2). Over 70% of peasants operate on less than one hectare of land\textsuperscript{36} while the majority of the fertile land in the country is held by absentee landlords who principally derive their living by means other than farming.

Table 2: Distribution of land in Nepal\textsuperscript{37}

<table>
<thead>
<tr>
<th>Farm families types</th>
<th>Number</th>
<th>Land holding size/family</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Landless</td>
<td>287100</td>
<td>0.0-0.1 ha</td>
<td>10.13</td>
</tr>
<tr>
<td>Marginal cultivators</td>
<td>6,70,000</td>
<td>0.1-0.3 ha</td>
<td>23.63</td>
</tr>
<tr>
<td>Small farmers</td>
<td>6,48,000</td>
<td>0.3-0.5 ha</td>
<td>22.86</td>
</tr>
<tr>
<td>Medium farmers</td>
<td>1113560</td>
<td>0.5-3.0 ha</td>
<td>39.92</td>
</tr>
<tr>
<td>Big farmers</td>
<td>93700</td>
<td>3.0-10.0 ha</td>
<td>3.33</td>
</tr>
<tr>
<td>Very Big farmers</td>
<td>3800</td>
<td>&gt;10 ha of land holding</td>
<td>0.13</td>
</tr>
</tbody>
</table>

Land is the key asset shaping socio-economic power configuration in the rural setting where more than 80% of the population resides. Nearly 96% of a total of 7 million hungry poor lived and worked in rural areas of Nepal in 2009\textsuperscript{38}. The rural society is highly stratified in terms of caste, class, gender, ethnicity, language and cultural patterns as well as spatial exclusion creating unequal citizens. People from underprivileged groups such as dalits, marginalized indigenous peoples and others have limited access not only to productive land but also to other income opportunities making them persistently vulnerable to food insecurity. More recently, the United Nations World Food Program (WFP) ascribes the critical food situation of the country to the intersection of three crises: The World Food Crisis, the International Economic Crisis, and the Climate Change Crisis\textsuperscript{39} which are compounded with the already existing structural crisis of the country.

To summarize, food insecurity and violations of the right to food in Nepal are thus mainly attributable to the product of three interrelated factors-(i) the historical effect of unequal distribution of land resources and socio-economic status due to caste, ethnicity and gender related biases; (ii) inequities born of recent development initiatives and spatial exclusion; and (iii) unsatisfactory agricultural growth and aggregate outputs in the economy\textsuperscript{40}.

\textsuperscript{32} Ibid
\textsuperscript{33} Preliminary estimate of the Ministry of Agriculture Development (May 2010)
\textsuperscript{34} WFP, 2010b
\textsuperscript{35} Ibid
\textsuperscript{36} Central Bureau of Statistics (CBS), 2009
\textsuperscript{37} HLCSLR 2010
\textsuperscript{38} CBS 2009
\textsuperscript{39} WFP, 2009c
\textsuperscript{40} Pandey, 2000
6. Food Aid: In Response to Food Insecurity

Violations of the right to food in Nepal are largely related to the chronic socio-economic and political problems engulfing particularly the resource-poor and excluded section of the Nepali society. However, food aid which is basically triggered as a standard response to emergency food crises (such as flood and landslides victims) has become an institutionalized response to tackle hunger problems in Nepal. Food aid, particularly the ‘rice aid,’ has been one of the most prominent and regular responding measures to this perennial problem especially in the upper hills and Himalayan regions of the country. International food aid was systematically introduced in Nepal as a response to food insecurity following a major food crisis during 1972-74 in the western mountains of Nepal41. However, the history of food aid deliveries in Nepal dates back to mid 1950s when the USAID launched a food aid program following a bilateral agreement between the Government of Nepal and the government of the United States of America in 195242.

The northern hilly districts in the middle and far western regions of the country are permanently food insecure zones due to limited availability of cultivable lands and difficult terrain. According to the respondent of Dailekh district, before the introduction of subsidized rice in the region, local people had very strong and viable exchange entitlements which has been seriously compromised and weakened in recent years. In the past, people produced niche commodities like beans, potatoes, buckwheat, chili, fruit, wool products, wood crafts, etc. and collected medicinal herbs and wild foods which they exchanged for food grains produced in the lower hills. In addition to this, they exchanged their products for salt in Tibet which was also exchanged for food in the lower belt (see box 2).

This tradition is no longer in practice today. A number of factors contributed to weaken this long held institution. Since the introduction of community forest management practices in the 1990s, local communities prevented sheep caravan carrying goods for trade to pass through their forest areas resulting in limited mobility. According to study findings, Bhote Indigenous People of Bajura are facing problems of grazing their sheep in community forest during transportation of goods due to the high charge for grazing. The study also revealed, that increasingly, only rice is being considered as food thereby gradually replacing the local production (see box 2). Furthermore, the flooding of various goods into the market resulting from integration of the regions, has created more competition in exchange and trade for these poor villagers.

Box: 2

Endogenous Livelihood Strategies Are Weakened

“In the past, we had our own strategies to cope with the shortages of food. We used to adopt various trade-related activities which enhanced our exchange entitlements. We produced goods like beans, fruits, potatoes, chili, woolen blankets, wooden crafts, etc. We also collected various herbs and wild foods and fetched salt from Tibet which we used to exchange with food grains produced at lower hills. We used to export wooden crafts and herbs to Tibet in the past and bring salt from there which we used to sell or exchange for rice with people at lower hills. But now we do not have this practice anymore.”

A respondent of Mugu

41 Khadka, 1989, pp 155-166.
42 Ibid
They also did not receive any support from state or other agencies to advance their traditional coping strategies nor were they offered any sustainable alternative means.\textsuperscript{43} Rather the government and the World Food Program of the United Nations chose to provide rice from outside at a subsidized rate to tackle the perennial food deficiency problem of the region. Huge amounts of aid money have been spent just to subsidize transportation costs (air lifting) of imported rice from plain areas of the southern part of the country to the remote north since 1970s. Consequently, ‘the dependency on rice has been growing, and so is the food insecurity’ as a local teacher at Luma in Ruga VDC of Mugu remarks. Table 3 below gives an overview of the different types of international food aid received by Nepal during the last two decades.

The table clearly shows that international food aid deliveries in Nepal have been continuously increasing following relatively low supplies of around 10 thousand tons in 1990 to more than 56 thousand tons in 2009. However, food aid can not be taken as sustainable solution to chronic food insecurity, as shown by the pattern of declining per capita food production particularly in the hills and mountains of the country since late 1960s\textsuperscript{44}.

Table 3: Different types of Food aid flow in Nepal\textsuperscript{45}

<table>
<thead>
<tr>
<th>Year</th>
<th>Food Aid Deliveries (Metric Tons) by Types</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Emergency</td>
<td>Program</td>
</tr>
<tr>
<td>1988</td>
<td>404.0</td>
<td>7,431.0</td>
</tr>
<tr>
<td>1989</td>
<td>2,500.0</td>
<td>0.0</td>
</tr>
<tr>
<td>1990</td>
<td>0.0</td>
<td>1,250.0</td>
</tr>
<tr>
<td>1991</td>
<td>0.0</td>
<td>1,100.0</td>
</tr>
<tr>
<td>1992</td>
<td>9,829.0</td>
<td>2,200.0</td>
</tr>
<tr>
<td>1993</td>
<td>31,001.4</td>
<td>9,338.0</td>
</tr>
<tr>
<td>1994</td>
<td>22,443.1</td>
<td>6,144.4</td>
</tr>
<tr>
<td>1995</td>
<td>20,000.2</td>
<td>14,250.0</td>
</tr>
<tr>
<td>1996</td>
<td>21,602.1</td>
<td>6,000.0</td>
</tr>
<tr>
<td>1997</td>
<td>19,431.6</td>
<td>4,000.0</td>
</tr>
<tr>
<td>1998</td>
<td>22,888.2</td>
<td>4,000.0</td>
</tr>
<tr>
<td>1999</td>
<td>16,630.6</td>
<td>24,299.0</td>
</tr>
<tr>
<td>2000</td>
<td>22,451.3</td>
<td>3,970.0</td>
</tr>
<tr>
<td>2001</td>
<td>14,981.7</td>
<td>9,267.0</td>
</tr>
<tr>
<td>2002</td>
<td>22,211.9</td>
<td>0.0</td>
</tr>
<tr>
<td>2003</td>
<td>18,014.0</td>
<td>0.0</td>
</tr>
<tr>
<td>2004</td>
<td>17,885.0</td>
<td>7,950.2</td>
</tr>
<tr>
<td>2005</td>
<td>21,161.8</td>
<td>19,752.0</td>
</tr>
<tr>
<td>2006</td>
<td>23,239.3</td>
<td>5,545.0</td>
</tr>
<tr>
<td>2007</td>
<td>34,527.3</td>
<td>5,250.0</td>
</tr>
<tr>
<td>2008</td>
<td>49,041.9</td>
<td>21,277.0</td>
</tr>
<tr>
<td>2009</td>
<td>43,554.1</td>
<td>9,660.0</td>
</tr>
<tr>
<td>Total</td>
<td>433,798.5</td>
<td>162,683.6</td>
</tr>
</tbody>
</table>

The government run Nepal Food Corporation (NFC) and World Food Program (WFP) of the United Nations are the two major agencies that handle food aid in Nepal. Now let’s turn to briefly discuss the operations of these two major actors.
6.1 Nepal Food Corporation (NFC)

Although institutionalized public responses to food insecurity problems seemingly started in the late 1940s, the present form of NFC was established in 1974 under the Corporate Act of Nepal. NFC has a clear mandate to distribute subsidized food in deficit areas, mainly in hill and mountain districts, among others. The NFC currently provides rice to people in 30 remote districts of the hill and mountain regions of the country. The major part of the rice handled by the NFC is received through bilateral food aid program from the government of Japan. Japanese bilateral food assistance is guided by the basic objective of enabling the Government of Nepal to procure rice and supply it to the food deficit districts, which is then channeled through the national distribution network of the NFC. The formal mandate of NFC is to provide subsidized rice to the most vulnerable people in food insecure districts so as to fulfill the state obligation to provide (fulfill) the right to food of people. However, NFC operation of food supply in food deficit districts has been criticized, as it intended to supply cheap food to selected district mostly influenced by political interest (Box 3).

With the passage of time, the provision of subsidized rice was also initiated for local communities as a tool of political persuasion. "The practice of distributing subsidized food in the remote districts was originally introduced to serve the food needs of government employees not to help poor people", an old political activist from Dailekh district revealed. According to him, subsidized rice for the community people through the NFC was introduced in Dailekh purely with political motives to influence people in the National Referendum of 1979/80 during the Panchayat Period.

Box: 3

**Subsidized Rice Introduced With The Political Motive**

The Dailekh district faced a severe food crisis in 1971, due to a long drought. People managed this crisis by gathering wild vegetables and tubers from the forests. The hunger crisis did not draw the attention of the government nor of any other agencies. Ironically, in 1978 when the country was preparing for National Referendum seeking whether political reforms were necessary, local political actors associated with the then Panchayat system, pressured the Chief District Officer to introduce subsidized food – a rice distribution system in the district.

It was not an emergency situation at all, as one of the then Pradhanpanchas recalls the discussion with the CDO. According to him, the CDO was not ready to introduce rice with the logic that there was no chance of selling rice in the district as people were producing or managing their food by themselves. But the Pradhanpanchas pressured, him indicating the fact that it would help them to garner support to the Panchayat system in the Referendum. Still the CDO was worried about the costs if the imported rice could not be sold in time. For that, the Pradhanpanchas came up with the idea that they would bear the costs if the rice could not be sold. Finally, the CDO agreed to introduce the rice into the district. He started the process requesting the central government begin the provision of subsidized rice in the district. The Pradhanpanchas followed up the process. The center also immediately sensed the context and for the first time sent a helicopter with a full load of rice that landed in Naumule of the district (Interviews by FIAN Nepal, 2011).
The NFC bears the transportation costs of the rice from the southern plain to the remote north as a subsidy, providing rice at a relatively cheap price for the people of the remote hilly districts. However, a major part of the NFC's food transaction has mostly been in the Kathmandu valley with the purpose of food market stabilization.48

Box: 4

**Chronology of Government Intervention for Food Security**49

- In 1949, the Department of Rice Mills and Sales was established as the beginning of public sector intervention in the distribution of subsidized food grain in Kathmandu Valley.
- In 1951, the Department of Food was created in the Center with Regional Food Control Offices to procure rice in the terai and dispatch it to Kathmandu for distribution. There were 32 stores under this food control office during 1952-53.
- In 1955, the government converted the Regional Food Control Office to the Food Storage and Sales Department with a purpose of supplying rice to cities in Kathmandu valley. In 1957, these units were merged to create a new Food Office.
- In the early 1960s, the government instituted a Valley Food Arrangement Committee and allocated a budget from government sources.
- In 1964, the government replaced the Committee by the Food Arrangement Corporation to distribute food obtained locally.
- In 1965, the Food Management Corporation was established under the Corporation Act to replace Food Arrangement Corporation. This institution continued until 1972.
- In 1971/1972, the droughts and excess rains in hilly and remote regions of the country underscored the need for a national level agency. Thus, the government created the Agricultural Marketing Corporation (AMC) by merging the Food Management Corporation and the Agricultural Supply Corporation.
- The objectives were to: (i) Provide regular and organized supply of agricultural inputs, (ii) make food grains available at a reasonable price for the poor in food deficit districts, (iii) achieve better co-ordination by bringing both the input and output distribution functions under single management, (iv) promote food grain exports to countries other than India, (v) stabilize prices of food grains, and (vi) increase agricultural production by providing incentives to the producers.
- In 1973, the Agricultural Marketing Corporation (AMC) was renamed as Agriculture Purchase and Sales Corporation.
- In 1974, the Agriculture Purchase and Sales Corporation was split into the Agriculture Inputs Corporation (AIC) and Nepal Food Corporation (NFC) under the Corporation Act. The NFC was responsible for handling food grain distribution while the AIC was responsible for providing inputs to farmers.
- The NFC was entrusted with procurement, storage and distribution of food grains as follows:

48 Khadka, 1989
49 Pyakuryal, et al., 2010, pp. 20-31
Assessing the Impact of Food-Aid on Livelihoods and Food Security in the Western Hills of Nepal:
From a Human Right to Food Perspective

(i) Procure, store, transport and distribute food grains at a fair price in order to meet the food requirements in the remote and food deficit areas and to maintain farm incomes, (ii) ensure adequate supply of food-grains and other essential commodities, (iii) implement the rice exports program of the government, (vi) maintain a reserve stock in relation to domestic requirements, and (vii) construct and maintain warehouses for storage and distribution. The NFC was established to distribute food in deficit areas (i.e. mainly hilly and mountain districts) but a major part of the food was mostly sold in the Kathmandu valley.

In the districts studied (Dailekh, Mugu and Bajura), the NFC distributes the subsidized rice based on the quota and coupon system. In the quota system, the NFC allocates certain amounts of rice for every household of the particular VDC/ward and the villagers can procure their quota on a specified date. There are no specific criteria such as poverty level, family size, distance, etc., used to determine the amount of food quota per household. For example, in Mugu, every household is supposed to get 10 kg of rice per household per month at the subsidized rate, irrespective of their status from four different outlets of the NFC - Shorukok, Pulu, Srikot and Gamgadhi of the district.

Similar provisions were found in Bajura and Dailekh also. Government employees, teachers and NGO workers also hold quotas for subsidized rice.

In Mugu, government employees from outside the district get 18 kg per month/individual (23 kg if accompanied with their family), versus 15 kg for a local employee. NGO workers can buy 10 kg per month/individual. Political party leaders hold a food quota of 200 kg per month which they can procure either to use in for their political functionaries or may distribute to people of their favor. The Chief District Officer may generally issue food coupons to anybody at any time based on requirement and urgency.  

There exists a differential price of rice for the local people and employees. Employees pay 6-7 Rupees more than the local people for a kg of rice. Based on the quality of rice, the price ranged from Rs 32-40 for local people and Rs 38-47 per kg for the employees in 2010. The NFC brings rice in the districts by air and also on horseback, which is the case both for the Mugu and Bajura districts, while it is carried by surface travels in Dailekh. The transportation of food involves a huge cost. In Mugu alone, it involved more than Rs 70 million to transport food grains in 2008. It is estimated that the NFC spent more than 300 Million Rupees in 2010 just for transportation of rice in 30 remote districts of the country. The food distribution process in the district is governed by a committee comprising Chief District Officer, Local Development Officer, District Agriculture Development Officer, representatives of major political parties and other stakeholders. This committee is also responsible for assessing probable food deficiency at the district and sending the request to the central office of the NFC for the necessary provision of the required amount of rice in the district for the particular year.
6.2 World Food Program (WFP) of the United Nations

The World Food Program (WFP) of the United Nations, which is the major organization operating international food aid, has been working in Nepal since 1963 implementing more than 50 operations of food aid, totaling almost US $400 million till 2009. Japan is the largest donor of international food aid in Nepal which provides 95% of its deliveries as bilateral program aid followed by the USA, European Community and the United Nations. As discussed above, Japan provides program food aid while, all other international donors provide food aid in the form of emergency or project aid and are basically managed by the World Food Program (WFP) of the United Nations in Nepal.

In recent years the WFP Nepal has been engaged in Development, Relief and Recovery Operations (RROs), Emergency Operations (EMOPs) and Special Operations. Protracted Relief and Recovery Operations (PRROs) for the vulnerable population affected by conflict and high food prices constitute the largest share (38%) of WFP expenditures, followed by Development (29%), PRRO for Bhutanese refugees (27%) and emergency - flood and drought- related (6%) operations. In all three study districts the WFP is mainly involved in PRROs with Food for Work (FFW) schemes. The WFP in partnership with the District Development Office also operates Rural Community Infrastructure Works (RCIW), i.e. the construction of roads, as well as Emergency Operations for the drought-affected population, Maternal and Child Health Care (MCHC) and Food for Education (FFE) programs are also in place in some VDCs of the study districts.

The WFP mostly airlifts the rice and other food items (cooking oil, pulses etc.) from Surkhet to the operation districts, involving a huge transportation cost. The WFP operates three helicopters of its own to airlift food items. It also contracts private airlines and helicopters to ensure the timely delivery of food. The WFP is often blamed for an increase in airline fares in the remote hill districts, as it offers a relatively higher fare per kg of food item to the private airlines than the airline would normally charge. The PRR Operation started in the study districts in 2008 with the twin aims of safeguarding the lives and livelihoods of drought and conflict affected populations and supporting former Maoist combatants to return, rehabilitate and reintegrate into the society. The return and reintegration package of operation was a part of the UN peace mission that ended in December 2008. The livelihoods support package is ongoing to date, essentially in the form of critical infrastructure development through food for work (FFW) activities.

The WFP’s Food for Work (FFW) activities have been implemented with the aim to provide food to vulnerable communities in times of crisis. Under this program, households are involve in infrastructure development works such as construction of school building, roads, irrigation canal, health posts, drinking water canals etc. The basic idea is that the created infrastructures contribute to development and food security of the community in the long run, while the poor households are relieved from the immediate food crisis. The WFP selects implementing partners at the centre and in operation districts for smooth implementation of FFW activities. There are standard rules and procedures regarding the target area selection, community participation, duration of the activities and amount of food to be supplied.
FFW target community selection is based on the recommendation of the District Food Security Network (DFSN) that comprises all relevant local stakeholders including government agencies and NGOs working on food security issues in the district. Generally, the field monitor of WFP assesses the food insecurity situation of different VDCs using standard indicators of crop situation, food prices, local coping strategies, income opportunities, etc.

Based on the vulnerability information, a phase classification of VDCs is prepared and an overall district assessment report is produced which is shared in the quarterly meeting of DFSN. With this, the quarterly food insecurity assessment report is sent to the central office of WFP, the information of which is further processed to prepare the overall country’s map on food insecurity. This forms the foundation of the entire WFP-FFW programming for the country.

The local partner organizations of the WFP also prepare FFW proposals based on the district food insecurity assessment report and send it to the WFP central office through their central counterpart, i.e. the partner organization of WFP at central level. Based on the coherence of the assessment report and the proposals, priority and available resources, the WFP country program finally accepts or rejects the particular proposal of FFW activities for a particular district. If the proposals are accepted, the FFW activities are implemented in the proposed VDCs of the district. Generally, one member from each household of the targeted area can participate in the FFW activities regardless of their food security situation and receives 4 kg of rice per working day.

One FFW package in an area normally comprises 40 days. So there is an opportunity to receive 160 kg of rice per household per FFW activity. The local implementing partner organizations are responsible for food distribution. Households have to collect their food from the district headquarters on an installment basis. To implement the agreed upon FFW activities, village user committees are formed which are responsible for coordination and timely delivery of planned activities at the ward level.

Although, it is said that the WFP emphasizes community participation in the FFW decision making process, in all the studied districts community participation found less effective during our field visit. When asked about who would decide where to implement the FFW and what to do in an FFW activity, almost all community respondents in three districts considered the WFP field monitor and the staff of the local implementing partner NGOs as key actors in making necessary decisions in this matter. Moreover, political leaders and local elites also have influence over selection of the target VDCs/villages. Once selected, the targeted village community is asked to decide which asset to build through FFW. However, the NGO staff and technicians are the ultimate decision makers in this regard as well, as they also must assess the feasibility of the proposed activity.
Box: 5

Community Participation or Imposed Action?

In 2008, the WFP decided to introduce a food for work project in the China village of Mugu District. The villagers knew this fact from the staff of a local NGO which was one of the implementing partners of food for work projects of the WFP. The villagers asked the NGO staff what type of work would be they could do in exchange for the food that they were going to receive. The NGO staff suggested that they construct a community building. But the villagers were not sure about the use of this building. Moreover, they could not find an appropriate place to construct such a building in their village. The NGO staff helped them find such a place in public land near to the district headquarters which was far away from their village. Finally, they decided to construct a community building there. According to the villagers it takes nearly two hours walk on an average for them to reach to the community building from their village. “No one has gone even to see this building from the village since its construction”, says respondent of China village, Mugu. People also shared a similar story in the case of a building constructed for the health post in Gamgadhi under FFW activities. The building was constructed in such an inconvenient location that it has not been used since its construction two years ago. Here too, the idea of construction was imposed by the NGO staff.

Besides FFW, another important area of the WFP’s involvement is the Rural Community Infrastructure Works (RCIW). Unlike FFW under PRRO, the RCIW is primarily focused on construction of roads in study districts and is carried out by the respective District Development Committees. The role of the WFP is to provide food in exchange for the labor of the villagers through its local implementing partner NGO- Support Activities for Poor Producers of Nepal (SAPROS-Nepal). There are no specific criteria for selection of the VDCs or households that will participate in the RCIW. Principally, one person from a household is allowed to work and the amount of food as remuneration is provided based on the volume and quality of sediments removed during construction. The harder the work to remove sediments and rocks, the higher the amount of food as remuneration. It does not take into account people’s food requirements, it merely demands more work for more food.

According to the informant of Mugu and Bajura districts, elderly persons, pregnant women, disabled or sick persons who may be in dire need of quality food are thus systematically excluded, as they are apparently unable to remove more sediment as compared to others.

Similar to PRRO-FFW programming, user committees are formed in RCIW, which are also primarily responsible for rice distribution according to standard norms. But it lacks participation of villagers in standard norms formulation process. The social mobilization and awareness raising of people before implementation of programme is important and that can be ensured through DDC mechanism but due to the lack of representatives in local bodies it is lacking.
7. Key Findings: Food Aid and its Implication

Historical evidence reveals that insufficient food production and food insecurity is generally a perennial problem in the western hill and mountain districts of Nepal. The problem is rooted in the historical process of systematic exclusion, neglect and marginalization resulting in poverty and powerlessness. This region has long been neglected by the central government as evidenced by the virtual non-existence of passable roads, basic health and education facilities and other development infrastructures in the entire Karnali region, even today after more than 6 decades of planned development.

Under non compliance of state’s obligation to fulfill, the region has also not received any significant attention to improve the farming and natural resources sector so as to enhance the food security situation of people in a sustainable way. The region had a 40-45% deficit in its food requirements during 1969/70 and the deficiency reached upwards of 67% in 1994, while food aid increased over the years for the same period. This clearly indicates that food aid is not producing any significant result in tackling the food insecurity problem in the region and specially in generating autonomy of the affected communities which allow them to feed themselves.

Moreover, the field study revealed that there are several negative implications with regard to the realization of the right to food of people despite a regular flow of international food aid, which is briefly discussed below.

7.1 Agriculture and Rural Development Agenda Marginalized

From the discussions in the preceding sections, it is clear that international food aid was incorrectly understood as a solution to address food insecurity problems in the study districts. As violations of the right to food of the people were not the outcomes of any emergency situation, but are rooted in structural causes, food aid only would not be an appropriate intervention for the sustainable solution of this problem which allows people to feed themselves in an autonomous manner.

But the state and other development partners continuously emphasized food grain support from outside rather than focusing on facilitating local production. Food aid has been viewed as being responsible for side-tracking the attention of policy makers, government and other development partners from the more fundamental issues involved in creating a sustainable foundation of food security in deficit areas, which would be the appropriate action in other to ensure state’s compliance with the obligation to fulfill – facilitate under the CESCR.

This fact can clearly be seen in a typical case of Bichachaur-Saini Irrigation project of Dailekh district.
Box: 6

An Irrigation Project is Still Incomplete After 40 Years

Rawatkot- an adjoining VDC of the district headquarter of Dailekh appears frequently in news reports as threatened by food shortages and potential famine. However, it bears highly potential flat land areas for food and vegetable production, but lacks irrigation facilities. An irrigation project (Bichachaur-Saini) was initiated as early as 1970 to overcome water stress in the huge tract of agricultural land of Rawatkot and other adjoining VDCs. According to the villagers, detail surveys and designs were prepared using helicopters for an approximately 16 km long irrigation canal covering the seemingly most fertile river basin of the district. With the completion of surveys and designs, government allocated a huge amount of money at that time (2.2 million Rupees) to begin the project in 1978 (FY 035/36). But the villagers did not see any construction work at that time. “We were so excited with the allocation of this huge budget for the project. But the contractor and the construction engineers never appeared in the construction site,” recalls Narendra Shahi (65) of Rawatkot-2. In fact, the entire budget of this initial phase was consumed in the name of redesigning the project. Local people believed the money was simply divided among the local elite, corrupt politicians and government officials and the contractor. The project then remained in a dormant state for 12 years. With the restoration of democracy in 1990, the issue of this irrigation project was raised once again as a popular political/development agenda in the district. As a result, government has regularly allocated the budget since 1993, (except for two fiscal years in between during the civil war time). Local political actors and journalists estimated that more than 300 million Rupees would be allocated and spent so far in this project. But the project has not realized any substantial progress to date as the head site of the canal is yet to be constructed (construction work was begun from the tail side due to geographical constraints).

Interactions with the local people, political parties and other stakeholders with respect to failures in timely realization of this irrigation project, revealed how badly it has been neglected. Local people of Rawatkot-2 opined that they have given up the hope to complete this project as they do not have political leaders from their village who care for their problems. “The leaders are more interested in bringing more rice through the NFC than producing food here, we do not have responsible leaders who really cares for our problem” says respondent of Rawatkot-4. Continuous increases in the government food supply and diversion of the budget allocated for the district to food subsidy (for transportation) was the concern of some journalists and members of the civil society for the negligence of this crucial project. There are dozens of NGOs working in the field of food security in the district. When asked about this irrigation project in an interaction program, none of the participating NGOs were found to be concerned as they do not have programs and budget to engage in such issues. Political party leaders simply blamed the local people for their inability to raise strong voices.
Hence, an important irrigation canal that may form a sustainable foundation for food grain production in the district remains incomplete after 40 years, while the subsidized food provision programs of the WFP and the NFC are in operation with the increasing amount of imported rice in the district for the same period. Both the government-run NFC and WFP are involved in selling/distributing subsidized rice in the district financed through relief resources. This has provided an excuse for the government, donor agencies/countries, political actors and development organizations to focus more on continued food aid programs and institutionalize them without doing anything substantial to overcome the water stress situation of one of the most fertile zones of the district, thus perpetuating poverty and food insecurity.

Similar experiences were shared by respondents in both Mugu and Bajura districts. Thus, food aid has become a crutch for the government and policy makers in practicing policies that discriminate against domestic agriculture, causing regular shortfalls in food availability in the district that must then be plugged with food aid. Since food aid provides the key resource necessary to maintain an ill-conceived policy and practice, curtailing deliveries – rather than providing food aid – would hasten necessary reforms that would put local agricultural and a rural development agenda in priority.

### 7.2 Food Aid Right Based Approach

The government and donor agencies have been spending large amounts of aid resources (NRs 250-300 Million per year through NFC alone)\(^{63}\) to provide subsidized food (rice) in remote districts for many years, however food aid's contribution towards the progressive realization of the right to adequate food has been limited if not negative.

First of all, the food distributed as food aid cannot be considered to be adequate for the recipient population, neither in terms of quantity nor in terms of quality. For example, subsidized rice from the NFC per capita in Mugu was about 12 kg in 2010. Considering on an average 6 members in a family, the subsidized rice per household, if distributed in an egalitarian way would not be more than 72 kg in a year which is an obviously insignificant amount and does not correspond to the quantitative requirements for adequate food. Apart from this, food aid has led to a reduction in food diversity (both in terms of production and consumption), with rice now constituting the main food intake. This is highly problematic in terms of nutrition, given that rice alone does not constitute a balanced diet. Moreover, it has been criticized that the distributed rice is frequently of poor quality.

Another problem with the reviewed food aid programs is their lack of sustainability. They are not embedded in a wider strategy for recovering community members' capacities to feed themselves and hence do not facilitate future availability of adequate food.
Moreover, both the government and the WFP food aid programs have serious shortcomings concerning their accessibility. In particular the government program is said to be prone to corruption, leading to discrimination in the selection of beneficiaries, while both programs lack adequate targeting and discriminate against large families (who receive the same amount of rice as small families) as well as individuals who are physically restricted (e.g., elderly persons and pregnant women). Community members in the study districts strongly expressed their feeling that the food channeled through the NFC rarely reaches those who really need it, arguing that poor people are not benefiting from the subsidized food distribution (field interview, 2011).

Box: 7

Poor are Denied Access to NFC Rice

Although every household in Luma village of Ruga VDC is entitled to purchase 10 kg of subsidized rice per month from the NFC at Gamgadhi, the community people have the strong feeling that regular access to the NFC rice is largely limited to the powerful section of the society- political elite, educated employees (NGO and government employees), hoteliers of the district headquarters and those who have a good relationship with them and the NFC staff. An NGO worker from Gamgadhi shares his feeling in this regard; "You can purchase rice easily from the NFC if you have an informal relationship with the NFC staff or other influential persons at district headquarters. Moreover, if you are a non-dalit (caste) man it will be an additional advantage." Obviously poor and marginalized groups do not have such advantage and so are discriminated against in access to subsidized rice. Interaction with the community people revealed that they are forced to bribe in with in kind items such as fish, ghee, beans, vegetables etc. what they called “presents” for the NFC staffs to get access to rice. "I approached the NFC several times seeking to purchase some rice as my wife was seriously ill at my home. But every time the NFC staff told me to come another day. But this other day never came," says one respondent from Luma village. "One day I saw one of our neighbors carrying a bag of rice from the NFC. I asked him how he succeeded in purchasing and he gave me the clue. The next day I went with a kilo of fresh fish and handed it over to one of the employees of the NFC. I could purchase 40 kg rice at once from the NFC at the same day."

Most of the key informants in Mugu, Dailekh and Bajura contended that the real benefits of subsidized rice distribution in the district have been either for the hotel operators or for local alcohol (raksi) producers. Poor people who do not have personal contacts with the NFC officials have to stand in queue that may take several hours to days to purchase their share of rice (Bishokarma, 2012:73). Still the purchase is never guaranteed as the NFC staff may stop the distribution at any point of time stating that the rice supply has run out. Gender and caste-based discrimination is also experienced particularly by so called dalit people even while standing in line to buy rice from NFC.
Box: 8

Caste-based and Gender Discrimination is Common in Rice Distribution

One day in the month of September 2009, Mrs. Ladi Sunar (40), a dalit woman from Ruga VDC was standing in queue from early in the morning to purchase rice from the NFC at Gamgadhi, Mugu. She was ahead of a member of the so-called high caste group in the line, which they felt was indecent. They asked her to go to the back of the line, but she refused.

They approached the official at NFC asking him to remove her from the line, just because she was from dalit community. The official asked her to come later, but she refused to do so either as she had started early in the morning. At last the NFC official physically assaulted her and removed her from the queue. The issue immediately came to the notice of a human rights organization in the district. Human rights activists from the HR organization – Campaign for Human Rights and Social Transformation (CaHuRaST) picked up the case and took it to the concerned authority demanding appropriate punishment to the guilty. Unfortunately, the case was negotiated, and ended with the guilty party merely having to verbally apologize to the victimized woman.

7.3 Food aid has Increased Dependency on Aid Resources

According to WFP, the ultimate aim of food aid should be to enhance the food security status of households in a sustainable manner so as to end further aid operation as soon as possible. But the interaction with the community people revealed that none of the households feel enhanced security in the long run through the work of the WFP. Rather most of them perceive enhanced security when the WFP continues its FFW operations in their place and they are receiving the benefits. People frequently expressed a desire to have a WFP-FFW operation in their village. Those who have not had such a project yet feel that they are highly deprived and unfortunate.

Box: 9

Dependency is Increasing Not Decreasing

During our interaction with the community people in Luma and Bamo villages of Ruga VDC in Mugu, they frequently asked us to provide a ‘food for work’ project in their areas. While we were moving down from Bamo to return to the district headquarters- Gamgadhi, we met a local post man belonging to the same village. Looking at us for a moment, he started to beg for at least a ‘project’ in his village. He was saying that “no one comes from the NGOs to my village as it is far from the district headquarters. We do not have powerful political leaders to demand aid resources. You are the first to come to this place so please consider providing us a project so that we would also get white rice in our place. I am a government employee so that I can get it easily, but our poor brothers and sisters in my village have no such an access to white rice. We are unfortunate for being unable to bring a rice project to our village so far.”
7.4 Food Aid has Limited Success in Stimulating a Sustainable Foundation of Food Security

The food aid program have limited relevance in building sustainable agricultural systems which would have direct bearing on the food security of the region. The FFW activities are mostly concentrated on opening of foot trails, roads and construction of community buildings, schools and health posts, repair and maintenance of existing irrigation canals, drinking water systems, etc. However, FFW activity found rarely supported to build any new irrigation system for the communities, while throughout the vulnerable areas, when asked what would be their priority, people demanded “irrigation”. This does not necessarily imply that public works performed through the food-for-work programs are worthless as people in Pandusen and Jugada VDCs of Bajura, Ruga of Mugu and Kushapani VDC of Dailekh found to be happy with the road and foot-trails constructed under this scheme. Roads and foot trails are also important infrastructure for rural people in the hills and mountains. However, the course of agriculture and food security would definitely have been different if the donor and policy makers had taken an approach that would enhance local farming systems by using this aid resource through FFW activities.

7.5 Food Aid is not a Safety Net for Vulnerable Groups

According to Bishokarma (2012), interaction with the community revealed that poor households cannot rely on food aid as a safety measure. The obvious reasons for this are:

I. Receiving food from the NFC is unpredictable. Though the WFP’s FFW/RCIW operations are more reliable in terms of food delivery, people cannot predict whether they will get such operations in their villages; there is no sustainable access to food ensured by the state.

II. The amount of rice received is not sufficient to meet their quantitative as well as qualitative needs. This is contrary to the popular perception that rice has become the most dominant food item of rural communities in these areas, due to regular flow of subsidized rice; we found it to be a myth in the case of the poorer households.

It is obvious that although government and the International Food Aid agencies have been spending huge amounts of money on food aid every year, the real benefit at the household level for the poor seems to be insignificant.
Box: 10  
**Subsidized Rice Adds Just a Meager Amount to the Diets of the Poor**

There are 125 households in Luma village of Ruga VDC, Mugu. The NFC has formally allocated 10 kg of rice per household in normal conditions for this village. As discussed earlier in this section, the poorer households seldom receive the allocated amount despite the formal arrangement. The WFP had implemented one FFW project two years back for which the villagers prepared the school ground. They received 160 kg of rice for their works under this project, which would be sufficient for a maximum of 40 days for a family of 6-7 members. Besides, if the poor people succeeded in obtaining the allocated 10 kg of rice from the NFC it would be enough just for 2-3 days a month.

This shows that an average sized household can only get enough rice for less than a week per month, if the current levels of both the NFC and the WFP operations run smoothly in their place each year with egalitarian distribution (which is virtually impossible in practice). In such situations people have to arrange their own food for three weeks per month from their own means. Moreover, the WFP operates in a village only once or twice based on the situation and it has already been discussed that NFC rice is generally taken by the powerful elite and seldom reaches the poor.

For example, Luma has received just one project providing 160 kg of rice per household so far. A respondent from Luma says "I am 65 years old now. I have received just 160 kg of rice from RCDC (Partner NGO of WFP) in my whole life. In the event of difficulties I go to the NFC to purchase rice. Unlike other brothers and sisters of my village, I was the member of the District Development Committee for a term so I can get the allocated amount (sometimes even more!) of rice without any difficulties".

The above discussion clearly states the reality against the overblown claims made by the government, aid agencies and some NGOs that food aid is the only means to ensure food availability and sufficiency in these unproductive remote districts. Particularly people of **Kamali** are frequently blamed on several occasions that they are neglecting local production in anticipation of food aid-rice. But people in **Ruga** VDC rejected this accusation outright. According to them poor households do not leave their land without producing food as no one is sure to obtain outside rice. "You may see the fallow land in **Mugu**, but all these lands belong to **rajas**, who have hundreds of **ropanis** of land here but they have already migrated down to the cities" said a villager Prakash Lawad (45) from Srinagar.

We inquired about the same issue at a district stakeholders’ meeting; the participants also agreed that the fallow land belongs to absentee landlords.

### 7.6 Food aid Exists in the Interests of the Powerful

According to our findings, despite its insignificant contribution, the food aid is institutionalized in these remote hills in such a way that there is no sign that it will
end soon. The reason behind this lies in the fact that the local elite- political leaders, government employees, business persons, NGO workers all have certain interests linked with the food aid programming in the district. Political leaders most frequently use it as political tool to garner votes during the elections. Government employees obviously benefit the most from subsidized food. NGO workers are linked somehow to manage the aid resources so as to receive benefits from employment and associated power. In such a situation it is questionable if a critical approach to food aid can be expected.  

8. Conclusion

The implication of food aid to promote the right to food in the Nepalese hills has clearly been mixed. The impact of food aid of course need not be entirely negative. Generally, however, four decades of experience of food aid have created many problems, and solved few, beyond the obvious and necessary humanitarian relief function. Cases of dependency, externalizing responsibility, poor results of investment in infrastructure development works and other assets abound it can be argued that decades of food aid in the water stressed, remote hills of Nepal has had a negative effect on the state obligation to fulfill the human right to adequate food.

Humanitarian relief programs such as food assistance are typically desirable to assist communities suffering from transitory food insecurity problems resulting from certain shocks (for example drought and flood emergencies) that affect households temporarily and must be ended as soon as the crisis is over. Even in such situations, food aid should produce equity implications and should not trigger any disincentive effects such as encouraging dependency syndrome both in part of the victim communities and in government institutions, discouraging local production and other useful development interventions. In this case, food aid, instead of being applied as a transitory measure, has become an institutionalized practice. It has not addressed the structural causes of hunger in the region and has not restored the capacity of community members to produce their own food; hence, it has not contributed towards the progressive realization of the right to adequate food in the community.

Due to the increasing flow of food aid, the state's obligation to realize the human right to adequate food has been sidelined. Whether increasing food aid to chronically food insecure areas positively or negatively affect local livelihoods, economy and agricultural development turns largely on how well donors and operational agencies manage it in terms of targeting, timing, etc., and whether the domestic political, and institutional environment is conducive to efficient utilization of food aid as a development tool. But our experience of utilizing relief resources for development is largely a story of failure.

No matter how careful the targeting and how much effort has been spent for community empowerment, the disincentive effects of food aid schemes in the Nepalese hills is obviously hindering the major structural reforms in the rural economy. By discouraging policies and programs that would contribute to build a foundation of sustainable

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66 Interview with Mr. Santosh Malla, Chairperson of Public Service Organization (PSO – a local NGO of Mugu)  
67 Awudu Abdulai et al., 2004
livelihoods for people in highly vulnerable areas, food aid in no way has benefited communities in the longer term or in a sustainable manner. Nor has it become a reliable means of food safety for the rural poor. The recurrent and increasing flow of food aid has not supported the vulnerable people’s desire for secured livelihoods, rather according to the testimonies one could deduce that it has continuously tend to undermine them. Food aid largely does not contribute to the right to food, but rather deepens the problem by sidetracking the attention of policy makers, donor agencies and development workers from the pertinent issues of structural transformation. Given that the food aid programs do not aim at restoring the capacity of the community members to feed themselves but rather diminish this capacity (in creating disincentives for cultivation and inhibiting alternative coping strategies), the State of Nepal has failed in its international human rights law obligation to fulfill the right to food. While the provision of humanitarian food aid to populations who cannot feed themselves for reasons beyond their control is also a government responsibility (obligation to provide), this measure should only be applied as a last resort. The primary measure with regard to fulfilling the right to adequate food should always be the creation of the necessary conditions under which people can feed themselves in an independent manner (obligation to facilitate). This would entail major structural reforms (e.g., redistribution of land) and multi-level interventions aimed at inhibiting and indentifying present and past discrimination.

The food aid programs seem to have a food security and not a human rights approach in which people are just seen as beneficiaries of aid, but not as human rights holders, able to participate in decision process, to monitore the activities of their authorities and to maintain them accountable, even if necessary trough complaint and claim mechanisms for affected individuals or groups.

Based on the findings and discussion of this study a number of future options and scenarios emerge which are outlined as ways forward below. Some of these concerns require urgent action while some others may demand a long term activism - both at the policy and practice level- to achieve desired outcomes of international food aid schemes in Nepal, which are coherent with the primacy of human rights and the human rights accountability of state and donors.

9. Ways Forward

9.1 The Purpose of Food Aid Should Largely be Limited to Protect Right to Food in Emergencies

Food aid is typically expected to assist communities that suffer from transitory food insecurity problems which affect households occasionally and temporarily. Even in such communities, relief food assistance should not have economic disincentive effects such as encouraging an “aid dependency syndrome” and discouraging local production and development programs and institutions.

International food aid schemes should focus on supporting those who suddenly lose everything, or who are forced to flee their homes due to natural catastrophes
or are living amid war-scarred ruins or who are not able to feed themselves due to conditions external to their control (people with incapacities, orphans, elderly people). Food aid deliveries should be a more reliable means of subsistence in cases of crisis, so as to ensure an appropriate safety net to the people.

9.2 Food Aid Should be a Part of the Broader Development Agenda with Right Based Approach

Although food aid schemes should largely be confined to tackle emergencies, they should be embedded into broader development goals for the country. Donors should promote the right to food as priority of development cooperation as hunger and malnutrition are significant problems in the country. In order to guarantee availability and access to adequate food in the long run, it is essential to integrate food aid as a temporary measure in wider food security strategies which aim at building or recovering the community’s capacity to feed itself. Food aid schemes should have transparency, accountability, participation, non-discrimination and empowerment as essential components of their operations. They should be implemented on the basis of an objective assessment of the identified needs of communities, and should be stopped as soon as the crisis is over. All relief food assistance programs should have mechanisms to ensure justice and equity in their operation, including monitoring mechanisms and remedy mechanisms for victims of violations of the right to adequate food in the frame of food aid programs.

9.3 Food Aid Should Contribute to Fighting the Underlying Causes of Poverty and Hunger

The focus of FFW programs should primarily be on agricultural development through the promotion of productive assets—such as land development, irrigation canals, water harvesting tanks, cooperative promotion, etc. Moreover, recognizing the deep-rooted structural problems of the rural economy in chronically poor areas, food aid schemes would have to go beyond the food for work programs which have focused excessively on technical issues neglecting policy, institutions and governance related (like the issues of land ownership, non-farm employment and migration, peoples participation, transparency and accountability) problems which affect the effectiveness of technical inputs, financial resources and the sustainability of program outcomes. Therefore food aid schemes should include conscious efforts to positively influence such structural causes of poverty, hunger and under nutrition rather than merely dumping the subsidized food grains into area.
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Abstract

This study is the review of water, forest and biodiversity conservation related policies and legal instruments in Nepal. It digs out the strengths and weaknesses, gaps and opportunities in existing policies and legal frameworks pertaining to access to and control over natural resources of marginalized communities in Nepal. Desk review, interview, FGD with rights holders, participant observation, meeting and consultation with policy makers/experts and stakeholders were done during the research.

A latest estimate shows that nearly 7 million out of about 27 million people in Nepal go to bed hungry every day1. Majority of them are smallholders or landless people, women and girls living in rural areas. Nepal stands the 16th position among 31 countries that are reeling from food deficit with 40 districts facing food shortage2. The access to natural resources of the different communities in Nepal is the key for the realization of their right to food: Majority of rural people in Nepal depend on different forms of forest (like grasses, fodder, firewood, timber, wild fruits, wild vegetables etc) and water (drinking, irrigation, fishing, other traditional use etc) resources for their livelihoods. Many people especially those belonging to disadvantaged and marginalized groups of the society are deprived from the enjoyment of the right to food due to this situation is often determined by insufficient and insecure access to productive resources for livelihood in particular land, along with landlessness and evictions; discriminatory access to traditional resources such as forests, rivers and fishing areas.

Representation and participation of most of the stakeholders is denied in formulating policies. The declaration and management of most of the protected areas in Nepal could not identify and recognize the existing traditional customary practices of resources uses and benefit sharing mechanisms. Indigenous peoples and local communities have their own values, norms and practices of resources management and utilizations. Hence, their access to and control over natural resources is denied. Nepal has been ratified more than a dozen of international treaties, covenants/conventions and has formulated a number of national laws and policies directly/indirectly related to right to food, however, their implementation in real sense is very poor and lacking. Consequently, the right to food situation of Nepal is very meager. Moreover, there is lacking sectoral policies on right to food and coordination and collaboration among ministries, departments and other governmental agencies too.

The field work of this study was concentrated in endangered and highly marginalized communities in Banke, Bardiya and Kailali districts intensively. We express our thanks to research team members- Mr. Jailab K. Rai, Dr. Krishna Pd. Poudel, Dr. Laya Pd. Uprety who productively accomplished their research in 2012. For full fledge report, please, visit FIAN-Nepal’s website: www.fiannepal.org- Editors.)

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1. WFP (2009), A Sub-regional Hunger Index for Nepal (The Hunger Index is calculated as follows: \[ \text{NHI} = \frac{\text{PUN} + \text{CUW} + \text{CM}}{3} ; \] PUN = Proportion of the population that is undernourished (%), CUW = Prevalence of underweight children under five years of age (%), CM = Proportion of children dying before the age of five (%). In theory, the index can vary between 0 and 100. A higher index indicates a higher prevalence of underweight children under five years of age.)

1. Introduction

The Human Rights Fact Sheet\(^3\) No. 34 state “More than one billion people are undernourished. Over two billion suffer from a lack of essential vitamins and minerals in their food and nearly six million children die every year from malnutrition or related diseases, that is about half of all preventable deaths. The majority of those suffering from hunger and malnutrition are smallholders or landless people, mostly women and girls living in rural areas without access to productive resources” (UN/Human Rights 2010:1). For the eradication of hunger and the reduction of the number of undernourished people in the world, several international legal instruments\(^4\) have been developed.

A great number of international laws and instruments refer to the right to food as a human right. Some of these instruments or standards are legally binding, whereas others are simply declarative. Together, the binding and clearly obligatory (hard Law) and the interpretative and declarative ones (soft Law) constitute the international standards of the right to adequate food. Binding instruments impose clear international obligations on States. As international treaties should be complied with in good faith by states, states should understand what is stipulated in the treaties as well as in the interpretations by the bodies authorized to do so. Said interpretations are frequently embodied in instruments of soft law.

The Universal Declaration of Human Rights (1948), Article 25, states: “Everyone has the right to a standard of living adequate for the health and well-being of himself/herself and his/her family, including food, clothing, housing and medical care and necessary social services, and the right to the security in the event of unemployment, sickness, living with disability, widowhood, senior age or other lack of livelihood in circumstances beyond his/her control.” The provisions of this declaration were translated into legally binding International Human Rights Covenants. The right to adequate food is most firmly established in the 1966 International Covenant on Economic, Social and Cultural Rights (ICESCR). This Covenant establishes in article 11 the right to an adequate standard of living, which is understood as the minimum right of everyone to be protected from hunger. The right to adequate food generates specific obligations for States that are binding and should be understood as interpreted by the UN ICESCR in General Comment No. 12.

The FAO voluntary guidelines take into account a wide range of important considerations and principles, including equality and non-discrimination, participation and inclusion, accountability and rules of law, and the principle that all human are universal, indivisible, interrelated and interdependent (FAO/UN 2005:4). These voluntary guidelines are considered as important human rights based practical tools. These tools do not establish legally binding obligations to States and international organizations but rather encourage them to develop their strategies, policies, programs and activities (UN/Human Rights 2010).

2. The Country Overview

2.1 The Socio-Economic Context

Nepal is rich in natural resources namely water and forest and cultural diversity. However, the Human Development Index (HDI) trend shows that the natural resources,
natural beauties and cultural diversities have not been yet proved as the means and sources of socio-economic development. For instance, Nepal is ranked as the poorest country in its HDI since long time. In United Nations Development Programme's HDI in 2011, Nepal has been ranked into the Low Human Development Index (LHDI) groups. Of total 187 countries, Nepal has been ranked in the 157th position from highest to lowest ranking. Except Afghanistan (in 172nd position), all of its neighboring countries have been ranked into the highest position than Nepal. For example Bangladesh and Pakistan have been ranked in 146th and 145th (both in LHDI) respectively. Similarly, Bhutan in 141st position, India in 134th position, Maldives in 109th position, China in 101st position, and Sri Lanka in 97th position (all in Medium Human Development Index [MHD]).

The HDI trend of the country (Nepal) also indicates that the country has not improved adequate socio-economic condition of the people since long years/a decade. In most of the years country has been listed in the low human development category. The significant improvement is seen in the education sector, whereas the economy of the people has not improved well.

Table 1: Nepal's HDI trend over last 12 years (2001-2011)

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<td>138th</td>
<td>67.5</td>
<td>57.9</td>
<td>1201</td>
<td>Low HD</td>
</tr>
<tr>
<td>2009</td>
<td>0.553</td>
<td>144th</td>
<td>66.3</td>
<td>56.5</td>
<td>1049</td>
<td>Medium HD</td>
</tr>
<tr>
<td>2008</td>
<td>0.534</td>
<td>142nd</td>
<td>62.6</td>
<td>48.6</td>
<td>1550</td>
<td>Medium HD</td>
</tr>
<tr>
<td>2006</td>
<td>0.527</td>
<td>138th</td>
<td>62.1</td>
<td>48.6</td>
<td>1490</td>
<td>Medium HD</td>
</tr>
<tr>
<td>2005</td>
<td>0.526</td>
<td>136th</td>
<td>61.6</td>
<td>48.6</td>
<td>1420</td>
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</tr>
<tr>
<td>2004</td>
<td>0.504</td>
<td>140th</td>
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<td>1370</td>
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<tr>
<td>2003</td>
<td>0.479</td>
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<td>59.1</td>
<td>42.9</td>
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<tr>
<td>2002</td>
<td>0.490</td>
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<td>41.8</td>
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<td>Low HD</td>
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<tr>
<td>2001</td>
<td>0.480</td>
<td>129th</td>
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<td>40.1</td>
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<tr>
<td>2000</td>
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<td>144th</td>
<td>57.8</td>
<td>39.2</td>
<td>1157</td>
<td>Low HD</td>
</tr>
</tbody>
</table>


The human development index is one or other way may be related with access to natural resources. Firstly, an individual requires adequate food to eat which in most cases then determines his health condition. Similarly, availability of adequate food then gradually determines the education of a person and consequently personal and the family income. Although there is significant improvements in education and little progress in life expectancy (indirectly the health condition of the citizens), the overall human development index indicates that people of the country are still lacking behind the adequate economic growth. Therefore, health, education and economy of the people in one or another way can be related with access to and control over natural resources.

### 2.2 Socio-Cultural Context

Nepal is a multi ethnic, multi-cultural, multi-religious and multi-lingual country. According to the national census in 2011, there are 125 caste/ethnic groups in Nepal.
Of them, 59 caste/ethnic groups have been listed as indigenous nationalities and rest of others as Hindu caste/ethnic and occupational groups. In addition to this, the High Commission for the Re-Listing of Indigenous Nationalities in Nepal commissioned in 2009/2010 has submitted its study report with recommendation to propose more than 81 communities as Indigenous nationalities in Nepal.

This is noteworthy that the existing caste/ethnic groups of the country have their own patterns of socio-cultural life. These include difference in caste/ethnicity, language, economy, polity, religion, and other socio-cultural life ways. Despite some similarities among some caste/ethnic communities, the most cases show that their socio-cultural norms, values, and beliefs are also different from each other. The differences are not only in the cultural characteristics, but also in other socio-economic status. For example, the educational status/access, occupational status/involvements, political influence/participation etc (see Gurung 2007).

2.3 Context of Natural Resources Dependency

It is estimated that more than 38% of countries land mass is covered by forests in Nepal. And majority of the rural people in Nepal are depending on different forms of forest resources like grasses, fodders, firewood, timber, wild fruits, wild vegetables etc for their livelihoods. They have been accessing these resources from different form of forests, such as community forest (forest managed by the community), leasehold forest (poor or defined community is leased with a patches of forest for defined time period), private forest (privately owned forest), national forest (controlled and managed by the state), religious forest (forest managed for religious groups), and protected forests (protected for species in the area). Of them, community forest is one of the most appreciated and well known management systems in terms of conservation and contribution to the local livelihoods in Nepal. However, some studies show that there are some critiques about the equitable benefits sharing and governance of community forest resources. For example, many of the poor and socially marginalized households are excluded from the membership of community forestry. So, the livelihood rights of traditionally forest resources dependent poor communities and the household is an important matter from both policies and practices in Nepal.

Nepal is also known as second water resources richest country in the world. Except drinking and other domestic purposes, water resources is life for many of the communities in Nepal, particularly for the indigenous fishing communities like Bote and Majhi in Chitwan and Nawalparasi districts, Mallaha in Sunsari and Saptari district and Sonaha in Bardiya district (Jana 2007 & 2008). In addition to this, it is fact that majority of people in the country are still farmers and dependent on agricultural production as a means of their livelihood. For this, irrigation is one of the most important components of the agricultural production and productivities. Hence, the general water policies, including the irrigation, are one of the most important tools in understanding the right to food situation of the people.

It is estimated that about 23.23% of the country’s land area is declared as protected areas in Nepal. This area is managed in different names and forms like National Parks (landscape level protection), Hunting Reserves, Conservation Areas, Wild Life Sanctuaries, and
Buffer Zone areas (to buffer human beings and animals). The management system of these protected areas, benefits of these protected areas, livelihood and socio-cultural impacts of these protected areas etc have been becoming a frequent debates in Nepal since the establishment of these areas. Many of the studies show that the PAs in Nepal have adversely affecting in the traditional livelihood rights of indigenous peoples and local communities (Jana 2007, 2008, Ghimire 2003, Rai 2011b).

The natural resources dependency of different communities in Nepal is most important issues when we talk about their right to food and access to natural resources. Some communities are highly dependent upon the natural resources for their livelihood while some other may be less. Similarly, it is another fact that the natural resource (such as forest, water, soil etc) of the country is not evenly distributed in different eco-regions (mountain, hill, churia, and terai). For example, Himalayan and Terai region of the country have little forests in compare to other two regions. Similarly, fertile agricultural land is mostly available in terai region and very less in mountain region. But in terms of spring water, mountain and hilly regions are rich but high possibility of large irrigation canals in terai region. Hence, the access to the different natural resources is itself a great challenge for securing right to adequate food to different communities in different parts of the country. Moreover, state’s policies and laws related with the access to and control over natural resources to address the diverse forms and nature of the distribution of natural resources is very important in understanding the right to food issues in Nepal.

3. The Right to Food and Access to and Control over Natural Resources

3.1 The Right to Food Perspective

General Comment No. 12 of 1999 on the right to adequate food, the UN Committee on Economic, Social and Cultural Rights (CESCR) has presented the authoritative interpretation, stating that:

“The right to adequate food is realized when every man, woman and child, alone or in community with others, has physical and economic access at all times to adequate food or means for its procurement”.

According to General Comment No. 12 and the FAO Right to Food Guidelines of November 2004, the realization of the human right to adequate food involves diverse normative elements: a) adequacy of food, which includes quantity, quality, food safety and cultural acceptability, b) availability of food c) physical and economic access to food and to natural/productive resources and means of production, including employment opportunities through which one can procure food and d) sustainability of being able to feed oneself in dignity in the sense that food production, marketing and consume should be done in such a way, which does not put in danger or destroys food availability, access and quality in the future and for further generations.

General Comment No. 12 of ICESCR also clarifies the obligations concerning the human right to food stating that: “The principal obligation is to take steps to achieve
progressively the full realization of the right to adequate food. Every State is obliged to ensure for everyone under its jurisdiction access to the minimum essential food which is sufficient, nutritionally adequate and safe, to ensure their freedom from hunger.” This obligation includes the principle of non-retrogression. Moreover, the Committee recognizes the general obligation of non-discrimination regarding the right to adequate food.

Three types of specific of obligations on State parties have been formulated by the CESCR in order for them to implement the right to adequate food, as well as other human rights, at the national level. Each government has the obligation to: i) respect, ii) protect and iii) fulfill the right to food.

First, the obligation to respect on existing access to adequate food requires States parties not to take any measures that result in preventing such access. Second, the obligation to protect requires measures by the State to ensure that enterprises or individuals do not deprive individuals of their access to adequate food. Third, the obligation to fulfill (facilitate) means the State must pro-active-ly engage in activities intended to strengthen people's access to and utilization of resources and means to ensure their livelihood, including food security. Finally, whenever an individual or group is unable, for reasons beyond their control, to enjoy the right to adequate food by the means at their disposal, States have the obligation to fulfill (provide) that right directly. This obligation also applies for persons who are victims of natural or manmade disasters.

It is made clear that the obligation to fulfill the realization of the right to food implies that the State parties to the ICESCR must identify vulnerable groups and develop appropriate strategies to ensure at a short, medium and long term the ability of these vulnerable groups to realize and enjoy their right to food by their own means. Even if States face severe resource constraints, caused by economic adjustment, economic crisis or other factors, the vulnerable population has the right to be protected through social programs aimed to improve access to adequate food and satisfy nutritional needs. All States have the obligation to immediately enforce the core content of the right to food, which means, that every person must, at least, be free from hunger.

In the design, adoption and implementation of policies concerning the right to food, State authorities have to act in coherence with the principles of participation, transparency, empowerment and the rule of law, and priority should be given to individuals and communities in situation of vulnerability. Furthermore, under a right to food perspective accountability mechanisms, including monitoring and justiciability mechanisms shall be in place, for people to be able to claim their right to adequate food.

According to the UN Special Rapporteur on the Right to Food “the right to have regular, permanent and unrestricted access, either directly or by means of financial purchases, to quantitatively and qualitatively adequate and sufficient food corresponding to the cultural traditions of the people to which the consumer belongs, and which ensure a physical and mental, individual and collective, fulfilling and dignified life free of fear”. The UN General Comment No. 12, further clarifies that the realization of the right to adequate food requires: the availability of food in sufficient quantity and quality; food accessibility, i.e.
the ability of individuals and groups to gain access to adequate food, both economically and physically (Paras 8 and 13).

3.2 National Legal Framework on the Right to Adequate Food

3.2.1 Integration of International Human Rights Instruments in the National Legal Framework

In its national legal framework Nepal has obligated to ensure its citizen to be free from hunger by being state party to many international instruments e.g. it is a state party to CEDAW ratified on 22 April 1991; ICCPR, ratified on 14 August 1991; ICESCR ratified on 14 May 1991; CRC, Ratified on 14 September 1990; CERD ratified in 30 January 1971; CAT, ratified on 14 May 1991 and ILO 169, on September 2007.

3.2.2 Constitutional Protection of the Right to Adequate Food

Nepal is passing through an unprecedented socio-political transition with dramatic rapid political shifts following the decade long insurgency between the government and Maoists that ended in 2006 with a ceasefire agreement. The post conflict transformation process (since 2007) has been centered on bringing Maoists into the mainstream politics (12 Point Agreement), Comprehensive Peace Accord (CPA, November 2006), Interim Constitution (January 2007), holding the Constituent Assembly (CA) election (April 2008) and legally abolishing 239 years old monarchy (May 2008) declaring the country as a republic. The key mandate of CA was to draft the new Constitution by 28 May 2010; but unable to build consensus on several issues among major political parties then, it was extended upto four times for 4 times. Consequently, the CA dismissed on 28 May 2012 prior to promulgating the new constitution in Nepal. The interim constitution calls for a restructuring of the state as a precursor to federalism. Given Nepal’s ethnic, geographical, cultural, linguistic, religious, and economic diversity, the benefits of restructuring by these variables are still being debated. Political agenda and power struggle among political parties have taken priority over everything else. In such uncertain, weakened conditions of governance and “rule of law”, the human rights' violations and the development agendas are the least of priority.

The interim constitution of Nepal 2007 (which remains valid until the new constitution is adopted), guarantees under Article 12 the right to life:

“Every person shall have the right to live with dignity, and no law which provides for capital punishment shall be made.”

The interim constitution has also provisioned the right to food sovereignty of every citizen as a fundamental right under Article 18 (3):

“Every citizen has the right to food sovereignty as provided for in the law.”

The obstacle with this formulation, which refers to its application as provided in the law, is that it can be interpreted by the most traditional lawyers as an impediment to apply the right directly. Therefore, as long as there is no framework law regulating the right to food, this could be an excuse for its justiciability.

Furthermore Part 4, Article 33 (h) of the same Interim Constitution recognizes Food Sovereignty along with employment, shelter, health and education as the right of people to be established in the policy framework of the State of Nepal. It intends to address the problem of squatter dwellers, bonded agricultural laborers, hired wage earners, and herders and bring them under the social safety net. It also directs to follow an inclusive policy regarding women, Dalits, indigenous people, Madhesi, Muslims and other marginalized groups and sectors including people with disability of remote areas and bring them into national mainstream.12

Further it includes the freedom of opinion, expression, belief, peaceful assembly, to form unions and associations, choice of occupation or trade. These rights protect every citizen to be equal before law and provide that state shall not discriminate among citizen on grounds of religion, race, caste, tribe, gender, origin, language or ideological conviction.

The Interim Constitution established the right of all Nepali citizens to free basic health services, the right to a clean environment, access to education and a means of livelihood, in a social environment free of discrimination and institutionalized inequality. There is a constitutional provision under article 19(3) to provide compensation for any property requisitioned, acquired or encumbered by the state in implementing scientific land reform programs or in the public interest in accordance with law.

All these constitutional clauses are relevant for the enforceability of the right to food, taking into account the indivisibility and interdependency of human rights.

Rapid achievement of political consensus is hence urgent and the absolute precondition for socio-economic recovery. In this context, a relevant challenge is to maintain the rule of law protecting basic human rights, including the right to adequate food of its people in the coming definitive constitution. Intense lobby and advocacy work has been done by various civil society organizations, to achieve this goal.

The draft report of the Fundamental Rights and Directive Principles Committee of the former CA, the right to food had been incorporated under Article 21(1), where it states the right of every citizen to have right to food, food security and food sovereignty, as provisioned by law.

The Committee on Natural Resources, Economic Rights and Revenue Sharing of the former CA had also proposed that the right to food and rights that can be claimed against hunger are fundamental rights.

3.2.3 The Right to Food at General Policy Level

Nepal does not have an explicit policy or strategies on food security and the right to food, however, there are several policies, plans and programs that are relevant to
the right to adequate food. This includes the GoN’s commitment to reduce poverty and hunger (MDG 1). So far, these policies have not been properly implemented. Altogether, unstable political situation, lack of elected local bodies and political will, poor mobilization of resources and inadequate capacities of government agencies along with weak infrastructure have contributed to this failure.

The five year plans introduced various development programs for women, promised gender equality and women’s empowerment and enunciated gender mainstreaming in several economic sectors like agriculture, local development, rural infrastructure and drinking water. However, except emphasis on literacy, primary enrolment, and micro-credit for poverty alleviation empowerment and gender equality remained just rhetoric.13

3.3 Access to and Control over Natural Resources

3.3.1 Resources Entitlements and Livelihood Framework

Resource entitlements may include income from employment, and access to resources for food production or income generation (Cotula 2008). The income from employment often depends upon the skills or meritocracy of a person, which obviously means the educational status of a person. And in some cases, political and socio-cultural networks and influence also may play significant roles. The access to resources is more often based on the States’ existing policies and legal instruments that facilitates or hinders the existing situation of resources access or produces new forms of relations.

The sustainable livelihoods framework is a useful way of conceptualizing the role of resource access within livelihood strategies (Chambers and Conway 1992). According to this, livelihoods consist of capabilities, assets and activities to accessing food. The sustainable livelihood framework identifies five types of capital assets as the basis of household livelihoods: (i) financial capital like income; (ii) human capital like skills; (iii) natural capital like forests; (iv) physical capital like house; and (v) social capital like networks of social relations (Cortula 2008). A household livelihood always depends on the combination of these diverse assets and where access to natural resources is one of these assets.

3.3.2 Linkages between Right to Food and Access to Natural Resources

There are two aspects of understanding the access to resources in relation to right to food. First is the direct harvest of food, which includes the physical access and availability of resources. And second is indirect access to those resources, which includes natural resources as means of the sources of their income or may be access to procure/get food from market system.

The content of the right to adequate food has major implications for access to natural resources. For example, it is generally understood that the forest (for edible fruits, wild

vegetables, timber production, grazing lands) and water (for drinking, irrigation, fishing, boating) resources are main sources of food for the majority of the rural population in Nepal. Therefore, realizing the right to food and improving access to natural resources is an important aspect of understanding adequate food as human right. The access to natural resources is interrelated with food availability, accessibility, and utilization. The availability of food may be assured through either direct food production or well functioning distribution, processing and market systems that can move food from the site of production to where it is needed. Accessibility of food may be achieved through any acquisition pattern or entitlement through which people procure their food. And utilization more often is a culture of people which shapes or defined in principle and practice of how and when to use natural resources in the form of food.

The FAO Voluntary Guidelines to support the progressive realization of the right to adequate food in the context of national food security, FAO Right to Food Guidelines (hereafter) state in Guideline 8 Access to Resources and Assets: “8.1. States should facilitate sustainable, non-discriminatory and secure access and utilization of resources consistent with their national law and with international law and protect the assets that are important for people’s livelihoods. States should respect and protect the rights of individuals with respect to resources such as land, water, forests, fisheries and livestock without any discrimination. Special attention may be given to groups such as pastoralists and indigenous peoples and their relation to natural resources.”

The guidelines further state in Guideline 8B: “8.10 States should take measures to promote and protect the security of land tenure, especially with respect to women, and poor and disadvantaged segments of society, through legislation that protects the full and equal right to own land and other property, including the right to inherit. Such mechanisms should also promote conservation and sustainable use of land. Special consideration should be given to the situation of indigenous communities.”

Guidelines 8C on water lines out: “8.11 Bearing in mind that access to water in sufficient quantity and quality for all is fundamental for life and health, States should strive to improve access to, and promote sustainable use of, water resources and their allocation among users giving due regard to efficiency and the satisfaction of basic human needs in an equitable manner and that balances the requirement of preserving or restoring the functioning of ecosystems with domestic, industrial and agricultural needs, including safeguarding drinking-water quality.”

Guidelines 8D on Genetic resources for food and agriculture points out: “8.12 States, taking into account the importance of biodiversity, and consistent with their obligations under relevant international agreements, should consider specific national policies, legal instruments and supporting mechanisms to prevent the erosion of and ensure the conservation and sustainable use of genetic resources for food and agriculture, including, as appropriate, for the protection of relevant traditional knowledge and equitable participation in sharing benefits arising from the use of these resources, and by encouraging, as appropriate, the participation of local and indigenous communities and farmers in making national decisions on matters related to the conservation and sustainable use of genetic resources for food and agriculture.”
Also, Guideline 8E on sustainability spells out: “States should consider specific national policies, legal instruments and supporting mechanisms to protect ecological sustainability and the carrying capacity of ecosystems to ensure the possibility for increased, sustainable food production for present and future generations, prevent water pollution, protect the fertility of the soil, and promote the sustainable management of fisheries and forestry.”

It is necessary to clarify the relationship between right to food and access to and control over natural resources. This requires combining sound legal analysis with an emphasis on resource access dynamics at both policy and practical levels.

Access to and control over natural resources is defined as the processes by which people, individually or collectively, are able to use natural resources for their livelihood either on a temporary or permanent basis. These processes include participation in both formal and informal markets. Not only this but also may be the participation for access to resources through kinship and social networks, transmission of resource rights through inheritance within families and resource allocation through state policy and laws. And also the policy provisions that prioritize the rights of women, marginalized and disadvantaged groups of people.

Rights to access natural resources often contribute to shaping range of property entitlements, including use rights (Sen 1981). Property entitlement hence matters importantly to determine the extent of access to natural resources. The “customary” resource-tenure systems are often an important part of analysis when talking about the property entitlements. This practice is more prevalent in the rural areas. This system claims to draw its legitimacy from long experienced traditions and belief. The resources tenure system under this practice is by nature extremely diverse and mostly based on the practices chained from their clans or families. Every form of decisions is based on their existing traditions and practices. It also poses a kind of resources management and utilization knowledge. It is more often a communal in nature.

Talking about the access to natural resources from state’s legal and regulatory provisions, customary practices have not been well recognized and established. It oftenly excludes traditional custodians to access and control over natural resources because of a lack of legal awareness, power asymmetries or other factors (Gurung 2007). In many cases it is prevalent that the traditional custodians do not have legal rights for access and control over natural resources but are enjoying resource access through social relations of kinship, alliance and reciprocity, local tenure systems, or some time traditions. Such systems may not be backed up by legislation or any legal procedures but are perceived as legitimate from their eyes. Therefore, improvements in resource access may require consideration of such practices as property entitlements for access to resources. They may require a greater legal recognition. A major step in
3.3.2.1 Linkages between the Right to Food and Water Resources

Water resource are one of the most important means of food for most of the rural communities, either through direct harvest of water/resources or an economic use of water/resources.

a) **Fishing:** Many of the rural people, particularly the indigenous communities, in Nepal are by traditional occupation relying on the fishing activities. So, water resource is their means of livelihood. Water resource for such communities is river, ponds, lakes, and seas. They harvest fishes in these water sources for both purposes: for family consumption and for consumers in the market. Here, the fishing rights hence can be viewed from two perspectives. One is fishing as business (for profits from market consumers) and fishing for family survivals and rituals. Talking about fishing communities in Nepal (like Bote, Majhi, Sonahas etc) their fishing occupation is not for the business rather they are traditionally fishing communities relying on fishing activities for their family survivals. In this case, fishing is their tradition and must have customary rights at least for their survival and hence can be called their human rights. This means their right to food is dependent upon to what extent their customary fishing rights have been ensured and guaranteed by the state's policies and legal provisions.

b) **Irrigation for agriculture:** The country's statistics shows that still majority of population (74% according to the GN/NPC 2010) in Nepal are by occupation the farmers and most of them are small and marginal farmers. It is also estimated that one third of the Gross Domestic Production (GDP) also comes from this sector (GN/NPC 2010:71). It means farmers, mostly are relying on agricultural production form their farmlands. Hence, the irrigation comes in front when we talk about the agricultural production. There are two forms of irrigation: one is traditional irrigation system initiated and managed through customary laws; and another is modern irrigation that is initiated by either the government or any other organizations/companies. It is fact that many of the rural farmers have their own irrigation management systems, rules, norms, values and practices. At the same time, recently government and other actors have also been involving in a number of irrigation projects targeting to increase agricultural production and productivities of farmers. Similarly, the irrigation facilities also can be seen from the cost and benefit sharing mechanism among the users or beneficiaries. This means whether all sections of societies have been benefitted equitably and justiciably from the irrigation program, because all individuals and social groups necessarily may not have equal power, influence and capacity to exploit irrigation facilities. In addition to this, an irrigation project may be different for different families and communities in terms of its costs and benefits.

c) **Water related traditional occupations:** People in different parts of the country are also dependent upon water resources for their traditional occupations as means...
of livelihood, such as running water mills (like grinding mills or traditional saw/wooden craft mills). Until and unless either their traditional skills or knowledge is identified, recognized and capacitated or alternative skills and capacities are enhanced for such communities/families; their right to food of course will be in crisis. In this case right to food is always based on whether either their traditional occupation have been identified, recognized and capacitated or alternative skills have been enhanced to them.

d) **Water related modern businesses:** Water resources have been becoming major sources of business for most of the modern societies. For example, water resources for hydropower, fishing industry, irrigation, boating and rafting, and other recreational purposes. Many of the profit making companies, government, and donor agencies have been investing their capitals in water resources with the motives of gaining interests. So, the earning or income from such activities may be one of the means to safeguard the right to food for concerned communities.

e) **Drinking water:** Drinking water is one of the most basic human rights agreed by global society. However, there are some cases in which right to drinking water has not been ensured in both policies and practices in different names like somewhere/sometime in the name of national interest and sometime/somewhere in the name of development. In some cases, it is also happened in the privatization and nationalization of water resources. So, ensuring drinking water is one of the most important parts of right to food from human rights perspectives.

### 3.3.2.2 Linkages between Right to Food and Forest Resources

There are mainly three areas that directly contribute in food security of the majorities of forest dependent communities: income and production from livestock management; income and consumption from the collection of edible foods from forest; income from employment and funds mobilization.

a) **Forest resources as pasture land:** Public forests have special importance for livestock farming and livelihoods for mountain people in Nepal. Historically, land areas suitable for crop production were privatized, while less productive and environmentally sensitive lands were managed as public or communal property for producing multiple products and services like firewood, fodder, pasture, timber, littered leaves, and other non-timber products (Fisher 1991 and Fisher and Gillmor 1991, and also see Regmi 1978). As a result, almost all Nepalese farmers have no private pastureland. Instead, the farmers graze livestock in forests, or tree limbs are lopped during seasons of animal feed deficits (Graner 1997; Ives and Messerli 1989). The public lands which are less potential for timbers or large trees have been used as public grazing lands. Such public lands hence directly and indirectly contribute in their food production. The direct support of such public grazing lands is in their number of livestock and agricultural inputs in their farmlands. About 10 percent of Nepal’s land area is alpine pasture. Farmers in high mountain region feed livestock on alpine pasture during the summer season and, move the animal to lower hill forests during the winter (Graner 1997; Metz 1994; Mahat et al. 1987). The mobile herds would contribute to farm fertilization during the winter season. With this system, households with marginal landholdings were
able to manage their livestock and maintain food security. For this, promoting and enhancing indigenous pasture management system is a must (Thapa 1993).

**b) Livestock**: Livestock generally contributes a greater share of total household income for poorer households compared to richer ones. Overall, livestock provides a hedge against starvation and extreme poverty, particularly for isolated mountain communities (Riethmuller 2003). Livestock are the main source of income to purchase market goods including food, and they provide a means of farming business diversification and a hedge against risk (Fafchamps and Shilpi 2003). In addition to providing food directly in the form of milk and meat, livestock also provides important services such as power for ploughing and food transportation (Mahat et al. 1987). Similarly, farm manures are the sole means of soil fertilization in areas that are remote from roads, and where farmers are unable to afford fertilizer (Pilbeam et al. 2000; Paudel 1992; NPC 2003). The breakdown of the traditional management regime and growing demand for wood led to large amounts of deforestation, which coincided with heavy rainfall, landslides and flooding in lower areas including Bangladesh in the 1970s and 1980s (Ives and Messerli 1989). The mountain farming system, especially the livestock component, was identified as the main culprit behind the degradation of mountain forests. Policy makers determined that, the main causes of forest degradation are overcutting of wood for fuel and heavy lopping of trees for fodder (Master Plan Main Report 1988: p. 31).

**c) Edible wild foods including NTFP**: Many of the people in Nepal are dependent upon the edible foods from the forest. They collect wild fruits, vegetables, yams and other wild foods from forest for direct consumption. Many of the communities, particularly the nomadic indigenous communities, such as Rautes, are highly dependent upon the wild foods. They have their traditional skills and knowledge of collecting and consuming the wild foods. In the other hand, many of the communities including nomadic indigenous communities are also earning their living by collecting and selling wild vegetables. Similarly, many of the communities are also benefiting from Non Timber Forest Products (NTFP). They are earning their living from NTFPs and related economic activities. But the different forms of forest resources management systems, like PA, community forest, wild life reserve, national forest, protected forest etc, have diverse impacts upon the livelihoods of local communities, particularly the traditionally forest resources dependent communities. Such as communities/people in and around the Buffer Zone areas in Nepal.

**d) Income generation from forestry practices**: It is equally important to understand that how many of forest resources dependent people are earning their living from forest resources related income generating activities, like handicrafts, running resorts, picnic sports, recreational centers etc. Similarly, many of the traditional communities are also dependent upon their traditional occupations for their livelihoods such as Amchi in mountain areas in mid-west Nepal.
4. The Right to Food in International Legal Framework

4.1 General Policies and Legal Instruments

Talking about the international policy instruments for the right to food, discussions about the existing international treaties, conventions, covenants, and decisions as legal instruments is important (see annex 1 for details of right to food provisions in different documents).

a) **Universal Declaration of Human Rights 1948 (UDHR):** See cited and discussed in the earlier chapter that highlighted on the ‘right to food’ as universal rights of human beings.

b) **International Covenant on Economic, Social and Cultural Rights 1966 (ICECR):** See cited and discussed earlier that highlighted on human’s universal economic and cultural rights. In addition, the article 11(1) for ‘adequate standard of living for a person and his family, including adequate food, clothing and housing, and to the continuous improvement of living conditions of the right of everyone'; article 11(1) for ‘free from hunger'; article 11(1)), for ‘distribution and conservation of food, efficient utilization of natural resources' are important.

c) **The Convention on Indigenous and Tribal Peoples, 1989 (ILO 169):** This convention emphasizes the rights of indigenous peoples, both the individual and collective, to maintain and strengthen their own institutions, cultures and traditions and to pursue their development in keeping with their own needs and aspirations. By these provisions, the indigenous peoples can freely determine their economic rights including cultural, social and political one. The preamble of this document recognizes the 'existing ways of life and economic development for indigenous people' as most important thing. The importance of this document is to make provision to 'safeguard land rights' (Article 15[1]), which includes rights to participate in the use, management and conservation of these resources for indigenous peoples. Similarly, ‘a right to get benefits and fair compensation from the exploration and exploitation of any resources pertaining to their lands' is provisioned in article 15(2). In overall, this document safeguards the rights of indigenous peoples over natural resources.

d) **United Nations Declaration of the Rights of Indigenous People (UNDRIP) 2006:** The article 20[1 & 2] of this document identifies and states ‘the rights to maintain and develop freely of their traditional and other economic activities' and ‘rights to get just and fair redress against any form of deprivation of their means of subsistence and development’ as most basic to their life. The ‘rights to own, use, develop, and control the lands, territories and resources which they have traditionally owned, occupied or otherwise used or acquired' as rights of indigenous peoples (Article 26[1 and 2]). Similarly, article 26 and 27 also provisioned ‘to respect customs, traditions and land tenure system of indigenous peoples' as state's responsibilities.

e) **Convention on the Protection and Use of Transboundary Watercourses and International Lakes, 1992:** This convention is most important in terms of water resources related issues for two or more than two countries. The article 1 of this
man-made or natural water which marks, crosses or is located on boundaries between two or more States". According to this convention, one State should not harm to another while its water resources related activities. The Article 2(6) of this convention says like this “Riparian Parties shall cooperate on the basis of equality and reciprocity, in particular through bilateral and multilateral agreements, in order to develop harmonized policies, programs and strategies covering the relevant catchment areas, or parts thereof, aimed at the prevention, control and reduction of transboundary impact and aimed at the protection of the environment of transboundary water or the environment influenced by such water, including the marine environment”.

f) **Convention on the Law of the Non-navigational Uses of International Watercourses 1997**: The preamble of this convention says that “…..Aware of the special situation and needs of developing countries…….”. This means situation of the developing country is well considered in the conventions. There are provisions as obligation not to cause significant harm; eliminate or mitigate harm where appropriate, discuss the question of compensation, information concerning planned measures, and Notification concerning planned measures with possible adverse effects. These provisions have safeguarded the rights of people concerning with the water resources that come in close to the States.

### 4.2 Protected Area Related Policies and Legal Instruments

It is estimated that more than 13 percent of the earth's land mass is covered by protected areas. And in terms of access, benefits and impacts, there is an often debate over the declaration and management of these protected areas. Mostly, the debates are more critical from the traditional livelihood rights of indigenous peoples and local communities in and around the protected areas (Waste et al 2006, Rai 2011a, Paudel 2006). This form of critics had started from the world’s first protected area (Yellowstone National Park in 1872 in America) and is still continuing. Regarding the reduction of negative impacts of PA, park-people conflict, and successful management of the protected areas, number of international laws, treaties, decisions etc have been formulated and under implementation. Some of the major instruments and the important provisions are identified and discussed below.

a) **The Conventions on Biological Diversity (CBD), 1992**: The CBD is an important international landmark for the participatory conservation of nature, natural resources, particularly the biodiversities in the world. Some of the provisions in this document are equally important for the rights of indigenous peoples and marginalized communities for their access and benefits from the conservation. The provision in this convention has clearly recognized the customary use and management rights of the resources and biological diversity. The preamble of this article recognizes ‘sustainable use of biological diversity linking with the importance for meeting the food, health and other needs of the growing world population’ as most basic to this document. The article 10(c) further clearly states about the provision for the protection and encouragement of the customary practices that are compatible with conservation work.
b) World Park Congress (WPC) Decision, 2003: The 5th WPC\(^6\) in Durban (known as Durban Accord and Durban Action Plan) Africa (8-17 September) in 2003 fully acknowledged and emphasized the social-cultural and human aspects of conservation. The Durban accord and action plan clearly emphasized the essence of social equity, justice, rights, participation and livelihood concerns, and of governance in relation to PAs. For example, of total 15 targets set forth in the Durban, four of them are most important in terms of the rights of indigenous peoples, local communities and youths. The Durban accord in its “Call for Commitments and Actions” states ‘incorporation of the rights, interests and aspirations of both women and men; involvement of local communities, indigenous and mobile peoples in the creation, proclamation and management of protected areas; opportunity to participate in relevant decision-making and commitments to share benefits with indigenous peoples, mobile peoples and local communities’ as its commitments of actions. Similarly, the ‘Main Targets’ (of total 15): Target 8, 9, 10 and 11 are important for the rights of indigenous people and local communities. Such as it states that all existing or future PA management fully compliance with indigenous peoples and local communities (Target 8 and 9); free and informed consent (Target 10); and participation of younger peoples in the governance (Target 11).

c) CBD Conference of Parties (COP): To date the CBD COP\(^6\) has taken a total of 299 procedural and substantive decisions. The decision of the most recent 10th COP to the CBD at Nagoya, Japan in 2010 has recognized the need to establish effective processes for the full and effective participation of indigenous and local communities, in full respect of their rights and recognition of their responsibilities, in the governance of PAs. Similarly, the target about equitable benefits sharing is another important component of this meeting. Of total 20 set targets of this meeting, target 14 (relevant for rights to benefit) and target 18 (relevant for participation) is the most relevant examples.

d) IUCN World Conservation Congress (WCC): The International Union for Nature Conservation of Nature (IUCN)’s fourth WCC\(^7\) in 2008 witnessed the approval of a total 138 resolutions and recommendations by the general assembly. Some of the issues were significantly important for the rights and concerns of indigenous peoples and local communities, namely implementation of earlier legal provisions, rights of community over resources including territory, participation in decision making processes, economic development etc. Of total 20 set targets, target 14 (taking into account the needs of women, indigenous and local communities, and the poor and vulnerable) and target 18 (full and effective participation of indigenous and local communities, at all relevant levels of conservation activities) are related with the rights of local communities and indigenous peoples. Resolution and recommendations of 4th WCC in Spain in 2008 is equally important which are about ‘supporting indigenous conservation territories; their rights for sustainable livelihood; and consider their economic and cultural impoverishments’.

e) IUCN Protected Area Governance Categories 2008: Quite recently the increasing number and size of PAs has become a frequent debate for all, including conservation professionals, policy makers, planners, politicians, advocates, researchers and so on. The governance framework of PA may be one of the important means to provide way forward for the resolution of existing disputes and debates. It is our
general understanding that state/government agency is responsible actors for the management of all PAs. But PA governance categories identified by IUCN has become an important policy guidelines to recognize and respect the roles and participation of indigenous peoples and local communities when talking about the management of the PAs. The guideline clearly states that “….The relevant indigenous peoples and/or local communities are closely concerned about the relevant ecosystems – usually being related to them culturally (e.g., because of their value as sacred areas) and/or because they support their livelihoods, and/or because they are their traditional territories under customary law” (Dudely 2008:29). Here, indigenous peoples and local communities are recognized as custodians to the conservation, management and unitization of benefits from biodiversity conservation.

f) **CBD Program of Work on Protected Area (PoWPA), 2004:** The key elements adopted by 7th COP to CBD\(^9\), known as PoWPA, is considered as landmarks towards a paradigm shift in international policy processes in PA management (Balasinorwala et al 2004). PoWPA stated its some specific targets and intended actions under 16 goals and 4 elements. Program element 2 on ‘governance, participation, equity and benefit-sharing’ is one of the key components that underpin the rights, participation and benefit sharing in relation to the ‘indigenous and local communities’. Of total 16 set goals and actions under these goals, some are significantly relevant to the rights and participation of indigenous peoples and local communities. For example, goal 2 states like this “To enhance and secure involvement of indigenous and local communities and relevant stakeholders”. The target of this goal is “Full and effective participation by 2008, of indigenous and local communities, in full respect of their rights and recognition of their responsibilities, consistent with national law and applicable international obligations, and the participation of relevant stakeholders, in the management of existing, and the establishment and management of new, protected areas”. To achieve this target, 5 activities, with basic focus on the participation of indigenous peoples and local communities.

**Analysis of the International Legal Instruments**

The rights of indigenous people and local communities over their natural resources and traditional land territory have been clearly provisioned in almost all of the international legal instruments. Moreover, their rights over resources and benefits from protected areas, their recognized participation in conservation activities, and recognition of their traditional and customary rights have been well defined and recognized in almost all of the legal instruments. These provisions have ensured the rights to access to and control over natural resources for indigenous peoples and local communities, which ultimately supported to safeguard and guarantee their right to food.

However, the studies and analysis shows that most of the states are not able to develop appropriate policies that comply with the international instruments mostly because of the lack of political wills and states’ capacity to implement the rights provisions (Pinstup-Andersen et al 1995).
5. **The Right to Food and Access to Natural Resources: National Plans, Policies and Legal Instruments**

5.1 **Constitutional Provisions**

5.1.1 **The Interim Constitution of Nepal 2007**

The fundamental rights (total of 32 inumber) of this constitution clearly states about the rights of its citizens. The most important fundamental rights that are related with the rights of citizens are rights to basic livelihoods, including right to food and the rights of indigenous and marginalized communities for their development. The constitutional provision about the “State Policy” and “State Responsibility” are also equally important components of a constitution. Regarding this, the interim constitution of the country has clearly mentioned about the “participation of indigenous peoples and local community” as priority in the management of natural resources and state’s policy for food security of marginalized people.

The preamble of “The Interim Constitution of Nepal 2007” clearly mentioned the term “guaranteeing the fundamental rights” as one of the most important things of the constitution. It indicates that every individuals/citizens in the country have constitutional rights to live with safeguarded universal human rights. The interim constitution clearly mentions about the right to food sovereignty and access to and control over natural resources.

<table>
<thead>
<tr>
<th>Table 3: Right to Food provisions in Interim Constitution 2007</th>
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<tbody>
<tr>
<td><strong>Constitutional Provisions</strong></td>
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<tr>
<td>• commitment for fundamental rights and human rights (Preamble)</td>
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<tr>
<td>• special provisions by law for the protection, empowerment or advancement of the marginalized groups (like women, Dalits, indigenous ethnic tribes) (in fundamental rights in Article 13[3])</td>
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<tr>
<td>• policy for rights food sovereignty, including rights to education, health, housing, employment (as responsibility of State in Article 33[h])</td>
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<tr>
<td>• policy of giving priority to the local community while mobilizing the natural resources (in State Policy in Article 35[4])</td>
</tr>
<tr>
<td>• State policy to uplift the economically and socially backward indigenous ethnic groups [Adivasi Janajati], by making provisions for reservations in different sectors including food security (in State Policy in Article 35[4]) and 25[5])</td>
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5.1.2 **Draft Reports of Former CA Thematic Committees**

Although the CA has been dissolved without promulgation of new constitution, the draft reports of former CA 11 Thematic committees can be taken as one of the historical political debates for the human rights, including right to food. Many of the CA thematic committees draft reports have clearly mentioned about the issue of right to food and access to and control over natural resources of marginalized communities. Based on the contents of the draft reports, it can be said that the right to food issue has been addressed in most of the CA draft reports one or another way. Most importantly, the
terms of references given to the “Committee for Fundamental Rights and Directive Principles” and “Committee on Natural Resources, Economic Rights and Revenue Allocation” are closely related with the right to food and right to access to and control over natural resources. These two thematic committees have extensively addressed these issues.

Three important things related with right to food (namely commitment to human rights, access to natural resources and participation in decision making processes) have been clearly recognized in the draft reports. Almost all of the draft reports have one or another way addressed the issue related with right to food in either in the preamble or the fundamental rights or in the state’s policy and responsibilities. The important thing is that there is no any contradiction and debates between the CA members, committees, and political parties over the issue of right to food as fundamental rights of each citizen.

The access to and control over natural resources (to be specific, water and forest in this study) is an important part of right to food. The four components (availability, adequacy, accessibility and sustainability/stability) of right to food are more often based on this issue. Most of the CA draft reports are clear enough to address this issue. The traditional and customary use rights of natural resources, rights to equitable benefits sharing for indigenous peoples and community rights over natural resources have been clearly mentioned in most of the former CA draft reports (Rai 2010a and 2010b). Similarly, the rights of marginalized groups like indigenous peoples, Dalits, women, Madhesis etc have also been clearly mentioned in most of the former CA draft reports. However, some contradictions about rights to access natural resources exist in the concept papers. For example, the provision recommended by “Committee for Fundamental Rights and Directive Principles” about the preventing the use of natural and economic resources only for a caste/ethnic groups in its Directive Principles of State [Article 12] may create contradiction on whether indigenous peoples will have customary use rights over natural resources or not. If they have, defining of this point may create some kind of contradiction and confusions.

Another important part of the constitution is the emphasis on people’s participation in decision making processes. Most of the draft CA draft reports have prioritized the equal and proportional participation of marginalized communities in different section of the state affaires including the political parties for their legislative election. Principally, the equal participation is for their roles and contribution in decisions related with their concerns and issues. In overall, the draft reports have sufficiently addressed the access to and control over natural resources and the right to food of marginalized communities.

5.1.3 Constitutional Provisions and Constitution Building Process: Some Policy Concerns

It is long experience that formulated laws, policies and programs have not been well implemented in Nepal. For example, despite progressive policies the state’s policy on gender and caste/ethnicity based discriminations has not been successful in Nepal yet. At the same time, the Nepal’s multi-lingual, multi-cultural and geographical diversity
is another challenge in making any program a success. Because, awareness about
the program and capacity enhancement for the program implementation to diverse
peoples is itself a great challenge but compulsory. Similarly, the diverse interest of the
different actors like political leaders, activists, researches, farmers, businessman/woman,
and bureaucracies is another dimension for a success. Until and unless these issues are
well settled the success either in terms of constitution formation/promulgation or the
implementation of laws and legislations based on the spirit of constitution is often in
a challenge.

The former CA Thematic committees prepared and submitted their draft reports to the
CA. But the political parties of the country unable to promulgate new constitution and
the political polarization (namely state restructuring) indicate that the consensus for
new constitution is yet far from the possibility.

The most important thing is the debates and contradiction was already there in the CA
draft reports. All constitutional provisions in the CA draft reports were not accepted
and agreed by all CA members. More than hundreds of different issues were not settled
during the draft reports preparation and submissions. Some political parties are still
against the ongoing constitution making process (specifically the political parties those
who are against the federalism). Moreover, inter & intra-party fractions and disputes,
governmental instabilities, and political polarization because of the disagreements in
the state restructuring have furthering the crisis of new constitution promulgation.

5.2 Periodic Plans and Programmes

Planned development effort in Nepal was begun shortly after the political reforms
in 1951. Prior to 1951, the main focus of the government was a revenue collection.
However, the government after 1951 had placed its emphasis in dissolving the pre-
existing feudal agrarian system and developing agriculture through various reform
measures. Accordingly, the Tenancy Rights Acquisition Act 1952 was enacted and
a Land Reform Commission was commissioned to take up problems on tenancy
rights, land revenue and agricultural credit. The year was also crucial as a first step
of government policy towards ensuring adequate food production by creating the
Ministry of Agriculture and two separate departments for Agriculture and Irrigation
to look after the sustainable development of agricultural production and irrigated
agriculture. In 1955, a thirteen point program largely to safeguard the interest of the
farmers was declared by the government. Then the first five year development plan was
implemented in 1956. So far 12th development plans (12th interim plan- 2010-2013)
have already been launched. All the periodic plans have given agriculture as the top
priority sector of the economy and irrigation as the major component of investment.
Various policies and strategies for increasing agricultural production (food production)
were taken up by the government in each plan.

<table>
<thead>
<tr>
<th>Periodic Plans</th>
<th>Objectives</th>
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<tr>
<td>Seventh Plan (1985-1990)</td>
<td>• To increase production at a higher rate.</td>
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<td></td>
<td>• To increase opportunities for productive employments, and</td>
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<td></td>
<td>• To fulfill the minimum basic needs of the people.</td>
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Table 4: Objectives of the periodic plans (7th to 12th)
The concept “participation of local communities” gradually gained attentions in the resources management (namely forest and water) in the late eighties. It also slowly and gradually expanded into the PA management system by introducing the concept and practices of BZ management in the early nineties. Then, the number of laws, rules and regulatory frameworks were formulated and implemented in the country. For example, Water Resources Act (1992), Water Resources Regulation (1993), Forest Act (1993), BZ Management Regulation (1996), Community Forest (CF) Regulation (1993) etc. Through these legal frameworks, the attempts were made to create policy environment to enable and foster user groups and water user group participation in resources management schemes.

One of the three objectives of the Seventh Five Year Plan (1987-1992) was to fulfill basic needs of the people. The eight five year plan (1992 to 1997) in Nepal also prioritized poverty alleviation as its one of the three major objectives. It adopted eight strategic policies19 to achieve the set goals and objectives. It was then continued in the next two five year plans (Ninth Five Years Plan 1997-2002 and Tenth Five Year Plan 2002-2007). However, priority in the later national plans (namely Tree Year Interim Plan 2007-2010, and Three Year Plan Approach Paper 2010-2013) have adopted ‘peace and reconstruction’ as major objectives. The Three Year Plan Approach Paper identified seven priority sectors. Of them, fourth was to address ‘food security’20 as one of the components (GN/NPC 2010: 18-21).

<table>
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<tr>
<th>Plan</th>
<th>Objectives</th>
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| Eighth Plan (1992-1997) | • Sustainable economic growth  
   • Poverty alleviation, and  
   • Reduction of regional imbalances |
   • Improvement in the living standard of the poor community.  
   • Launching sectoral and targeted programmes in a coordinated, integrated and effective way. |
| Tenth Plan (2002-2007) | • To alleviate poverty by mobilizing optimally the means and resources on the mutual participation of government, local agencies, non-governmental sectors, private sector and civil society to extend economic opportunities and open new ones enlarging employment opportunities and widen the access to means and economic achievements for women, Dalits, peoples of remote areas and poor and backward groups through programmes like empowerment, human development, security and targeted projects thereby improve the status of overall economic, human and social indicator. |
| Three Year Interim Plan (2007-2010) | • To generate an experience of a direct feeling of change in the lives of the general public by supporting in the establishment of peace and reducing the existing unemployment, poverty and inequality in the country. |
| Three Year Plan Approach Paper 2010-2013 | • To enable people to feel change in their livelihood and quality of life by supporting poverty alleviation and establishment of sustainable peace through employment centric, inclusive and equitable economic growth. |
5.2.1 Water Related Policies and Programs

Water resource has become one of the priority sectors of periodic plans and programs in Nepal since the beginning of planned development. The expansion of irrigation facilities to increase agricultural production and productivities has been considered as major concern of all most all of the periodic plans in Nepal.

a) Seventh Five Year Plan (1985-1990): Talking about irrigation, this plan was focused on increasing irrigation facilities by launching small and medium type of irrigation programs indifferent parts of the country. Peoples’ participation was sought in river control works but not in the irrigation programs.

b) Eighth Five Year Plan (1992-1997): As stated earlier that one of the three major goals of this plan was to reduce poverty. Irrigation then was linked with the improvement of agricultural production. Along with increasing irrigation facilities to the farmers, this plan adopted the policy priority of involving/participating users in all steps of irrigation projects. The priority was also given in the joint management of irrigation management, including the policy to encourage the involvement of private sectors.

c) Ninth Five Year Plan (1997-2002): In this plan, irrigation projects were linked with the improvements of the life standard of the people that is through the increasing agricultural production and productivities of the farmers. This plan adopted the irrigation policies envisioned in the Agriculture Perspective Plan. To be specific, adoption of farmer’s demand based program, participation of users in all steps of irrigation project, transfer of irrigation management system to the users, ensure women’s participation in management and collection of service charge from users themselves for their own use were progressive irrigation policies ever in the development plans in Nepal.

d) Tenth Five Year Plan (2002-2007): This plan also further reinforced the participation of users, adopt agriculture perspective plan, users’ centered projects, management transfer to the users, and encourage private sector’s involvements; this plan further added the policy to create employment opportunities in agriculture sector by increasing irrigation facilities and construction works itself. This plan also adopted the policy of enhancing management capacity to the users.

e) Three Year Interim Plan (2007-2010): In this plan, the main objective was slightly switched from its previous priority of poverty reduction to peace and reconstruction. However, the irrigation related policies were same as to the previous, i.e. priority in user’s participation and management transfer to the users.

f) Three Year Plan Approach Paper (2010-2013): Regarding irrigation, this approach plan adopted the policy of multipurpose, like poverty reduction, environmental conservation, employment opportunities, with priority to the user’s participation in all steps.
5.2.2 Forest Related Policies and Programs

A Forest resource has often been recognized as one of the priority areas of most of the periodic plans in Nepal since long time. Almost all of the periodic plans have adopted forest policies as sources of fulfilling people's basic needs. This policy was adopted to strategically ensure it through the people's participation in forest resource management and utilization.

a) **Seventh Five Year Plan (1985-1990):** This plan recognized deforestation as most important problem and hence prioritized the tree plantation. The scientific management of forest was priority policy. This plan also adopted the policy of integrating forest and soil conservation.

b) **Eighth Five Year Plan (1992-1997):** As stated earlier that one of the main three objectives of this plan was poverty alleviation, the plan adopted the policy of managing forest resources for meeting basic needs of the people. Moreover, the introduction of the policy of community peoples' participation in forest resources management, namely in Community Forestry, was ever most important development policy in Nepal. Not only the community peoples participation, this plan also adopted the policy of encouraging other actors, like private actors in the forest resources management. In addition to this, policy to encourage agro-forest and farm-forest was adopted with aim of reducing pressure on national forest. This plan adopted all of the forest policies envisioned in the Master Plan for Forestry Sector 1989.

c) **Ninth Five Year Plan (1997-2002):** Again, one of the major objectives of the plan was poverty reduction and hence policy on forest resources management was to fulfill the basic needs of the people. It also continued the policy of people's participation in community forest management. In addition to the previous policies, this plan adopted the policy priority of generating employment opportunities to the resources dependent marginalized communities, including women, poor and disadvantaged groups.

d) **Tenth Five Year Plan (2002-2007):** This plan also adopted almost all of the previous forest policies, like inclusive participation, fulfilling basic needs, creating employment opportunities to poor and disadvantaged, encouraging private sector etc. In addition, this plan adopted the policy of social justice and good governance as another policy priority.

e) **Three Year Interim Plan (2007-2010):** Talking about forest policy, this plan also adopted almost all of the policies adopted in previous plans. In addition to these, justifiable and equitable benefit sharing on the basis of international treaties, conventions, declarations and agreements were most important policy landmarks in comparison to previous ones. This plan prioritized community forestry as means to improve economic conditions of poor and marginalized. By policy this plan also encouraged the establishment of micro-entrepreneurship to the poor and marginalized communities.
f) Three Year Plan Approach Paper (2010-2013): As this plan stated that at least 40% of land areas to be managed as forest areas in Nepal and controlling the encroachment of forest areas, it can be said that this plan prioritized the expansion of forest areas in Nepal. Similarly, this plan also adopted the people's participation in forest management, increase employment opportunities, inclusive management structure are prioritized policies.

5.2.3 Conservation Related Policies and Programs

Conservation related policies in periodic plan seems changing their priority over the years and decades. At the beginning people's participation was not taken as policy priority in conservation. But the development policies in the later days have recognized people's participation as one of the important components of conserving biodiversity and natural resources.

a) Seventh Five Year Plan (1985-1990): This plans prioritized the conservation of environment and ecology as policy priority. Its major policy priority was to educate peoples about the importance of conservation. However, encouraging the participation of non-governmental organization and people was also stated as conservation policy.

b) Eighth Five Year Plan (1992-1997): This plan directly or indirectly prioritized the expansion of protected areas in Nepal as its one of the objectives. It was envisioned through the development of peoples’ faiths about the needs and importance of protected areas. In addition to this, the plan aimed to document traditional knowledge and skills on conservation, raising conservation awareness as another domain of conservation policy. Promotion of public participation in conservation and management of national parks, and priority to generate local employment opportunities were most appreciated conservation policies.

c) Ninth Five Year Plan (1997-2002): In terms of conservation policy and programs, some of the policy priorities were very important. For example, policy provisions of sharing at least 30-50% of conservation benefits to the local communities were a very important paradigm of conservation. Moreover, prioritizing participatory conservation modality, namely buffer zone management practice and policy of utilizing indigenous technologies, knowledge, values and experiences in conservation area were most important.

d) Tenth Five Year Plan (2002-2007): This plan clearly stated the sustainable development through environmental conservation and raising awareness as part of policy priorities. Similarly, adopting the integrated approach (namely landscape and watershed level) of conservation was another part of policy importance. Adopting Local Self Governance Act 1998 to encourage the participation of local people in conservation area management were equally important.

e) Three Year Interim Plan (2007-2010): Introducing people's rights based approach in conservation was one of the most important conservation policy adopted in this plan. Similarly, adopting the policy about the access and rights to benefits from
bio-diversity conservation to poor and marginalized group of people on the basis of international treaties, conventions, agreements etc has equal importance in the eyes of marginalized, disadvantaged and protected area affected communities. Participatory conservation was also equally prioritized policy in this plan.

f) Three Year Plan Approach Paper (2010-2013): This plan aimed to increase conservation areas, including landscape level conservation approach. Adopting the policy of balancing between the conservation activities and livelihood rights of local peoples, namely poor and marginalized communities, is most important policy. Similarly, conservation through upstream and downstream linkages is also equally important.

5.2.4 Strengths and Weaknesses of Periodic Plans

It is noted that almost all of the periodic plans and policies in Nepal have given a significant importance on resources and conservation of natural resources. Talking about water resources and irrigation, the periodic plans have mostly focused on contributing to increase agricultural production with the aim to improve livelihood of people and reduce poverty. Along with these, the plans have gradually focused on the policy priority for people's participation, demand based irrigation, improve employment opportunities, multi-sector involvement including private sector, irrigation system management transfer to users after the completion of project. However, the plans could not address the identification and recognition of traditional and customary laws, practices and rights over resources and also the inclusion of diverse socio-cultural sections like gender and caste/ethnic groups.

Regarding forest resources, periodic plans have shifted their priorities from pure forest conservation to the livelihood supporting conservation. The forestry sector plans have gradually been prioritizing the people's participation, employment opportunities for poor and disadvantaged groups, involvement of multiple actors, agro-based forestry, social justice and good governance, equitable benefit sharing, respect of international legal instruments. These means most of the recent forest sector plans in Nepal have been prioritizing the concerns and needs of local communities. However, there is still lack of real participation that is participation of all sections of society in all levels like in decision making processes to implementation and monitoring. Moreover, identification and recognition of customary institutions and practices related with forest resources have not been addressed.

Talking about the conservation related plans and policies, people's participation, benefit sharing, and respect of international legal instruments have been becoming priority areas. However, the periodic plans have some weaknesses if they are analyzed from access to and control over natural resources for resources dependent communities for the implication to their right to food issue. For example, the traditional and customary rights of local communities and indigenous peoples to natural resources have not been well defined, identified and recognized in the plans.
5.3 Irrigation Policies and Legal Instruments

5.3.1 Irrigation Policies

The use of water resources is as old as human beings. The studies have shown that the people of Nepal have started to harvest water resources on the basis of availability of resources, geographical conditions, and the agricultural needs. The farmers in mountain have dug canal for bringing water from a nearby spring sources or river (locally called ‘khola’) to irrigate their land either from individual pursuits or collective efforts, whereas in the Terai areas big ponds are constructed to collect water during the monsoon for both irrigation and domestic water needs (Bhattarai et al 2002: 8). It is then seen that the number of formal irrigation policies, laws and programs, slowly and gradually, have been introduced and implemented in Nepal. These have produced a number of social, economic, cultural and political issues in irrigations systems and programs, namely the benefit sharing, participation in the decision making process, rights to access water resources, damage and compensation form irrigation constructions etc.

The establishment of the Department of Irrigation in 1952 and the emergence of planned development in 1955 in Nepal then gradually made the state/government responsible to construct and manage large irrigation systems. This initiative in one hand increased the irrigation facilities to the large agricultural land areas and in another hand it undervalued the long-time-existing traditional irrigation systems and dispute management systems (Bhattarai et al 2002).

The studies reported that the irrigation policies and laws adopted earlier in the country had curtailed the traditional and customary use and management rights of traditional users (households and communities). The critics appeared in the days said that the government managed irrigations systems were not appropriate in terms of service delivery, people’s participation, benefit sharing and development of people’s sense of ownership. It is now can be observed that the irrigation policies and laws prior to 1980s were slightly reviewed and revised in terms of the needs and demands of the time. Some of the relevant and important policies related with irrigation are briefly reviewed.

a) Irrigation Master Plan, 1989: This plan was prepared for irrigation development in Nepal. Participation of user groups in all steps of the irrigation projects management and development were most important policies initiated in this plan. This means this plan recognized the participation of beneficiaries in all stages of the irrigation projects. In one of its strategic policy states “Improve the process by which small and medium irrigation projects are identified, designed and constructed, through the adoption of farmer-initiated program such as the irrigation sector program, emphasize food grain production projects as much as possible in those areas having the greatest food deficit problems”. This plan has envisioned the full responsibility of irrigation projects by uses/beneficiaries after the completion of a project, distribution of benefits through irrigation services and involvements of multiple actors or stakeholders including private sectors as policy priority. Similarly, this plan also adopted the policy of making government responsible to construct medium and large scale irrigation programs supported by water user’s groups.
b) The Irrigation Policy 1992 (with its subsequent amendments, i.e. in 2003): This policy is most important in terms of recognizing the farmer’s indigenous system of irrigation construction and maintenance. This policy also equally important which initiated the formation and participation of farmers’ user group in irrigation system as essential component of irrigation construction and management. Similarly, transformation of irrigation system to the users association after the completion of the project and at least 20% women’s participation in the executive committee of association are equally important. This policy than is revised in 2003. On top of the previous policy provisions, this amendment aimed/aims to enhance institutional capacity to the user groups for sustainable management of irrigation systems, encourage all stakeholders’ participation and develop their capacity to strengthen their participation in planning, management and construction is another importance of this policy. This policy adopted the provision of institutional representation of uses through their organization Water User’s Association (WUA). The policy was adopted to expand irrigation benefits on the basis of famers’ demand. This policy also recognized the plurality of actors in the irrigation development and management.

c) Water Resources Strategy Nepal 2002 and National Water Plan 2009: In terms of access to water resources, namely irrigation, the Water Resources Strategy Nepal 2002 and National Water Plan 2009 are equally important. Their main goal was to improve quality life of the people through different targets including increasing agricultural productions. For this, the decentralization policies, namely participation of all stakeholders including users and local women’s groups were adopted as priority policy instrument. Moreover, the sharing of water resources’ benefits is an important component of policy principles. In overall, the participation of peoples in water resources related programs and sharing of water resources related benefits are most important policy envisions. Similarly, of many (total 12) policy principles, policy to encourage project affected people to participate in all steps of program or take ownership of the program; water sector development for ensure long term food security; socio-economically disadvantaged groups as target beneficiary of the project; inclusive participation including gender balance participation (e.g. at least 33% of women and marginalized people executive committees); enhancing common property resource management system as “social development principle” are another importance.

5.3.2 Irrigation Related Legal Instruments

Number of acts, regulations and other necessary legal instruments have been formulated and implemented to improve the irrigation facilities in Nepal since long time. These legal instruments are aimed to improve the irrigation services, ensure peoples/users’ participation, making users committee more inclusive in terms of structure and functions, capacity development of users for management of the system and so on. Some of the important legal instruments are discussed below:

a) Water Resources Act, 1992: This act provisioned the license system in water resources utilization, which can be taken as encouragement to increase potential benefits from water resources. Regarding license system, the provision for
compensation by constructors to the affected is also provisioned. However, for drinking and other domestic purposes like irrigation, running water mill or grinder, user of boat on personal basis for local transportation etc, the license for an individual or group is not required. The provision of Water User Association’s formulation and its institutional representation for their collective benefits is one of the most important legal provisions of this act. Article 5 (1) states “Persons willing to make use of water resources for collective benefits on an institutional basis may form a Water Users Association as prescribed 5 (Constitution of Water Users Association). Similarly, article 6 (1) states “Users Association shall be an autonomous and corporate body having perpetual succession (Water users Association to be a Corporate Body). So, water users association as collective institution is given with the institutional authority to have rights to acquire, enjoy, sell, dispose, or arrange by means of moveable and immoveable property. The most important legal provision of this act is about the transfer responsibility of irrigation system to the users after completion of construction.

b) **Water Resources Rules 1993 & Water Resource Regulation 1993:** The most important component of these legal instruments are to ensure the peoples’ participation in the structure of irrigation system, including making the users group capable and responsible to manage and operate their irrigation systems themselves. Similarly, this regulation based on the irrigation act and irrigation policy provisioned the importance of multiple actors in the irrigation system. Another important component of this regulation is to form Water Resources Utilization Investigation Committee (WRUIC) and its roles and responsibilities. The eight roles given to this committee are mostly focused on the priorities of the users, their interest; their existing water resources use patterns, and their responses against the proposed irrigation projects. We can say that these legal provisions have recognized the roles and responsibility of project to listen and prioritize the peoples’ voices and needs.

c) **Irrigation Regulation, 1999:** This regulation, based on the water resources act 1992, has addressed a number of social issues like participation of user groups and women groups, rights of both exiting users and new users, and so on. The most important thing of this regulation is to make water user association more responsible actor about the management of particular irrigation system. This regulation has also clearly provisioned the roles and responsibilities of both water users association and individual users. Hence, provision about the inclusive participation, irrigation services, cost sharing, involvement of multiple actors, are major legal components addressed in this instrument.

### 5.3.3 Identification of Strengths and Weaknesses of Existing Policies

**Some of the Strengths of existing water policies from right to food perspectives:**

- Priority on people’s participation in irrigation programs in all steps;
• Inclusive management structure (at least 33% women and socially excluded community);
• Emphasis on agricultural production and productivities;
• Provisions about the formation of user’s association as autonomous and corporate body;
• Provision of completed irrigation management system handing over to the use’s association;
• Provisions about the recognition of multiple actors and inclusive management structure;
• Encourage CPR management system as “social development principle”.

Some weaknesses in existing water policies from right to food perspectives:

• Lack of clear provisions about the existing traditional institutions and institutional systems;
• Lack of clear policy provisions about the customary laws and resources use rights;
• Lack of provision for free and prior informed consent rights;
• Lack of clear and concrete policy provisions about CPR governing system;
• Lack of clear provision for monitoring institution or structure that is accountable to the people/users.

5.4 Forest Related Policies and Legal Instruments

5.4.1 Forest Sector Policy

The forestry sector policies in Nepal have long history of shifting its governance and management paradigms. The pre-Rana rulers showed little interest in forest resources managements but in its contrast, the Rana rulers showed their focused interest on forest resources. A significant legal instrument that is credited to lay down the provision on forestry resources in Nepal is the Legal Code of 1854, formulated and implemented by first Rana ruler-Junga Bahadur Rana. This legal code talked about the ‘KATHMAHALS’, which was an office responsible for handling or managing timber trade in Terai). In practice, the Rana rules encouraged to increase human settlement in the forested areas with the interest to increase land revenues. They also exploited the forest resources for timber trading. Post-Rana period then adopted more regulatory policies on forest resources, like Private Forest Nationalization Act 1957 (with interest to preserve privately owned forest), Forest Act 1961 (aimed to manage small patches of forest under private forest), Forest Preservation Act 1967 (punish forest offences and prescribe penalties) etc (Regmi 1977, 1978, & Chhetri et al 2001). Increased rate of deforestation then introduced the new paradigm—“community forest”, of forest resources management in Nepal. It was begun with the National Forestry Plan 1976 (introducing the concept and practice of “Village Panchayat Forest”), and then development of Master Plan for Forestry Sector 1989 (MPFS) (Gilmour and Fisher 1991, & Chhetri et al 2001, Graner 1997).
The political transformation, along with the promulgation of new constitution, in 1090s (including first people’s movement) brought changes in resources management principles and policies. Namely, participatory resources management policies were introduced in Nepal. The new policies, acts and legislations on forest were then formulated and enacted. Similarly, the political changes after people’s movement in 2006 also brought important changes, namely federalization, in principles and policies of resources governance. However, many of the forest resources related policies and legal instruments yet to be changed.

The formal policy process for the forestry sector is carried out by the National Planning Commission (NPC) and Government of Nepal represented by Ministry of Forest and Soil Conservation (MoFSC). This is undertaken in consultation with the Forest Sector Co-ordination Committee (FSCC), the District Forest Co-ordination Committee (DFCC), Project Co-ordination Committee (PCC) and various other technical panels of forestry professionals.

Forestry policies, acts and regulations have been amended regularly to adjust to changing contexts. Most of the national policy drafts are prepared by MoFSC in consultation with the respective departments and DFCC. Although there are no specific guidelines, setting up formal organizational structure of the policy process, identification of stakeholders and evaluation, priority and objective setting, exploration and analysis of alternative solutions to meet the objectives, and preparation of draft policy and approval are general processes of policy formulation in Nepal. Some of the important forestry policies are discussed below.

a) **Master Plan for Forestry sector (1988) (MPFS):** MPFS was prepared in 1988/89 which presents an extensive strategy for 21 years for the management of forestry sector in Nepal. MPFS has identified sectoral issues and analyzed these against existing conditions. The plan has identified four long term and three medium term objectives to prepare a long-term development plan of forest resources in Nepal. The long-term objectives is related with meeting the basic needs of the people, protecting the soil and water resources, conserving ecosystems and gene bases and consolidating local and national economies. These objectives have led to framing the six primary development programs. It has mainly four development imperatives: a) satisfaction of basic needs including medicinal herbs, b) sustainable utilization of forest resources, c) people participation in decision making and benefit sharing, and d) socio-economic growth. Translating this policy into action, it has emphasized on increasing production of forest products including Non Timber Forest Products (NTFP) through the promotion of agro-forestry, community and leasehold forestry. The most important policy envisioning of this plan was to recognize the participatory approach to forestry in Nepal. It prioritized on policy decentralization, empowerment, employment generation, people’s participation, and public/private partnership. Production of forestry and livelihood integrity were major concerns of the plan.

b) **Forestry Sector Policy (2000):** The Forestry Sector Policy, 2000, is an updated version of the FSMP Policy and subsequent amendments to that document. It contains development imperatives, outlines, strategies, and programmes, and summarizes the investment required to develop the forestry sector. It recognizes
the needs to consider people depend on forests for firewood as well as for timber, medicinal plants and other forestry products as policy priority. This policy stated three categorized objectives: short term (to fulfill basic needs of people); medium term (promote people's participation); and long term (to increase employment opportunities). This plan has also given recognition to the Agricultural Perspective Plan (APP), MPFS, and the Nepal Environmental Policy and Action Plan (NEPAP).

The Forestry sector policy, 2000 has recognized the role and participation of people, private sector and other actors in the development of forest resources including NTFPs. It states, "Parastatals will be required to compete with private enterprise on an equal footing, and required to pay market prices for forestry products. New forest-based industries will be established only if their plans for the production and acquisition of raw materials are acceptable to the MoFSC". The policy also talks about provision of effective harvesting and distribution of forest resources and about the encouragement of communities to grow commercial forest crops where appropriate growing conditions exist and to establish forest-based processing enterprises outside of the community forest. It also focuses on providing livelihood opportunities to poor and landless people in forestry-related activities and pays immediate income to the rural poor who use to collect raw materials like medicinal and aromatic plants for industries. The policy also addresses the industrial development as commercialization of non-timber forest products.

c) **Leasehold Forest Policy 2002:** Under this policy the policy is envisioned to provide the following condition of land for the production and management of forest under the leasehold except those well-maintained areas of national forest:

- Shrub land;
- The land returned from encroacher;
- Rehabilitated forest areas destroyed by natural disaster;
- Forest area having less than twenty percent crown coverage;
- Sensitive area with the viewpoint of soil conservation, etc.

The policy to hand over above conditioned forest areas were for three purposes: providing leasehold forest to family living below poverty line; providing leasehold forest to the industry and institutional organization; and Providing Leasehold forest for the eco-tourism. In order to provide such forestland as leasehold, separate procedure shall be made for the community living below poverty line; while for the eco-tourism purpose focus would be given on forest protection and tourism development rather than forest production. Likewise, industry and institution shall be involved in forest products production and enhancement for the environment protection. The set objective of the leasehold forest is to contribute to the livelihood of poor family along with the conservation. But this provision could not ensure the access and control of these families over the natural resources.

### 5.4.2 Legal Instruments

Forestry legislation used to be formulated to resolve past problems related to protection rather than to meet present and future needs for better management and increased production. As a result, legislation, which included several major acts and their associated
rules, was not in accordance with the spirit of the new forestry sector policy, which was arrived at through the MPFS process. This discrepancy was particularly noticeable in the case of community forestry. Policy is now very clearly oriented toward "people's participation" in contrast to previous legislation such as the Forest Act of 1961, which originally aimed to prevent (the villagers) from entering forests. Some of the previous and the latest forestry laws which are under implementation are identified below.

a) **Private Forest Nationalization Act 1957:** alienated the communities from their traditional forest management practices.

b) **The Pastureland Nationalization Act 1974:** According to this law the ownership of all pasture lands was vested in the government. Local village and district committees are required to "protect and improve" pasture lands and "must not use the land for any other purpose".

c) **Forest Protection Special Act 1968:** Gave policing and judicial powers to the forest officials to control the encroachment of forest and illegal cutting of forest.

d) **The Panchayat Forest Rules & the Panchayat Protected Rules 1978:** Allowed communities to manage barren or degraded lands for forest production. This guided to promote community forestry in the spirit of decentralization.

e) **The Leasehold Forest Rules 1978:** Allowed only barren or much degraded areas to be leased to a certain community.

f) **The Private Forest Rules 1984:** Entitled owners of private forests to a free supply of planting materials and to technical assistance from the District Forest Offices.

g) **The Forest Act 1993:** This act has significantly recognized the livelihood rights of peoples which are dependent upon the forest resources. The preamble of this act itself was focused on forest resources for the fulfillment of people's basic needs, socio-economic development. It is a kind of shift in conservation oriented forest legislation into the livelihood focus. This act has created the legislative foundation to involve local communities in forest management, utilization and development in Nepal, namely in the Community Forest. This act also recognized Community Forest Users Group (CFUG) as an independent legal entity to carry out activities related with forest resources under its jurisdiction. This act is built upon the forest policies envisaged in MPFS 1988/89. However, there are no such provisions in national forest, protected forest, and government managed forest, rather autonomous rights are given to the government/government officers.

h) **Forest Regulation 1995 & Forest Rules 1995:** These rules and regulations furthered the objectives to meet people's basic needs and policy envisions encouraging peoples' participation in forest resources managements stated in MPFS 1988/89. The promotion of CF with community participation for forest management, utilization and development is clearly stated in these legislations. However, the power, roles and all responsibilities including the preparation of management plan, implementing the plans are given to the concerned forest officer in other forms of forests, like national forest, protected forest and protected areas.
Therefore, these forms of forestry management do not provide or provide very little space and scope to encourage local people’s participation and benefits from the forest resources. However, the provision about community managed forestry management provisions and procedures (application for it by local communities in district forest office) opened up lots of possibilities of developing community forestry in the national forest areas.

i) **Community Forest Guideline 2008**: This guideline has focused on diverse issues related with community forest. This guideline is developed on the basis of wider stakeholder consultation for existing practices and emerging rights issues including implication of Conventions for the rights of indigenous peoples on land and natural resources known as ILO 169. It was basically focused on formation of CF support groups, identification of user households, empowerment of CF users, identification and empowerment of disadvantaged groups within CF in management. This guideline also focused on benefits from forest resources to poor and marginalized groups. Similarly, this guidelines also prioritized the policy of good governance, livelihood for marginalized group of peoples, sustainable forest management, forest based entrepreneurship development, coordination between different actors, self monitoring and evaluation, roles and space of multi-stakeholders in CF etc.

5.4.3 **Identification of Strengths and Weaknesses of Existing Policies**

**Some Strengths of Existing Forestry Policies:**

- Introduction of short, medium and long terms forestry policies;
- Priority of forest resources management for the fulfillment of peoples’ basic needs and livelihood rights;
- Priority of peoples participation (inclusive in terms of gender, indigenous peoples) in forest resource management and benefit sharing, particularly in the community based forestry management;
- Promotion of agro-forestry, community forestry and leasehold forestry to increase production of forest products including NTFPs;
- Increase employment opportunities to poor and marginalized;
- Encourage to integrate forestry management with biodiversity conservation and community development activities;
- Priority in empowerment of disadvantaged groups within CF in management including good governance;
- Participation of multi-stakeholders in forestry resources management.

**Some weaknesses of existing forestry policies:**

- Lack of clear policy provisions to identify and recognize the customary laws and use rights of forestry resources;
• Lack of policies to identify and recognize traditional institutions and institutional systems of forest resources management, development and utilize;
• Lack of recognized roles and participation of local communities, indigenous peoples, resources dependent marginalized communities, poor and landless in forestry other than CF;
• Free and prior informed consent rights of indigenous peoples and local communities are not respected in existing forestry policies.

5.5 Protected Area and Conservation Related Policies and Legal Instruments

5.5.1 Conservation Policies

Although, the major legislation in biodiversity conservation in Nepal known as “Protected Area and Wildlife Conservation Act 1973” is still existing, the conservation policies in Nepal have been changing over the time, space and context. Previously, the protected areas were subject to the recreational purposes, mostly for the rulers and their families (Jana 2007, Ghimire 2009, Bhatt 2002). Objectives and philosophy of the conservation is also changing over the time. For, example, the recreation and entertainments focused conservation have been slowly and gradually shifting towards the basic needs of people and completely state managed conservation systems has been recognizing the peoples' participation as most essential for the success of conservation work. However, the objectives and principles of the conservation area managements in the post 1990s have been slowly and gradually linking with the livelihood rights of local communities and biodiversity conservation together (West et al 2006, Kothari 2008, McNeely 2008, Campbell 2005, Balasinorwala et al 2004, Borrini-Feyerabend et al 2010). Some of the existing policies on conservation are discussed below.

a) The National Conservation Strategy (1988): Based on the World Conservation Strategy, Nepal government in collaboration with IUCN, prepared The National Conservation Strategy that highlights the necessity to establish appropriate policies, regulations and management approaches to ensure the sustainable extraction of medicinal plants. The basic objectives of the NCS are:
   • To satisfy the basic material, spiritual and cultural needs of the Nepalese people,
   • To ensure the sustainable use of land and renewal resources to preserve biological diversity, and
   • To maintain ecological and life support system.

b) Forest sector policy 2000: This policy adopted its policy strategies to improve legal and institutional arrangements on forest resources managements and develop public awareness on it as prioritized strategy. Along with the conservation of forest resources and biological diversity, the policy priority was in fulfillment of basic needs of the people on sustainable basis. Minimizing the local effects of conservation and reducing the conflicts aroused out of the conservation and compensation against the negative effects from conservation works have also been equally emphasized in this policy. Considering equitable benefit and participatory
principles accordance with the CBD 1992 has equally been emphasized in this policy.

c) **Nepal Biodiversity Strategy 2002 (NBS):** This strategy emphasized on involvements and participation multiple actors like local communities, indigenous peoples, conservations groups and public as crucial to the successful and long term conservation work. This strategy also stated that long term conservation is possible when benefits from conservation is fairly and equitable shared and the knowledge, experiences and practices of local communities and indigenous peoples are respected in the conservation activities. This strategy also adopted the policy of landscape level conservation including conservation in ecosystem level approach. Similarly, institutional capacity building and women’s participation in conservation work is also equally emphasized.

d) **National Wetland Policy 2003:** This policy is developed in the absence of wetland issues by other policies and laws like Forest Act 2049, Water Resources Act 2049, Electricity Act 2049, National Parks and Wildlife Conservation Act 2029, Aquatic Conservation Act 2017, Soil and Watershed Conservation Act 2039 and Environmental Protection Act 2053 and the existing regulations in Nepal. The primary goal of this act is to conserve and manage wetlands resources wisely and in a sustainable way with local people's participation. Similarly, indentifying local people’s knowledge, skills, and practices regarding wetland conservation, inclusion of all (women, indigenous peoples, local communities, community groups, community organizations etc), equitable benefit sharing are prioritized policies. Moreover, conservation activities and benefit sharing on the basis of international treaties on wetland conservation is equally important.

e) **Nepal Biodiversity Strategy Implementation Plan (2006) (NBSIP):** this plan focused on close linkage of biological resources, livelihoods and economic development, and mainstreamed the implementation plans to achieve the goals of Nepal Biodiversity Strategy (NBS) 2002. Conserve the biodiversity within and outside protected areas at landscape level and document and register biological resources and associated traditional knowledge etc are major implementation plans of the NBSIP. An account of conservation of endangered (threatened) species was stated but it noted only on higher mammals. Even the account did not state on revision of conservation status of species which was most crucial for conservation assessment at regular time interval.

### 5.5.2 Legal Instruments

There are innumerable legal instruments about the management, utilization and development of conservation areas and protected areas in Nepal. Some of the relevant legal instruments and provisions in thereby are discussed below:

a) **The National Parks & Wildlife Conservation Act 1973 (NPWCA):** According to this act, the government can declare any of the areas as National Park or Buffer Zone areas if he deems/feels necessary. But for this declaration, the act does not
speak about the provision for pre-consultation with local peoples and concerned stakeholders. Moreover, the act prohibit local communities to access any form of natural resources from inside the national park or protected areas. Rather warden is given almost power to manage and control the areas, even including the power to hear and dispose any cases related with the national park. However, the fourth amendment of this act in 1994 has provisioned the BZ concept, which partially allowed the participation of local people in benefit sharing and conservation works.

b) The Soil & Watershed Conservation Act 1982: It is agreed that participation of local communities and indigenous peoples is most important and inevitable component of conservation works today. But this act did not recognize the participation of local communities and indigenous peoples in the conservation works. Similarly, the rights to benefit from conservation are other important components which is also lacking in this act.

c) Buffer Zone Management Regulation 1996; Buffer zone Guideline 1999 & Buffer Zone Management Rules 1996: In fourth amendment of the Act in 1994, an additional provision for the establishment of conservation areas and concept of BZ practice was made. It was amended so that the revenues of a national park would be shared with the local communities located within the BZ surrounding of that park. According to this legal provision, people in the NP area form BZ user committees and exercise some community practices like formulating BZ management plan in user's committee level and some other defined activities. Similarly, provision about 35-50% of the NP income giving to the local communities (particularly through the buffer zone council and committees) for their community development is an important provision in the eyes of sharing benefits earned NP. However, concerning the decision power of these all, warden is powerful. According to these legal instruments, warden has sole authority, roles and responsibility to manage, protect and develop the areas. He is responsible to prepare management plan and get approval from the ministry. Similarly he has also rights to prepare necessary code of conduct, rules, regulations related with the Buffer Zone areas.

d) Environment Protection Act 1997 & Environment Protection Rules, 1997: Although protecting environment is agreeable for all, the process of declaring environment protection areas seems problematic in the eyes of people's rights. According to this act the government can declare any area as “environmental protection areas” if it feels necessary. The act does not speak about the consultation with local peoples and concerned stakeholders. Rather government has monopoly rights to do this. There is provision for the formation of a council for appropriate policy guidance and suggestions. But local peoples and concerned stakeholder’s participation is not provisioned. Similarly, the power to decide about the compensation from the loss or damage from any one or institution in these areas is given to the Chief District Officer (CDO). The roles of local people, community groups, and community institutions are not mentioned.
5.5.3 Identification of Strengths and Weaknesses of Existing Policies

Some Strengths of Existing Conservation Policies:

- Linking conservation with basic needs of the people;
- Efforts to minimize negative effects of conservation and park-people conflicts;
- Priority of people’s participation in conservation works, including the participation of multiple actors;
- Long term conservation through the faire and equitable benefit sharing on the basis of international treaties on wetland conservation;
- Respect knowledge, experiences and practices of local communities and indigenous peoples in the conservation activities;
- Promote landscape level conservation including conservation in ecosystem level approach;
- Encourage women’s participation in conservation work.

Some Weaknesses of Existing Conservation Policies:

- Lack of clear and concrete policies and legal instruments to identify, recognize and respect customary laws and practices of resources use rights;
- Lack of policy provisions about free and prior informed consent rights of indigenous peoples and local communities;
- Legal instruments are not revised as per the basis of recent conservation policies and international legal instruments;
- Lack of concrete policies and legal instruments for the resettlements, relocation and fair and justiciable compensation to vulnerable and marginalized communities;
- Lack of policies and laws for people’s participation in all levels of decision making processes.

6. Policies Practices from Right to Food Perspectives

The review of international instruments on right to food shows that the sufficient international legal foundations have been developed to safeguard and guarantee the right to food as human rights for human beings. Similarly, there are also sufficient international legal instruments for the traditional and customary rights of indigenous peoples over natural resources. This means there are lots of international policies and legal instruments about access to and control over natural resources for the rights of indigenous peoples, local communities, and disadvantaged groups until now. These legal instruments are sufficient to guarantee and safeguard the human rights for marginalized peoples/communities including resources dependent poor and marginalized communities. However, there may be a lack of political wills and states capacity to endorse all legal foundation of human rights (Pinstrup-Andersen 1995, Narula 2006, Cotula 2008).
Talking about the national policies and legal instruments, Nepal government has also adopting principles and strategies of some of the international policies and legal instruments. The international policies and legal instruments have been increasingly getting recognition in different forms and natures of national policies. For example, interim constitution of the country 2007, former CA thematic committees’ draft reports for new constitution, many of the forest and conservation related recent national policies have prioritized the right to food as fundamental rights of human beings. Moreover, the recent water, forest and conservation policies have prioritized the people's participation, equitable benefit sharing, and livelihood rights of local communities including indigenous peoples as most important components for a success of the programs. However, most of the legal instruments are still poor in terms of addressing the policy statements, strategies and priorities that have been stated in recent policies related with natural resources and also the international legal instruments.

The ultimate goal of this study is to analyze and understand the right to food issues from national policies and legislations for access to and control over natural resources (namely water and forest resources) in Nepal. Even though the national policies on access to and control over natural resources are progressive, the existing legislations and practices are still worse in terms of right to food perspective. We can see that many of the communities and people in different parts of the country are still lacking behind the access to sufficient foods and other development facilities. Moreover, they are also lacking behind the access and control over natural resources which are most essential for their basic livelihood.

**Case 1: Right to Food Issues of Kushbadiya Community**

The ‘Kushbandiya’ is one of the marginalized and disadvantaged groups of people lining in Indrapur VDC of Banke district. About 39 Kushbadiya households are living in this VDC. They are enlisted as one of the endangered indigenous peoples in Nepal. They do not have agricultural land of their own and due to which their settlement is very congested. More than 30 households of Kushbadiya are settled in about 4/5 Kattha of land provided by the government and majority of these households have no registered land of their own. They have no space for constructing toilet and safe drinking water in their settlement area. By occupation, they carve the stone grinder and weave jute-rope and sell them in the market for their family livelihood. They also work as seasonal (planting and harvesting time) agriculture labourer in their village. Some of them are also working as village and city area labourers. In this settlement, there is no single person that is employed in either government services or the any of the non-government services. Moreover, almost all of them are illiterate and do not have access to other development infrastructures, like health, communication, electricity etc. There is almost hundred percent of school drop outs in primary level. There is no any single person that has passed at least a lower secondary education. The children those who are studying in the primary school also like illiterate because they cannot read and write properly. There is high rate of child marriage.

As they are enlisted as one of the endangered indigenous community, the government is providing them a social safety net allowance (NRs 500 per month per person) which still could not bring any form of progressive change in their
social and economic life. Neither the government’s safety nets nor their own earning have improved their family income and standard of life including their educational status. Despite their limited income, alcohol drinking also is making them further vulnerable in term of sufficient food for the family members, especially women and children in the family. They have neither permanent sources of income nor their own resources that can ensure their right to food. Rather they are completely dependent on either their daily labour or the grants by the government and other organizations. The poverty reduction has been a major focus for most of the development plans and policies for long time in Nepal. Similarly, it has also been increasingly gaining attentions in the policies related with the access to and control over natural resources in Nepal. Fulfillment of the basic needs of the people and fair and equitable benefits sharing has been centre for most of the policies related with natural resources quite recently. However, the condition of the poorest of the poor and marginalized people, like Kusbadiya community, has not been improving significantly; rather their life has been becoming further vulnerable in terms of right to food and rights to access and control over natural resources. Their economic conditions have questioned the international legal instruments and national policy and legislations on right to food and access to and control over natural resources. The questions arise of who may be responsible to implement both national and international legal instruments for the rights of such marginalized peoples. Moreover, the question is who makes the State obliged to implement human rights related national and international laws and legislation.

Source: Fieldwork/community interactions 2012

According to the international policies and legislations, it is state’s responsibility to provide necessary food for its citizens. Similarly, the right to food has also been increasingly gaining attentions in most of the developmental and natural resources related plans and policies in Nepal. But, there is still lack of concrete plans, strategies and actions to address right to food as basics for poor, marginalized and resources dependent marginalized communities. In addition to this there are still some policies, legislations and actors’ gaps to address right to food and access to and control over natural resources issues in Nepal.

6.1 Water Resources

6.1.1 Analysis of Policies and Legal Instruments

The review of existing policies and legal instruments on irrigation indicate that policies are now in the starting points of identifying and recognizing the issues and concerns, namely participation, of local peoples as users (Uprety 1999). Almost all of the existing water policies have recognized the importance of people’s participation as most important aspect of irrigation management in Nepal (Uprety 1999, 2008). The irrigation is linked with the economic improvement and fulfillment of people’s basic
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needs of people through increasing agricultural production and productivities and employment opportunities for poor and disadvantaged communities. Similarly, policy to support farmers initiated irrigation program, inclusive user’s structure (e.g. at least 33% of women and marginalized people executive committees), fair and equitable benefits sharing, irrigation and water resources related programs on the basis of farmer’s demands, involvements of private sectors and other actors, handover of completed irrigation programs to the user associations are most important progressive policies in Nepal (Uprety 1999, 2008).

However, there are many concerns to be addressed in those existing policies. The customary water resources use rights may be one of the important aspects for people to ensure their right to food from either direct harvest or for other economic purposes. This also may be related with the self-motivated participation of peoples and feeling of ownership upon the programs and systems. The existing water policies and legal instruments have no clear policy provisions on rights to access water resources on the ground of traditional/customary use rights. This means the water resources as ‘common property resources’ and policies and legal provision for common property rights has not been recognized and mentioned in existing water resources policies and legal instruments.

Similarly, the water resources policies are silent on the compensation for the damage of or loss of their ‘customary water resources use rights’ (Uprety 1999). In this case, interventions of the state or any other outside agencies or actors may affect such rights. The existing water resources related policies are also silent about the mechanism of ‘public policy debate’, which affect ‘free and prior consent rights’ of the indigenous peoples as provisioned in ILO 169 and UNDRIP. Another aspect of the weaknesses of existing policies and legal instruments is inconsistency of provisions about gender integration, participation, benefit sharing and compensation.

6.1.2 Analysis of the Implementation of Policies and Legal Instruments

At the same time the identification and recognition of existing community knowledge, experiences, skills and institutional systems in the new policies and laws is another challenge. Regarding the water resources related traditional institutions and their significance Wai Fung Lam (1998:204) argues that there are two learning from the various experiences of irrigation governance and management in Nepal. One is that ‘local institutions are of major importance to effective irrigation governance and management’; and second is that ‘institutions are not simply formal rules on papers, but rules-in-use understood and followed by a community of individuals utilize to relate the activities of individuals’.

The minute observation and analysis of irrigation projects in Nepal may be helpful in understanding whether the water resources related policies and legal instruments are facilitating or obstructing the rights of resources dependent marginalized communities in Nepal. Regarding the identification and recognition of traditional institutions on irrigation, Ostrom (2002:30) argues that ‘achieving a higher stander of living without losing some of the strong capabilities of self-governance is a major challenge. To do so,
however, requires listening to farmers in the first place and gaining information about their needs, their property rights, their ways of governing irrigation, and facilitating their plans for ways of managing improved physical capital. And Norman Uphoff (2002:58) talks about the establishment of sustainable capabilities for mutually-beneficial collective actions as essential for long-term improvement of irrigation system. The arguments and the findings of the water resources scholars indicates that participation of farmers or beneficiaries themselves in all level of irrigation work is best way to make a program success and long enduring (Uperey 2007, and 2010). Looking at the national policies on water (irrigation) resources from this perspective, yes there are some progressive policies in terms of addressing the issues of how community people’s right to access and control resources (namely participation, benefit sharing) can be ensured. However, there is still lack of transforming them into a practice.

**Case 2: Community Rights in Crisis: Irrigation Project and Declaration of National Park**

The life, including traditional right to access and control over natural resources, of people in ‘Balapur’ is under threat after the creation of Banke National Park in 2010 and Sikta irrigation under construction. The 1377 people of 238 households are settled in about 6.6 ha or 200 Bighas land area (surrounded by forests from all sides). The majority of peoples living in there are subsistence farmers. As most of the villagers sustain their livelihood and supplement their income from the resources of the forest (collecting fallen wood, thatched grass, fodder, etc.), and from rivers and wetlands, the restricted access by the national park is having a detrimental effect on their livelihood. In addition, villagers fear, that their crops, livestock and properties will be threatened by attacks from wild animals. No proper consultation with the villagers and the community forest users group has taken place prior to this important decision.

Similarly, the surveyed and would be constructed Sikta irrigation has furthered their fear of displacement and life risk by wild animals from national park areas as the village become in between of the irrigation canal (in its west) and national park (in its north-west and east). No proper consultation with the villagers and the community forest users group has taken place prior to these important decisions. So, the people in Balapur are now demanding either the Sikta irrigation canal to be constructed from north to their village or get them resettled in new places before the start of the construction of irrigation canal.

**Source: Fieldwork/community interactions 2012**

Banke district lies in the mid-western development region of Nepal. Balapur village is 40 km from Nepalgunj - the district headquarters of Banke district. The village is surrounded by forest. On 13 May 2010, the Government of Nepal announced the creation of Banke National Park as a tiger habitat; together with the neighboring Bardiya National Park it is supposed to become the biggest tiger habitat in Asia. According to the Nepali National Park and Wild Life Conservation (NPWC) Act 1993, restrictions with regard to access to forest and its produces are imposed on local communities living inside national parks and wildlife reserves. That means severe restriction to forest
access for all 238 households (about 1377 local people) of Balapur. As most of the villagers sustain their livelihood as subsistence farmers and supplement their income from the resources of the forest (collecting fallen wood, thatched grass, fodder, etc.), and from rivers and wetlands, the restricted access is detrimental to their livelihood. In addition, villagers fear that their crops, livestock, properties and life will be threatened by attacks from wild animals, whose population will increase in the national park. No proper consultation with the villagers and the community forest users group has taken place prior to this important decision.

The obligation to respect means that the State shall not interfere in the realization of the right to adequate food that people traditionally have. The analysis of the denounced situation leads to the conclusion, that the Nepali state is not complying with its international human rights obligations in the mentioned areas and with regard to the respective affected communities, allowing that Banke National Park jeopardizes the access of people to the resources they need to feed themselves and to other resources they need to live in dignity. The obligation to fulfil means that the Government of Nepal has to take action to develop and implement short and long-term rehabilitation plans and programs. The affected people have to get proper rehabilitation – housing, agricultural lands, employment opportunities and other social welfare schemes – so that they will also be able to enjoy their right to food in future.

As such, the government of Nepal must ensure that proper resettlement is granted and if this is not immediately possible, access to forest products must be properly guaranteed, according to its national laws, thus protecting the human right to adequate food of this community.

In a provision of the Nepali policy to Act number 114 of Financial Act, 2064 BS compensation concerning crop/farm damage, human injury and deaths and property by wild animals of protected areas is made for. However, according to experiences shared by the villagers, the process of claiming compensation is very lengthy, and compensation has been rarely paid.

It is expected that there will be positive economic benefits of Banke National Park due to an increase in tourism. However, the existing legislative or policy framework of Nepal for equitable sharing of costs and benefits concerning communities living in protected areas are inadequate. The fourth amendment of the National Park and Wild Life Conservation (NPWC) Act, 1993, addresses participatory conservation of local communities in protected areas, with regard to compensation, management of forest resources, and revenue generated from the protected areas to local communities for their development. However, there is no place for real participation of the local communities in the elaboration of the management plan of the national park and the buffer zone. Furthermore, generation of revenue from the national park is a long process.

The implementation of the projects without a proper consultation process with the affected people and without any plan for safeguard, compensation and rehabilitation plan is also in violation of the country’s constitution, which states that “Every citizen has the right to food sovereignty as provided for in the law” (Art.18,3). In a judicial decision of 19 May 2010, the Supreme Court of Nepal has underlined this obligation of the Nepali Government by recognizing the right of everyone to adequate food.
included in the Interim Constitution of 2007 and clarified by a Supreme Court interim order in September 2008.

Nepal breached international laws and its own constitution by failing to respect existing access to food producing resources and failing to plan for the fulfillment of the same by establishing a productive long-term rehabilitation program. Nepal is obligated to ensure the safety of its citizens and to provide them with access to a proper and safe livelihood and adequate housing.

**Case 3: Community Affected by Laxmanpur Dam**

More than 3000 families (about 23000 individuals) in six Village Development Committees (VDCs), Betahani, Holiya, Mattaiya, Fattepur, Bankatti and Gangapur of Banke District, are suffering from flood in every monsoon. Majority of them are peasants dependent on the agricultural production from their land.

The natural phenomenon of flooding has been severely aggravated since the construction of the Lakshmanpur Dam (built in 1985) and in particular the Kalkwala Afflux Bund (built in 1999-2000) by the Indian Government along the Indo-Nepali border approximately 300 to 500 meter distance from no-man’s land in Indian Territory.

According to information from the affected communities (Government authorized data is not available), as a consequence of inundation and land erosion some people have lost their lives, 1700 hectares of fertile agricultural land has been eroded and irreversibly damaged, 5000 hectares of agricultural land is inundated during rainy season, severely damaging the production, and there is loss of cattle as well as other assets (houses, harvested grains) of the people. So far the affected people have not benefited from a comprehensive rehabilitation programme. No participatory consultation with affected people was held. The relief items distributed are not sufficient to survive the flood period, at most they last for four weeks. People also face difficulties in getting drinking water. There is still no proper resettlement plan for the affected families in place. Attendance of children at school is not possible during the flood period. Especially for women, sanitation is a major problem; in addition, they are unable to go to hospital for deliveries.

This situation has left thousands of families without proper housing, a sustainable method of earning money, and, above all, access to sufficient food and water. Flood affected communities are facing hunger, malnutrition, starvation, water born diseases including health and sanitation problems during and after the inundation period. More than 1000 families have been displaced. So far, the government of Nepal has not initiated any action for their return and resettlement in Nepal.

Nepal is a state party to the International Covenant on Economic, Social and Cultural Rights and duty-bound under international law to fulfil its people’s right to food. As such, the Government of Nepal has to distribute food items directly to victims of natural disaster who are unable to access food by themselves, and has to take action to develop and implement short and long-term rehabilitation
plans and programs. The affected people must receive proper rehabilitation – agricultural lands, employment opportunities and other social welfare schemes – so that they will also be able to enjoy their right to adequate food in future. For this purpose the Government of Nepal has enacted the Natural Calamity (Relief) Act 1982. However, this Act has so far not been implemented effectively; thereby the Government of Nepal is violating its citizen’s right to food and water, as well as adequate living conditions (Art. 11 of International Covenant on Economic, Social and Cultural Rights). The failure to act has also violated the Nepalese constitution. The country’s constitution states that “Every citizen has the right to food sovereignty as provided for in the law” (Art.18,3). In a judicial decision of 19 May 2010, the Supreme Court of Nepal has underlined this obligation of the Nepali Government by recognizing the right of everyone to adequate food included in the Interim Constitution of 2007 and clarified by a Supreme Court interim order in September 2008.

Nepal breached international laws and its own constitution by failing to provide adequate emergency response and to establish a productive long-term rehabilitation program. Nepal is obligated to ensure the safety of its citizens and to provide them with adequate housing, access to a proper livelihood, and sufficient food and water. Furthermore, the Government of Nepal has also failed to secure the safety of its citizens by not acting against India for the violations of certain treaties and agreements between the two countries.

The Government of India has violated the right to adequate food in this context, too. In essence, states are obliged to respect, protect, and fulfill the right to adequate food of people living in other countries (UN Special Rapporteur 2006, paragraph 34). Like Nepal, India is a state party to the International Covenant on Economic, Social and Cultural Rights and duty-bound under international law to respect people’s right to adequate food. This obligation applies also for areas beyond India’s borders.

The construction of the barrage and the afflux bund has benefited India, but has produced devastating repercussions for the citizens of Nepal. India has severely altered the river patterns to improve its own irrigation systems while leaving Nepal to suffer the extreme flooding that has resulted. As per the various treaties and agreements between the two countries, India has a responsibility to ensure its actions do not have such devastating results for its bordering country. The Government of India needs to be made fully aware of the disastrous consequences that have come from the construction of the barrage and afflux bund. Though this is not negatively affecting its own people, India needs to take measures to ensure that its actions do not harm those in the nearby region in Nepal. Indian authorities have to be urged to take immediate corrective measures in order to respect and fulfill the right to food of Nepali citizens and to ensure their lives will no longer be in danger due to unnatural flooding. One such action would be for the Indian Government to implement the agreement with Nepal with regard to the opening of the flow of natural tributaries, Gandholi and Sotahiya across the Kalkalwa Afflux bund. It would also be vital to encourage the opening of the 14 gates of the Lakshmanpur barrage during the monsoon season.
It is positive to note that the Government of Nepal has allocated a budget for the construction of a temporary embankment since 2008. It is also positive that as an outcome of the Third Meeting of the Nepal-India Joint Committee on Water Resources (JCWR) the India side expressed their readiness to implement the detailed proposal regarding opening of two water passing drainages at Kalkalwa Afflux and for the construction of a permanent embankment along both sides of the Rapti river. One water passing gate (drainage) has already been constructed by India in 2010, but the water passing gate had remained blocked most of the monsoon period.

The problem of flooding has been aggravated by the construction of Laxmanpur barrage in the Uttar Pradesh India by its State Government. This barrage has obstructed the natural flow of river and has been causing the flood and river erosion in these VDCs. People in these VDCs are suffering from the loss of lives (both human and livestock) and properties (damage of homes, erosion of land), damages of crops and harvested grains in every monsoon. This problem is added by the construction of about 22 KM high check dams (which currently is converted into the road ways) in Uttar Pradesh State which is just close (not more than a KM) from Nepal-India border. This check dam also blocks the natural flow of the water during monsoon seasons.

The communities affected by this dam have been demanding and requesting to open all water flowing gates (14 flood gates) during the monsoon season and constructing other additional safeguards against flooding. They are also asking for the provision of emergency shelters and full compensations against their loss and damages. Regarding this problem, the regular dialogues with the Indian embassy have been held and the Indian Government has also made some verbal commitments to resolve this problem. However, the problem is still the same. The local people responded that neither the government of India has taken any positive actions against their demands nor the government of Nepal has become able create moral and political pressures to the Indian government.

Source: Fieldwork/community interactions 2012

Talking about case 3, the Nepal government has not played obligatory roles to safeguard and guarantee the universally accepted human rights of its citizens. There are trans-boundary water course treaty 1992, which provisioned that "State should not affect the economic, biodiversity, culture and total life of people in neighboring country" (1[2]). But the case of Laxmanpur dam and barrage is more tragic in terms of implementation of treaties/legal instruments and the right to food issues of adjacent communities. This case indicates that both of the States (Nepal and India) neither became responsible to respect the human rights of people in the areas nor respect and act according to the international water resources related conventions.
6.1.3 Perceptions of Multiple Actors

The roles of diverse actors, particularly the user households/user associations, government/policy makers etc have been identified and recognized in current water policies and legal instruments. Local communities (referencing the communities visited in the field) those who are affected by the irrigation projects, are completely dissatisfied with the policy processes and implications of the projects upon their traditional local livelihoods. They also said that the government and concerned authorities never consulted them but rather, they further argue that, the government always has been neglecting their demands and needs.

In response to the demands and needs of the local people, the concerned government authorities talk about the cost and effectiveness and technical feasibility of the project. But they are less serious and conscious about the practical implication of projects upon the livelihoods of local communities. Talking about the existing policies, they also confident that the policies are well enough to address and establish people's rights. The idea of Norman Uphoff (2005) can be taken into consideration that why local organizations and institutions recently termed as 'social capital' is important for the success of irrigation management. This means recognition of peoples' knowledge, skills, and practices is most important in water resources management. And it is argued that incorporation of these social capitals help to ensure the rights and demands of the local communities.

The actor's perceptions and practices that can be observed across most of the irrigation systems in Nepal indicate that there are still some spaces and scopes to revise existing irrigation policies and legal instruments to address the rights, demands and needs of the local communities that are interrelated with the right to food issues in Nepal, particularly about the free and prior informed consent rights and full participation (participation in all level of decision making processes).

6.2 Forest Resources

6.2.1 Analysis of Existing Policies and Legal Instruments

The forestry sector policies in Nepal can be divided into three broader groups: privatization (pre 1950); nationalization (1957 to mid 1970s); and community orientation (after late 1970s). Despite some critiques and shortcomings, the community based forestry management policies in Nepal have been known as one of the best successful program ever in the world in terms of conservation and livelihood contribution.

The current forestry policies in Nepal have been focusing on the meeting people's basic needs and the people's involvement in protection and management of forest resources. However, the definition of concept 'people's basic needs' is rather limited and under defined, which has multiple meaning for socio-economically diverse societies. Similarly, the concept people's participation is also still ambiguous in terms of the real participation of all section and strata of people (like sex, caste/ethnic, economic etc). Similarly, the forest policies and legal instruments are silent about the customary rights, laws and practices related with the forestry resources. In addition to this, the free and
prior informed consent rights of the indigenous peoples and local communities still have to be incorporated in the community forestry policies and practices.

The policy making processes in Nepal does not seem to be an open that would allow wider public debates and participation. Recently, the wide range of stakeholders, such as political parties, the parliamentary committees on natural resource management, scientists and technical experts, academicians, forest users’ networks and NGOs, private sector organizations, donor communities and the forest rights commission, are proactive and influential in forestry sector policies in Nepal. Though these stakeholders have significant level of interests and influences, they are rarely involved/consulted in the policy processes. Similarly, there are local level organizations (for example local government or Community Based Organizations-CBOs) with considerable stakes in forestry that are never engaged in this process.

However, more recently there appears to be a trend towards widening the arena of debate to include more stakeholders. After the Jana Andolan (the People’s Movement II) in 2006, when the restructuring of the entire state governance mechanism was under debate, there were also many calls for a restructuring of the forestry sector governance mechanism. In response to this demand, the Government of Nepal set up a task force to formulate recommendations for forestry sector reform. At the same time, the re-established parliament passed a bill in 2007 to allow government to settle issues and problems in the forestry sector. Accordingly, the MoFSC prepared an interim action plan (2007-2009) focusing on improving governance, livelihoods, forest resource sustainability and improving public-private partnerships among other issues (Khanal 2007). Currently, there is proposal to amend the forest act 1993 and there are continuous debates and discussions amongst forestry professionals, civil society organizations and local political bodies on these issues.

6.2.2 Analysis of the Implementation of Policies and Legal Instruments

The decentralization policy and the participatory approach of forestry that is instrumental in increasing efficiency, greater equity and a higher accountability of governments to public demands (Gilmour and Fisher 1991; Agrawal and Ostrom 2001; World Bank 2001; Achraya 2002; Gautam et al. 2004; Kanel 2004; Iversen et al. 2006). However, as noted by various researchers, the outcomes in relation to livelihood security appear to be at odds with the reported success despite immense efforts to bring positive changes in forest condition and local livelihood. Various observations and analyses of community forestry practice suggest that a series of critical ‘second generation issues’ or challenges have emerged that are mainly related to sustainability, equity in decision making and benefit-sharing (within user groups and between groups and others) and governance (Kanel 2004).

Within the forest user group the question of equity in sharing the benefits from, and costs of, community forest management has been a major issue since the 1990s. A lot of evidence shows that there is a problem in equitable sharing of benefits. Insecure tenure rights, elite domination over decision making forums and a lack of regular as
well as critical information flow are believed to be critical factors hindering the equitable
distribution of community forestry benefits (Malla et al. 2001; Ojha et al. 2002; Dev et al. 2003). These inequalities correlate closely with a lack of broad policy ownership and
and citizen participation in public decisions with a strong causal relationship between the
broader issue of good governance and desirable development outcomes (UNDP 2002).

There is also evidence of widespread discrimination in CF on the basis of caste, and
this is often a factor contributing to the marginalization of resources dependent poor
members, who are often from the poorer households. In the process of developing
community forestry groups (CFUG) artisans and small scale entrepreneurs, who often
are from 'low' castes (such as blacksmiths and shoe-makers), are not able to participate
in community level meetings and assemblies that decide who can access local natural
resources, and how. As a consequence, they have to follow rules imposed by others
(Chhetri and Nurse 1992; Lama and Buchy 2002).

The current approach of forestry and the current arrangements for the distribution of
products do not take into account users’ differences in need. In one instance, poorer
households received only one-third of their annual fuel wood requirements from
the forests, despite the fact that they are entirely dependent on common resources
for their supply. By contrast, in a case study of a single CFUG by Timala (1999) it was
demonstrated that the average rich household received far more than their need,
given that a significant proportion of their supplies come from private resource. Several
studies have indicated that there is inequality in benefit distribution often leading to
extra costs to poor and marginalized such as blacksmiths and crafts-men (Bhattarai
1999; Malla 2001; Forest Action and SEACOW 2002; Paudel et al. 2003).

After introduction of CF, there is also increased insecurity and frustration among the
poor, particularly the landless. It is further disempowering those who depend most
on the forest. There is evidence that CF has in many instances further significantly
disadvantaged the poor (Bhattarai 1999; Lama and Buchy 2002), working against the
stated objectives of the programme. Similarly, decision-making has been the reserve
of a minority of dominant members of the community, who are very often the least
dependent on common property forest resources. By contrast there has been a noted
lack of participation of disadvantaged groups, such as women (Paudel 1999; Neupane
2000), who are often the most knowledgeable about forest resources and the most
reliant on common property forest resources (Hobley 1996; Malla 2000). The result is
that forests are not managed according to the needs of those that are most dependent
on them.

### 6.2.3 Perceptions of Multiple Actors

Forest management approaches in Nepal have evolved through trial and error since the
post colonial period. Currently there are three major approaches in operation, namely:
a) national parks and protected areas for in-situ wildlife and biodiversity conservation, b)
national production forests managed by government departments; and c) community
based forest management including the CF program. Since the 1990s a certain portion
of the high value natural forests and plantations within both buffer zone areas of the
national parks and national forests are being handed over to communities under the
Similarly, there are two parallel sets of forest management authorities under the MoFSC. These are the Department of National Park and Wildlife Conservation (DNPWC) and the DoF, which are responsible for the conservation, management and utilization of the forest resources of the country. However, in the past few years, new types of actors are emerging with new roles and stakes in forestry who are intensifying dialogues and discussions as well as conflicts. Within the CF program, the primary actor include the MoFSC, DoF, donor field projects, I/NGOs and CBOs (in technical assistance and advocacy capacities) and forest users themselves, all with a variety of interests in community forests. Among these actors there are four principal service providers engaged in community forestry. These are: a) DoF and related government authorities b) Donor field projects c) local political bodies (VDCs and DDCs); and d) Civil society groups including users’ networks.

As far as community forestry has been increasingly gaining its international recognitions in success of conservation and economic contributions, there are equally growing concerns and debates about the critiques of CF managements and governance. The CF leaders argue that CF has best and transparent governing system and hence is one of the best models of natural resources. Whereas the critiques argue that the benefits of the CF still have not gone to the real poor and real beneficiaries and rather it is captured by only the limited elites. Such contrasting debates is always there between the government authorizes and CF leaders.

The number of CFUG itself has become a larger and diverse in terms of proper monitoring, evaluation and support in the forms of both technical and material. The recently proposed amendment of the forest act by the government seem to be interested to curtail the community rights (autonomous) that was provisioned in the existing act, with the reasons of improving shortcomings in CFUGs. In response to this the CFUGs, its institutions including other networks related with natural resources opposing the government’s move. It indicates that principles of forestry resources envisioned in the recent forestry policies are in the question of whether they are really developed to transform into the practice or not. Similarly, the government is also trying to promote protected forest in Nepal these days. It also questions the spirits of recent forestry policies which have prioritized the people's full and real participation in forestry management as means to contribute in fulfilling basic needs of the people in Nepal.

6.2.4 The Right to Food in Exiting Policies, Legislation and Practices

The impact of tradeoffs between environmental conservation policies and community use of forests is potentially more critical where farm animals are the engine of rural economies and livelihoods. The severity of recently introduced environmental policies and programs on food security and livelihoods is not well understood. While a number of studies have attempted to study the impact of forest policy on food security, these
studies often limit their scope to an assessment of impacts on household livestock holdings (Adhikari et al., 2007; Richards et al., 2003; Fox, 1993).

In practice though, the community forestry approach has had undesirable effects on incomes and poverty alleviation. Moreover, a number of studies have reported that a policy focus on environmental protection has led to an overstock and underutilization of community forest resources (Khanal, 2002; Gautam et al., 2002). There have also been problems in terms of social and economic development (Dhakal and Bhatta 2009; Thoms, 2008).

One particular effect of the environmental focus of forest policies is on local food security and livelihoods where there are livestock-based food systems as in Nepal. The present situation is that average private landholdings are less than 0.8 hectares per household. The bottom 47% of land-owning households have a land area of 0.5 hectares or less, and 29% of farming households are landless (CBS, 2003; UNDP, 2005). More than 60% of farming households have a food deficit from their own land (CBS, 2003). This means forest resources may be other important options to ensure the realization of the right to food.

With the twin goal of enhancing local livelihood sustaining the forest resources, over the last 25 years the Nepalese government has been handing over patches of forest to local communities as community forests. These local communities then take responsibility for the management of the forests and subsequently are entitled to the benefits the forest provides. In order to receive forest resources in this way a local community must form a CFUG, which is defined as a specific group of people who share mutually recognized claims to specified user-rights to a forest (Maharjan 1998). It is one of the key development interventions progressed to support sustainable rural livelihoods and the sustainability of forest resources (HMG/N 2002). The promotion of ecological sustainability and local livelihoods through the participation of local people and their knowledge has been a fundamental argument behind this approach (Fisher 1991).

The reported success of the program has been largely attributed to these ‘participatory’ and ‘process-oriented’ approaches to forest management. Since the inception of the program in Nepal over 18 thousand CFUGs have been formed and more than a million hectares of community forest have been handed over (CFD 2009, HURDEC et al 2012).

Increasingly it is being recognized that the forestry sector has direct/indirect role in food security. The twin goal of forestry that aimed to livelihood promotion and sustainable forest resource management agenda is being integrated with poverty alleviation, employment generation, enterprise development maintaining sustainable and healthy ecosystem management. There is well recognition of community based forest resource management applying various approaches such as community forestry, leasehold forestry and collaborative forest management. The assumptions on resource use and tenure rights vary in these approaches but the central idea is common; promotion of livelihoods through sustainable forest resource management.

The main reason for the emergence and expansion of actors in forestry is the changing
context of forestry worldwide with the recognition of the multiplicity of links to sustainable livelihoods and the introduction of participatory forestry policies as well as the paradigm shift in mainstream development understanding and intervention.

From the perspective of livelihoods, there is some evidence of under-utilization of the forest as well as problems of elite domination in CFUG planning (Hobley 1996; Paudel 1999; Neupane 2000; Malla 2001). As has been reported in many cases, the local elite members have either captured most of the material benefits from CF or have at least restricted the access to benefits of the poorer members of their communities through conservative protection of the community forest (Malla et al. 2001; Paudel 1999; Timala 1999; Timsina 2002; Iversen et al. 2006). This is all despite the principle that the distribution of benefits from and contributions to community forestry are supposed to be determined through collective decision making by a group based on a group constitution and operational plan.

6.3 Conservation Areas

6.3.1 Analysis of Existing Policies and Legal Instruments

Biodiversity conservation has been becoming a major concern and priority of national policies, legislation and plans in Nepal since long years. The most noteworthy is that the priority areas of the national conservation policies have been changing over years and decades. The recent conservation policies and legal instruments have been recognizing people's participation as one of the most important aspect for a success of conservation activities. Another important aspect of the recent conservation policy is to link conservation with fulfillment of peoples' basic needs in a sustainable way. Similarly, benefit sharing; reduce conflicts between conservation authority and local people, reduce negative effects of conservation upon the local people, participation of multiple actors, recognition of local and indigenous peoples' knowledge, skills and practices for conservation are recently introduced and acknowledged conservation policies. Moreover, the recent conservation policies have also prioritized the states' responsibility to respect and implement international treaties, decisions, and legal instruments that have been made so far for the rights and participation of local peoples and indigenous communities.

The recent conservation policies are very progressive in terms of people's participation- 'participatory conservation'. However, existing conservation laws and acts are contested in terms of international legal instruments (Paudel et al 2011, Khanal 2011). The recent conservation policies are quite enough to address most of the concerns and issues related with local communities and indigenous peoples but existing laws, acts, regulations and guidelines on conservation are silent on these issues. For example, the existing national conservation acts and regulations do not have clear provisions to identify, recognize and respect traditional and customary practices of indigenous peoples and local communities on biodiversity conservation. This means, there is huge gap between recent conservation policies and existing laws. The existing conservation laws, acts, legislations, regulations, guidelines are more regulatory, giving decisive
powers and authorities to the government authorities rather than to participatory, such as according to NPWCA 1973, concerned warden is authoritative to take almost all decisions on particular NP.

6.3.2 Analysis of the Implementation of Policies and Legal Instruments

The biodiversity conservation policies in Nepal have tremendous experiences over the years and decades. The completely species conservation centric exclusionary policies have recently shifted towards the basic needs and participatory conservation. The recent conservation policies are more people friendly and inclusive in terms of people's participation and benefit sharing. However, the implementation of existing conservation acts and regulations, which do not comply with international legal instruments like free and prior informed consent rights, traditional and customary use and management practices etc and even with the recent national conservation policies, are hindering the livelihood rights of local communities.

Case 4: Traditional Livelihood Rights of Sonaha People in ardiya National Park

The Sonaha communities are one of the most endangered indigenous nationalities in Nepal. Traditionally they are resource dependent marginalized indigenous communities. Traditionally they led a semi-nomadic lifestyle constructing numerous temporary settlements locally known as "Deras" along the river stretch. They are landless and hence their livelihood is depending mainly on fishing, forest products and gold panning. Three districts (namely Kailali, Kanchanpur and Bardia) in far western Nepal are their traditional homelands.

The traditional livelihood rights including their identity of Sonaha in Bardiya district have been jeopardized by the establishment of Bardia National Park in 1975 as national park authority prohibit them to continue their traditional occupation. However, they have no other options for livelihood rather than fishing, gold panning and collecting forest products. Recently many of them have been started to involve in the village laborer.

The State has failed to respect the right to food of this indigenous people by imposing restrictions with regard to their access to natural resources, which has contained their major source of livelihood thus also endangering their identity. It has also failed to fulfill their right to food through enlisting them as Janjati (indigenous) community thus depriving them of many facilities offered by the state towards deprived communities. The failure to enlist them officially as a Janati community is also causing an identity crisis. Currently, they have a small population, low economic and socio-cultural status, leading to gradual migration to urban areas and foreign countries for job or education. The authorities of Bardiya National Park do not allow them access their “native grounds” prohibiting them to continue their national occupations of fishing and collecting gold dust in the local river banks.

Source: Fieldwork/community interactions 2012
The case indicates that Sonaha like resources dependent marginalized communities are adversely affected by the declaration and management of protected area systems. According to the existing conservation laws, the government authority, namely warden, of a concerned protected area becomes authoritative in taking any form of decisions on protected areas. Similarly, the existing PA law (reviewed earlier and also detail in the annex) is also very restrictive in terms of resources access in the PA areas. The BZ practice was to some extent the progressive in terms of people’s participation and benefit sharing. The community people in the BZ area can form BZ committees and BZ council. But their roles, responsibilities and powers are just supplementary to the warden rather than the decisive powers on their issues. They can participate in conservation work but have no powers to take decision about the utilization of resources. They need to take permission from the warden in case of if they wanted to use resources even in the BZ areas. So, the access to and control over natural resources of local communities in and around PAs including BZ areas in Nepal is very dependent. They, by laws and practice, should depend upon the decisions taken out by the PA authority, for example warden of NP can give or take back the fishing license to fishing communities.

The existing conservation management systems further needs to consider the people’s full participation (in all level of decision making to implementation processes) and their socio-economic issues (Paudel 2002). The introduction of BZ concept and practice made the PA management a bit progressive in terms of local benefits and local participation (Paudel and Bhatta 2007, Paudel et al 2007). However, there are many issues and concerns yet to be considered in PA management systems. For example, free and informed consent rights, equitable benefit sharing, promotion of customary laws and practices etc. The studies showed that the participatory conservation policies and practices, like BZ, is producing further social inequalities (Paudel 2006) and hence this policies are not adequate to address needs and concerns of affected peoples and local communities (Paudel et al 2010).

6.3.3 Perceptions of Multiple Actors

The conservation area has been becoming an issue of debates for all for long time. The local communities those who are affected by the declaration and management of existing conservation policies and legal instruments and are living in and around the protected areas argue that the conservation areas (except some of the community based conserved areas) are curse for their traditional livelihoods. They argue that government authorities always are obstructing in their access to natural resources and livelihood (Rai 2011a).

The concerned government authorities of PAs are more defensive in terms of social production and outcomes of PAs in Nepal (Rai 2011b). They argue that there are sufficient policies and actions for safeguarding and guaranteeing the livelihood rights of local communities. Despite the contradictions and conflict between the actors and stakeholders, the national conservation policies have been becoming more progressive in terms of people’s rights and participations. Regarding PA governance, there is also a debate about the needs of recognizing and respecting indigenous peoples and local communities as custodians to conservation areas (Kothari 2008, Jana and Paudel 2010, Borrini-Feyerabend et al 2010). Recently, the term Indigenous and Community
Conserved Areas (ICCA) has been introduced to incorporate customary conservation practices and international legal instruments on conservation, which opened the door to revise existing other legislations, like NPWCA 1973 and other subsequent regulations. However, the social and political context of the country has been slowly and gradually changing the existing dominant ideology of conservation, that is State ever is a responsible actor of conservation work. Inclusive participation of people and local communities, equitable and fairly mannered benefit sharing, integration of conservation with livelihood rights of local people, respect of international laws and legal instruments etc have been gaining an attentions of discussion for all. There is very less conflicts and discontentment in these issues (Rai 2011b, BK et al 2011). Moreover, customary laws and rights to resources have also been becoming the issue of discussion.

6.3.4 The Right to Food in Existing Policies, Legislation and Practices

The declaration and management of PAs, particularly the NPs have prohibited the traditional use rights of resources, which consequently have adverse effects upon the traditional livelihoods of resources dependent marginalized indigenous communities like Sonaha in Bardiya district. Hence, their right to food has become major concerns for human rights activists since long time. It is already stated that except current progressive conservation policies, most of the existing protected area acts and regulations are more regulatory and restrictive. Although there are some participatory conservation policies and practices adopted since mid 1990s, the real participation and benefits of the conservation areas are still questionable in terms of right to food of the resources dependent marginalized communities.

The existing NP act and legislations do not allow the local communities to take any decisions themselves about the resources in and around them, for example the BZ user’s committee should get permission from warden to collect any resources from NP areas. Their participation in decision making and resources managements are exclusive. Rather decisive and influential powers are inherited by the concerned conservation areas government authority. Moreover, the traditional and customary rights of the local communities are not respected by the existing PA acts and legislations (except in the Conservation Areas) (Paudel et al 2010).

The resources dependent indigenous communities become more vulnerable in terms of their right to food as the PA authority could not provided them any alternatives of their traditional livelihoods. There is neither clear legal provision to compensate their loss nor justifiable relocation and resettlements with secured food rights. Rather relocated and resettled communities have also become in social and cultural crisis (Mclean and Straede 2003). A behavior of PA authorities in PA and BZ for fishing communities, like Bote and Majhi (see a case in Nawalparisi district by Rai 2011) also indicates that their food security has been always in crisis since their traditional rights to collect wild foods and fishing have been restricted by Chitwan National Park. Their community leaders have been spending their most of time for struggling against park authority for reinstatement of their traditional and customary rights (Rai 2011a and 2011b).
7. Emerging Issues and Way Forward

7.1 Emerging Issues

It is noteworthy that there are sufficient international legal instruments of which Nepal is a state party that lay down the foundations of right to food and access to natural resources for human beings, and to be more specific for the resources-dependent-marginalized communities. Similarly, there are also some national policy initiatives in terms of the right to food and access to natural resources for resources-dependent-marginalized communities, namely indigenous peoples and local communities. The most important thing is that the current national policies and strategies on water, forest and biodiversity conservation are progressive in terms of considering the basic needs of people and their participation in the conservation, management and benefit sharing. Similarly, the interim constitution and draft reports by all former CA thematic committees, one or other way, have also addressed the rights of resources dependent communities for access over natural resources, including right to food as human rights. In addition to these some of the existing laws, acts, and legislations have been provisioning the people's rights over natural resources for their basic needs. However, there are still some constraints and limitations for national policies, legal instruments and their implementations to ensure and safeguard right to food.

The livelihood contribution has become a major concern for most of the national plans, policies and legal instruments. The term ‘livelihood’ varies not only in its definition for different actors but also varies in terms of its practical implementations. For example, for indigenous peoples and non-indigenous peoples, rich and poor, men and women, so called upper caste/ethnic and so called lower caste/ethnic groups, natural resources dependent and non-dependent etc may be different. The conceptualization of these differences is itself a problematic as their roles, influence and power varies each other. Similarly, the geographical variations of the country are also equally important in the formulation and implementation of policies and legislations as it determines the types of things as basic needs and demands of people in different geographical regions.

The term ‘participation’ has become ambiguous in terms of its practical implications. There is a still gap between principles and practices popularly known as rhetoric and realities of people's participation (Chhetri 1999). The policies and practices of people's participation have been criticized for its ambiguities in exclusion within the participation, meaning people have been participated but without powers and roles in decision making processes. Policy making processes is equally important as importance of a policy contents. The most recent critics in policy making processes in Nepal are the wider participation and consultation. Most of the policy making policies in Nepal does not seem to be an open process where all stakeholders would be allowed to participate for a wider debates and participations in formulation and implementation of a policy concerned with their life. The question is how a policy processes (both formulation and implementation) can be made more inclusive as well as more participatory rather than a ritual.

The access to and benefits from natural resources is widely discussed issues. However, this has not been analyzed from the perspectives of traditional and customary practices.
For example, the declaration and management of most of the protected areas in Nepal could not identify and recognize the existing traditional customary practices of resources uses and benefit sharing mechanisms. Indigenous peoples and local communities have their own values, norms and practices of resources management and utilizations.

The Community Property Resources (CPR) governing system may address most of the local concerns and issues like participation, access, benefits and customary practices. The recent debates therefore is focused on how existing community rights over natural resources have been identified and recognized in the policies and legal instruments. Identifying and recognizing such systems may identify, recognize and legalize the existing community institutions and their underlying practices.

Another important emerging issue is about the policy consistency. It may be consistency of provisions between one policy to another policy and between a sectoral policies and related legal instruments. Talking about policies and legal instruments in Nepal, there are still some contradictions between one sectoral policy to another and also between a sectoral policies and related legal instruments as well. It is hence the immediate need to make sectoral policies including their laws and legislations consistent form one to another so that targeted goals would be achieved.

In addition to this, the free and prior informed consent rights of the local communities, including indigenous peoples have been gaining increasing attentions in most of the national policies and legal instruments. Along with the formulation of appropriate policies, another emerging concern, related with access to and control over natural resources for all, is the proper implementation of existing policies and legal instruments.

7.2 Conceptual Recommendation

As discussed earlier that the policies and legislations on water, forest and PA in Nepal are progressive in terms of recognizing rights of resources dependent marginalized communities, there are some conceptual clarities and agreements that are most essential to ensure their access to and control over natural resources thereby to make sure of their universal human rights, the food rights. They are discussed below:

- **Policy framework:** Water, forest and biodiversity are major economic sources of the country and their proper management and utilization is often a backbone of the national economy. To talk about right to food of these resources dependent marginalized communities, a clear national economic framework is needed, which could guide whole policies including water, forest and biodiversity. Hence, the policies related with natural resources should be guided by a national economic framework.

- **Policy approach:** Integrated approach of policy formulation should be adopted so that contradictory policy provisions, like contradiction between agriculture and forest, CF and leasehold forest, CF and BZ forest etc of the country can be resolved with consideration of peoples basic needs, national economic framework and universal human rights.
• **Policy process:** Participatory policy processes must be adopted so that wider consultation and multi-stakeholder’s participation in policy making processes can incorporate people’s concerns and issues in the policies. It also develops policy ownership among beneficiaries/communities and helps to ensure proper implementation of the policies and laws.

• **Policy focus:** To ensure the human rights of resources dependent marginalized communities, the national policies related with natural resources, namely water and forest, conceptually must agree to keep them (resources dependent marginalized communities) in the centre of policy processes.

• **Policy content:** The contents of the policies is most important means to ensure access to and control over natural resources for resources dependent marginalized communities thereby to ensure their human rights, the right to food. By contents, fulfilments of people’s basic needs, national economic goals and international standards are most essential components of the policies. These are discussed in details in the following sub-chapter.

### 7.3 Recommendations for the Policy Contents

Given by the findings of policies and legislations on water, forest and PA there are some conceptually important issues that have to be acknowledged and agreed by all thereby to ensure right to food of resources dependent marginalized communities in Nepal. They are discussed below:

• **Provision for identification and recognition of customary laws, institutions and rights:** Most of the policies and legislations on water, forest and conservation areas in Nepal are still silent about the clear provision for respecting, identifying and recognizing traditional and customary laws, practices, and institutions of indigenous and local communities. The legal provisions about these are important to safeguard and guarantee the rights to access and control over natural resources for indigenous peoples, local communities and resources dependent marginalized communities. Such provisions also help to ensure the food rights of these communities as well.

• **Real participation of concerned people/beneficiaries:** The term concerned people may be defined in different ways. In this study, it denotes multiple actors (with specific emphasis on gender and resources dependent marginalized communities/individuals) that are related with the particular resources, such as institutions, community based organizations, users, households etc. The real participation should be understood as active participation, where participants play pro-active roles in all levels including policy making processes, decision making processes, policy implementation processes, monitoring and evaluation processes; rather than just participating for the sake of participation. The existing policies and laws on forest, water and conservation areas in Nepal have one or other ways emphasized on the participation of local peoples but their real participation, except in community forest, is still more ritualistic rather than encouraging of their full participation. Moreover, the participation of local communities, with specific emphasis on gender and resources dependent communities/individual, in all level of resources governance and management is lacking in both policies and practices.
• **Respecting the free and prior informed consent rights:** Almost all of the policies and legislations on water, forest, and conservation areas are silent about the free and prior informed consent rights of local communities. Lack of this provision consequently affects the rights of indigenous and local communities for their access to and control over natural resources, particularly of their traditional livelihood rights. Hence, water, forest or conservation related policies and laws should provide free and prior informed consent rights of indigenous peoples and local communities. This is a form of human rights given by the international policies and legal instruments. It makes them aware and informed about the program and become prepared for the future actions/activities related with the natural resources in and around them.

• **Provision of common property resources:** Water and forest resources are by nature common property. The study shows that such resources can be well managed and utilized by the local communities. The better management and utilization of these resources are most often depends upon the common goals and efforts. This means without the participation of community people, the best management of these resources is almost impossible. Managing water, forest and conservation areas as CPR would help to ensure participation of the resources dependent communities in all level of decision making processes, equitable benefit sharing, and sustainable management of resources. Hence, promoting and strengthening of CPR is one of the best ways to ensure access to and control over natural resources for resources dependent marginalized communities in Nepal. Such provisions also ensure the right to food for these communities.

• **Provision for wider public policy debates:** Although most of the recent policies on water, forest and conservation areas have identified and prioritized the needs of people's participation, they are silent about the wider consultation and public debates in the formulation processes. It means the policy making processes in Nepal are still, both principally and practically, centralized. It is fact that the consultation and participation of wider stakeholders in policy making processes makes any of the policies and laws owned and respected by all actors. It also ensures the participation of concerned communities and local people in its proper implementation.

• **Provision of compensation (against displacement), relocation and resettlement:** Many of the water (namely irrigation) and forest (namely protected areas) related projects or state’s interventions have made local communities either displaced from their original settlement areas or negatively affected in their traditional livelihoods. Not only this, they also have been prohibited from their traditional customary rights to access and control over natural resources for their livelihoods. Moreover, social and cultural life of these communities has also been adversely affected. Their social relations and interrelations, cultural and political life ways, and to some extent their religious life have been negatively affected as their traditional institutions including their norms and values have been gradually destroyed. So, clear policies and laws for socio-culturally appropriate relocation/resettlements/compensation is a must to ensure their right to food through rights of access to and control over natural resources as a part of “right to food” as universal human rights. The use of terms ensured and appropriate may be defined.
in different ways; however in this analysis these terms should understood as that processes which is appropriate for their social, cultural, economic, religious and political practices.

- **Commitments and accountability for peoples’ concerns**: The socio-economic status, studies and some cases indicate that most of the resources-dependent marginalized communities are deprived of either inappropriate policies or lack of appropriate implementations. There are often questions of who should make commitments for their rights and who is accountable to them. The international legal instruments and guidelines clearly indicate that the State should and committed and accountable for these. Based on the review and analysis of the existing policies, legislations and practices on water, forest and conservation areas in Nepal, there is no clear provision of State as committed and accountable for the rights of such communities and which is most important steps in safeguarding and guaranteeing their food rights. But at the same time community member’s roles and responsibilities may be a complimentary.

- **Clearly defined roles and responsibility of different actors including the state**: Different actors play different roles and responsibilities in managing natural resources. Talking about the right to food for resources dependent marginalized communities, state has more roles and responsibility in compare to other actors. Most of the policies and laws define state as regulatory institution but very poor emphasis on the states obligations or obligatory roles. As there are lots of international policies and legal instruments for the rights of resources dependent marginalized communities including for their right to food issues, there must be clear provisions about the state’s obligatory roles and responsibilities to ensure their rights on access to and control over natural resources thereby ensuring the right to food issues. While, the roles and responsibility of local community, private companies, nongovernmental organizations etc must also be clearly defined.

- **Provision of clearly defined monitoring mechanism/structure**: The success and failure of any policies and program is mostly depends upon the provision of how effective and appropriate monitoring institution and mechanisms is provisioned. The existing policies and laws have envisioned the state/government as regulatory institution in almost all spheres of resources (water, forest and PA) management and governance. This provision has undermined the contribution, competencies, and readiness of local communities in both formulation and implementation of policies and programs related with their right to food issues including resources management and governance. So, co-monitoring, with appreciated roles and responsibility of beneficiaries/local communities is a best way of ensuring rights of resources marginalized communities so as to ensure their right to food.

### 7.4 Stepping Towards Policy Advocacy

As stated earlier, this study is about how and to what extent the existing national policies and laws on water, forest and conservation have ensured the rights of access to and control over natural resources for the resources dependent marginalized communities thereby to ensure their right to food as universally accepted human rights. The review
and analysis of existing policies and laws on water, forest and conservation including some cases as practical issues and policy implications, strategic policy advocacy is most essential to ensure both long term and short term foods rights of resources dependent marginalized communities. In this study, the strategic policy advocacy means processes and priority actions for institutions/organizations those who are working for the rights of such communities and the concerned communities for the right to food issues with focus on access to and control over natural resources. The strategic policy advocacy is most essential in the political and social context of Nepal, because current political situation of the country is very fragile and any forms of rights can be established either from the political influence or social pressures created from the masses of people. Based on the review and analysis of existing policies and laws on water, forest and conservation, following things can be done as policy advocacy thereby ensuring their right to food issues through promoting their access to and control over natural resources:

- **The development of monitoring indicators and measuring mechanism:**
  - There are various rights to food policies and provisions articulated in strategic documents however there are no updates on the implementation status, learning and reflection which could be instrumental for effective implementation, amendment and reform the policy documents.
  - The development of monitoring indicators and their verifiers (fact sheet) helps to identify the gaps in policy provisions, contradictions and actual hurdles in field implementation. The development of such fact sheet would help stakeholders to identify the priority on policy advocacy agenda as well as evidences for lobbying.
  - At the initial stage, there should be a multi stakeholder monitoring mechanism in place with ownership and commitment for continuity with clear TOR to facilitate policy advocacy in food rights issues.
  - Therefore, there are recommendations to government bodies, donors and CBOs:

  **Government:**
  - Formation of independent right to food monitoring committee/development of monitoring system with ToR (needs to have wider consultation);
  - Accessible data base to public with source/should ensure the access and validity of information;
  - Policy framework should include all the stakeholders;
  - Periodic review of indicators, collection of recommendations and release;
  - Effective use of the bilateral supports.

  **CSOs:**
  - Formation of common platform of all the CSOs working in right to food issues, particularly the development of CSOs monitoring mechanism;
  - Generate, flow and use of relevant information and data to inform right to food policy advocacy campaigns;
  - Coordinate with other stakeholders for policy development and implementation.

22 From the discussions with concerned stakeholders it is known that the Right to Food Network (RtFN) has been formed however it is not effectively engaged in devising policy monitoring indicators and mechanism.
Donors:
- Support to develop right to food monitoring system, CSO capacity building and further research on right to food activities.

- **Identification, documentation and analysis of relevant cases:** This is one of the most essential and important in rights advocacy including right to food issues for the resources dependent marginalized communities in Nepal. Following steps can be followed for this:
  - **Step 1:** Identifying relevant cases (more as much as possible) that represents or explains how the resources dependent marginalized communities are facing right to food problems due to the inadequacy of existing policies, laws and practices for their access to and control over natural resources.
  - **Step 2:** Detail study (if possible better to conduct ethnographic studies) and documentation of the identified cases with particular emphasis on how and to what extent their rights to adequate food as human rights have been denied.
  - **Step 3:** Analysis of the particular cases (case by case like indigenous peoples, fishing communities, protected area affected communities, dam of irrigation canal affected communities, traditionally resources dependent but practically excluded communities etc) on the basis of national and international policy instruments so as to make it basic tools for policy advocacy and lobby. Making such cases publicly available (may be through publications of books, booklets, discussion papers, policy briefs etc) will be advantageous for all including the particular communities.

- **Community awareness:** It is well known that human rights can be ensured when community people are aware about their rights and responsibilities as per the existing laws and human ethics. Right to food issues of resources dependent marginalized communities can also be linked with the level and extent of community awareness about their rights and responsibilities according to the existing laws, policies and practices. Based on this study, following steps can be followed for the community awareness:
  - **Step 1:** Understand the socio-cultural and political condition of a particular community so that the types of activities needed in that community is easily understood.
  - **Step 2:** Identification of key community leaders/actors that can be used as community mediators for community awareness activities. It will be better if identification and selection of such leaders are done through community consent may be from the community meetings.
  - **Step 3:** Regular/occasional community meetings so that community people can have interaction and discussions about their issues and concerns related with access to and control over natural resources thereby ensuring right to food issues as their human rights.
  - **Step 4:** The community leaders/actors/mediators can be supported for some exposure visits, meetings/interactions outside their communities (may be regional, national and if possible international as well) so that they can play effective roles in community awareness in their community.

- **Expanding the networks:** An advocacy is not an easy task. It requires micro to macro networks so that the issues can be raised equally in all spheres of social
units. For this, advocacy networks need to be expanded from grassroots level to the national and international level. This means, the community those who have been affected from the policies and practices need to be informed and participated in all levels of campaigns and advocacies. The following steps can be done for expanding the networks:

- **Step 1:** Identifying community groups if there already exists or establishing community groups if there do not exists any community groups in advancing policy advocacy, lobby and interaction to strengthen rights based campaigns.

- **Step 2:** Expanding community networks gradually into districts, regions, national and international level so that knowledge networks, rights based campaigns and information are shared and owned in all levels.

**Capacity enhancement of concerned communities:** The success and failures of rights based campaigns and policy advocacy is often based on how and to what extent the local communities or concerned community people play proactive roles in the activities. The capacity enhancement is basically important for leadership including their influence and contribution in the policy formulation and implementation. Hence, capacity of the community people (particularly the community leaders/actors) is most important things for advancing the policy advocacy campaigns. It is further important in the current socio-political context of Nepal. Following steps can be followed for the capacity enhancement of concerned communities:

- **Step 1:** Identifying what capacity and skills the particular communities have and what are lacking/absence so that their further needs (both immediate and long term) are provided.

- **Step 2:** Enhancing/providing capacities to the concerned communities as per their needs and demands so that they are competent and perfect of advancing their policy advocacy and campaigns in their own leaderships.

**Collaboration with diverse actors:** This is fact that a single actor or only some actors cannot become success in advancing the rights of marginalized communities in both policies and practices. Hence, knowledge networks and programmatic collaboration with diverse actors (like community groups, community organizations, civil society groups, medias, policy makers, and politicians etc) is a must for advancing the success of rights campaigns and policy advocacy for the rights of resources dependent marginalized communities/people for their food rights as human rights. For this an institution/organization like FIAN-Nepal can play coordinating roles. For this, an organization who is playing coordinating roles can adopt following steps:

- **Step 1:** Identify the community groups, community organizations, civil society groups, Medias, policy makers, and politicians that are relevant for the rights campaigns and policy advocacy for the issues related with access to and control over natural resources with the implication on right to food issues of resources dependent marginalized communities.

- **Step 2:** Coordinate between and among these organizations/institutions for the different forms and types of programs (like interactions, campaigns, advocacy, lobby etc) related with access to and control over natural resources thereby ensuring the right to food issues of resources dependent marginalized communities.
• **Policy lobby and advocacy:** Based on the above all, an organization/institution working for or dedicated to work for the right to food issues of resources dependent marginalized communities can coordinate, facilitate, or some time can lead policy advocacy, lobby and campaigns from local to national and in some cases in international levels. The issues and concerns for policy lobby and advocacy should be based on the points discussed under the heading “way forward”. Although the coordinating roles can be played by FIAN-Nepal like organization/institutions, the major frontline leadership should be played by the concerned communities and supporting organization/institutions can only play coordinating and facilitating roles. The following activities can be conducted for advancing the policy lobby and advocacy in Nepal:

  o **Organizing different levels of formal interactions:** Based on the identified policy gaps for access to and control over natural resources thereby to ensure right to food of resources dependent marginalized communities, different levels of interactions (local, district, regional, national etc) should be organized so that all actors/multi-stakeholders become aware and convinced about the needs of appropriate policies and laws for ensured "right to food“ issues as per the needs and demands of needy people and also to comply with international standards.

  o **Informal meeting and lobby:** The ultimate power to take policy decisions is inherent to either the policy makers or political leaders or some time to both. So, informal meetings and individual lobby may be effective means to convince or influence the decision makers. For this, an informal “national lobby group” can be formed so that this group regularly may take initiatives to make constant visits and meetings with key policy makers and decision makers and flow/channelize the information to others so as to take other appropriate actions/activities in other layers (like local, district, regional, national, international etc). But while, the participation/representation of concerned communities must be made compulsory and mandatory to make reach of their voices, issues and concerns.

  o **Media Mobilization:** The policy advocacy and lobby can be made effective through the use and mobilization of different forms of Medias like print and visual. The use and mobilization of Medias make the issues public and bring wider attentions. For this, a media group can be formed (or if already formed that can be used and mobilized) to mobilize and take initiatives upon the issues constantly.
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Seed Policies, Intellectual Property Rights (IPRs) and Right to Adequate Food in Nepal

Abstract

More than 90 percent of the seed supply in Nepal is sustained through farmers’ traditional seed system in which farmers produce, save, exchange and sell seeds, often informally. The informal seed sector has been playing a vital role in economic independence, food and nutrition security, and resiliency of small and marginal farmers, share croppers and tenants living in the remote areas. However, the formal seed system supported by national policies, research and subsidy programs and served by market currently accesses less than 5% farmers.

In recent years, the use of hybrid varieties of maize, rice and vegetables, mainly produced and marketed by Multinational Companies (MNCs) has been increasing. After a series of crop failures of hybrid varieties, civil society organizations and farmers’ organisations have voiced serious concerns over the unregulated operations with regard to the seed sector and its negative impact on food sovereignty, agro-biodiversity and farmers’ rights on plant genetic resources.

In the aforementioned context, this study was carried out with the aim to examine seed policies and Intellectual Property Right regimes and their impact on agriculture towards progressive realization of the right to food especially of small farmers in Nepal. It was found that Seed Act (1988), Seed Regulation (2012) and National Seed Policy (1999) are major national legislative frameworks to regulate seed production, import, export and use in Nepal. Nepal is a member of WTO and signatory of several international and regional trade agreements related to agriculture and biodiversity such as BIMSTEC, SAFTA, CBD, ITPGRFA, Global Plan of Action, and ILO Convention 169 etc, these regimes have important implications for agriculture and progressive realization of the right to food in Nepal.

This study has revealed that the existing legislative framework in Nepal has failed to address the issues related to safeguarding and promoting the existing informal seed system and conservation of agro-biodiversity; protecting farmers’ right on genetic resources and proper regulation for the operation of third parties, like MNCs.

It is recommended that the state of Nepal reorients its seed policies and legislative framework to synergise formal and informal seed systems; regulate the commercial seed system to serve the right of all to enjoy the benefits of scientific progress; formulate Plant Variety Protection and Farmers’ Right (PVPFR) Bill as a sui generis system for the protection of farmers’ rights and revise agriculture policies based on a human rights framework. Policies should not only aim at maximizing yields but should place the needs of the most marginalized groups at the centre of our efforts. Here, we simply like to thank Mr. Basu Dev Regmi and Mr. Madan Thapa who enthusiastically finished this study during 2012. For full report, plz, visit FIAN Nepal website: www.fiannepal.org -Editors)
1. Background

Agricultural knowledge, practices, skill and genetic resources prevailed in the subsistence farming systems has been playing vital role for economic independence, food security and resiliency of the resource poor farmers in Nepal. Available data shows that more than 90% of the seed supply in the country is fulfilled through informal seed system. However, increasing privatization and monopolization of crop breeding has put the traditional seed system at risk which is still the important mechanism for access to genetic resources especially of small farmers. Due to increasing dominance of Multinational Companies (MNCs) in the seed systems, national efforts in agriculture research and extension has become weak and less commendable. Overall, the poorest and marginal farmers have become increasingly dependent on expensive external inputs such as seed, fertilizers and pesticides. The Trade Related Aspects of Intellectual Property Rights (TRIPs) agreement of the World Trade Organization (WTO) has further degraded the traditional seed systems by extending Intellectual Property Rights (IPRs) in agriculture.

The interim constitution of Nepal (2007) has enshrined food sovereignty as the fundamental human right. According to clause 18(3) it is stated that "Every citizen shall have the right to food sovereignty as provided for in the law". In order to address the issue of food sovereignty people's control over the production and agrarian development chain with favorable state policies of basic input supply is essential, where seed becomes very vital component for food production.

In the context of rapid occupation in seed sector by multi-national seed companies in Nepal, the poorest farmers are increasingly becoming dependent on expensive imported seeds and creating the risk of indebtedness. Beyond this, a forward looking perspective is the increased vulnerability of the small farmers due to the risk associated with the potential failure of modern crop varieties imported from abroad and India. Nepalese farmers in 2009 faced severe crop losses due to failure of hybrid maize varieties to produce corn seed. Similarly in 2010, modern varieties of rice distributed by FAO failed to flower resulting complete loss of rice crop.

The aim of this study was to examine seed policies, intellectual property right regimes and its impact in agriculture on the realization of the right to adequate food especially of small farmers in Nepal. The specific objectives of the study were as follows:
- To assess the seed supply status and associated problems at farm level
- To examine the current status of seed sector development in Nepal
- To examine the seed policies and intellectual property rights regimes for GRs in agriculture from the right to food perspectives
- To develop recommendations to ensure that national seed policies contribute to the realization of the right to food

All the concerns and issues about right to seed were reviewed from various international and national literatures and policy conventions to conceptualize right to seed. Then expert consultation meeting was held on 26 December 2011 in Kathmandu SDC Jawalakhele office for gaining insights and understanding of the issues. As decided by the meeting, team of expert made exploratory field visit to Chitwan & Makwanpur district.
from Dec.28 -30, 2011. Based on information acquired from field visit and objectives of the study check list for different levels of stakeholders was developed and used for further survey in Kailali, Dadeldhura, Doti districts of Far Western Development Region (FWDR) and Parsa, Bara and Rautahat districts of Central Development Region (CDR).

Data were collected through direct field visit and observation, individual interviews, consultation meetings, Focus Group Discussion, Guided Interview, key informant survey with personnel from public private institutions, law makers, representatives of major political parties, Focused Groups (FGs), cooperatives, seed companies, agro-vets as well as other concerned stakeholders. Secondary data from Crop Development Directorate (CDD)/ Department of Agriculture (DoA), Vegetable Development Directorate (VDD), Department of Livestock Service (DoLS), Nepal Agricultural Research Council (NARC), Seed Quality Control Centre (SQCC), literatures and web browsing for cross verification, compilation, and analysis during preparation of final report. Data and information collected from the survey were compiled, analyzed and synthesized using tables, charts and flow diagrams.

### 2. Prevailing Seed Systems

Existing seed supply systems in Nepal is broadly recognized as informal, formal and semi formal system. **Informal seed system** is characterized by farmers producing and preserving their own seeds for subsequent planting and often, they exchange this small amount of seeds with other farmers as gift, exchange, for both monetary and non monetary value. This system is also known as farmers to farmers' seed system. Around 90% of the national seed requirement is fulfilled by farmer network as an informal seed supply system. Traditional, local landraces and old, degenerated seeds of improved varieties in most cases are the product of informal seed system. These land races are culture and the storage of history as well as important genetic resources for modern plant breeding. **Formal seed system** is characterized by a vertically organized production and distribution of tested and released/registered varieties by public and private organizations using agreed quality control mechanism. It comprises different phases of seed cycle: Breeder, Foundation, Certified and Improved seeds (Annex 2). In Nepal, formal seed system comprises breeder and foundation seed production by NARC/DOA farms and stations, contract seed production by National Seed Company Limited (NSCL), Salt Trading Corporation Limited (STCL) and 16 other licensed private seed companies which are allowed to produce FS from BS. This system applies seed certification procedures. Currently the formal sector accounts less than 10 percent of seed transaction in Nepal. The formal sector plays an important role in deploying new varieties, enforcing seed quality control and regulating marketing mechanisms. Furthermore, commercialization and raising awareness about quality seed will demand increased share of formal sector seed supply. **Semi formal seed system** is in between formal and informal seed systems which include community Based Seed Production (CBSP), District Seed Self Sufficiency Programme (DISSPRO), cooperatives/FGs and private sector produce certified and improved seeds for avail to general cultivation. This system has been basically carried out by target communities with the support of public and private agencies where some follow seed certification systems and some adopt truthful labelling depending on capacity of seed producers’ group.
All three seed systems are not mutually exclusive but are interlinked and can complement each other for continued selection, maintenance and seed production of preferred varieties. The comparative key features of these seed system are described in Table 1.

Table 1. Comparative features of seed systems in Nepal

<table>
<thead>
<tr>
<th>Description</th>
<th>Formal</th>
<th>Semi formal</th>
<th>Informal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Initiated by</td>
<td>Public and authorized seed Companies.</td>
<td>Community and private</td>
<td>Farmers</td>
</tr>
<tr>
<td>Seed production</td>
<td>Focus on BS, FS and certified</td>
<td>Improved</td>
<td>Seed from previous harvest</td>
</tr>
<tr>
<td>Quality control</td>
<td>By Authorized Seed Certification Agency (ASCA)</td>
<td>By internal quality assurance system and partially by ASCA</td>
<td>Farmers’ own practice</td>
</tr>
<tr>
<td>Actors</td>
<td>NARC, DoA, NSCL, STCL, Seed Cos.,</td>
<td>Seed producer groups and Cooperatives</td>
<td>Individual farmers</td>
</tr>
<tr>
<td>Seed Labeling</td>
<td>Certification and Tagging</td>
<td>Mostly TL</td>
<td>Not practiced</td>
</tr>
<tr>
<td>Crop/varieties</td>
<td>Notified and modern</td>
<td>Notified, and pipeline</td>
<td>Traditional, local landraces and degenerated seeds of improved varieties mostly</td>
</tr>
<tr>
<td>Marketing/value chain</td>
<td>Commercial and service oriented</td>
<td>Semi commercial and business oriented</td>
<td>Exchange, gift and barter</td>
</tr>
<tr>
<td>Contribution to seed supply</td>
<td>4%</td>
<td>6%</td>
<td>90%</td>
</tr>
<tr>
<td>Category of farmers</td>
<td>Large</td>
<td>Large and medium</td>
<td>Small</td>
</tr>
</tbody>
</table>

3. Major Stakeholders in Seed Sector

Government agencies are responsible for a wide range of activities of an effective seed sector. Besides their key role in planning and policy making, the government agencies undertake research, varietal development and maintenance breeding, multiplication, quality control, marketing, seed use and extension for source seeds. Brief roles of important government agencies involved in seed sector development in Nepal are summarized in Table 2.

Table 2. Role of Public agencies in Nepalese seed sector

<table>
<thead>
<tr>
<th>S.N.</th>
<th>Public agencies</th>
<th>Roles</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Central Level Agencies</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>MoAC</td>
<td>Policy and planning, resource allocation and Human resource development, Creating enabling environment for public and private sector participation in seed industry</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>---</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>2</td>
<td>NSB</td>
<td>National seed program planning and coordination, Policy formulation and support, Preparation of balance sheet based on national seed demand and supply, Release and registration of new varieties and denotification of absolute varieties, Monitoring and regulation of Genetically Modified Organism/ Living Modified Organism (GMO/LMO), Breeder rights Regular monitoring of impact seed related regulations, Support to Buffer stock creation, Harmonization of seed laws among SAARC countries, Coordination with national plant quarantine for seed import and export</td>
</tr>
<tr>
<td>3</td>
<td>NARC</td>
<td>Strengthening of varietal development and maintenance breeding, Identification of location specific crops/ varieties based on comparative advantages, Partnership in seed research with private sector, Develop inbred lines and supply to seed companies for seed multiplication, Production of breeder and foundation/source seeds, Research on hybrid seed, Utilization of indigenous cultivars in crop breeding, Strengthening and effective operationalization of gene bank, Application of modern breeding techniques, etc</td>
</tr>
<tr>
<td>4</td>
<td>SQCC/ CSTL</td>
<td>NSB secretariat, Seed quality control services, Central Seed Testing Laboratory (CSTL) has been accredited with ISTA for issuing ISTA seed certificate for export, member of APSA, GMO testing, Certification and varietal registration, Support to private sector to follow seed quality and internal quality assurance system, Varietal identification (DUS) and conservation including DNA printing,</td>
</tr>
<tr>
<td>5</td>
<td>DOA</td>
<td>Planning and implementation of seed programs for self sufficiency, import substitutions and export promotion. Technical support and monitoring of district level CBSP and DISSPRO programs. Support private sector in seed production based on internal demands, Identification of seed zones and pocket areas developing seed production norms, support seed growers to be competitive. Market infrastructures development for seed crops, Post harvest support to seed growers with cutting edge technologies, Storage and processing technologies dissemination, management of post-harvest pests and diseases, Support seed extension activities through minikits, demonstrations, PVS, Support seed go down and processing infrastructures</td>
</tr>
<tr>
<td>6</td>
<td>DOLS</td>
<td>Identification and zoning of forage seed production pockets, Production management of source seed production, Facilitating implementation of seed regulations for forage seed crops</td>
</tr>
<tr>
<td>7</td>
<td>NSCL</td>
<td>Production of foundation and improved seeds. Seed multiplication, Procurement, Processing, Storage and Distribution through its dealer networks, Provision of seed storage facilities for national buffer stock maintenance.</td>
</tr>
<tr>
<td>8</td>
<td>TEPC</td>
<td>Facilitate value chain actors in exporting seed as provisioned in export policy. Provide seed trade information to concerned stakeholders</td>
</tr>
<tr>
<td>9</td>
<td>Academic institutions</td>
<td>Development of required human resources in seed related disciplines, seed research, source seed production, development of course curricula and learning materials on seed, training and extension, Identification/on farm testing of location specific crops/varieties based on comparative advantage,</td>
</tr>
</tbody>
</table>

1 Private sector includes individuals and organizations outside the government such as seed entrepreneurs, seed companies, agro-vets, I/ NGOs, CBOs and cooperatives, etc
Regional Level Agencies

<table>
<thead>
<tr>
<th>S. No.</th>
<th>Agency</th>
<th>Roles</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>RAD</td>
<td>Identification of seed pockets and zoning, Monitoring the seed supply situation in the regions from seed companies, support to implement seed regulations in the regions, Management of human resources in the regions.</td>
</tr>
<tr>
<td>2</td>
<td>RSTL</td>
<td>Seed testing and field inspection of seed crops, Monitoring of quality of seeds produced in different farms and stations, Quality checks of seeds sold in market by private sector. Seed testing of reference samples, Inspection of seed stores, Tagging and certification for all kinds of source seeds.</td>
</tr>
<tr>
<td>3</td>
<td>RSTL/RPPL</td>
<td>Soil testing of seed production pockets, and provide needful recommendation, Soil fertility mapping, demonstration of green manure, compost and bio-fertilizers. Surveillance of pest and diseases in identified pockets, Inspection of seed crops, and conduct innovative approaches for learning at farmers levels (IPM, etc)</td>
</tr>
<tr>
<td>4</td>
<td>RARS</td>
<td>Varietal development and maintenance, source seed production, multi location varietal testing, on farm adaptive research and popularization of new varieties (FAT, PVS, FFT)</td>
</tr>
</tbody>
</table>

District Level Agencies

<table>
<thead>
<tr>
<th>S. No.</th>
<th>Agency</th>
<th>Roles</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>DADO/DLSO</td>
<td>Analysis of seed demand and supply situation and preparation of balance sheet for the district, Provide technical support to seed production, Keep updates information on seed growers, Agro vet, seed production groups, Cooperatives and other seed related agencies, Seed zoning and mapping, Support seed growers to get their seed crops inspected by regional seed laboratories, Provide technical assistance to seed growers to label their seed truthfully, Implementation of seed regulations and monitoring of seed supply situation.</td>
</tr>
<tr>
<td>2</td>
<td>DDC/VDC</td>
<td>Coordination of demand and supply, Planning and monitoring and resource mobilization. Support VDC level resource centres and local level seed production to maintain quality and conserve biodiversity.</td>
</tr>
</tbody>
</table>

Source: Compiled from different sources

Private agencies including seed companies, cooperatives, seed producer groups, seed retailers and Non Government Organizations (NGOs) are providing crucial roles in supplying seeds at local level. Private sector now handles more than 90 percent of the formal vegetable seed trade and also supply significant amount of hybrid maize, rice and other seeds. Brief roles of important private and non government agencies related to seed sector development in Nepal are summarized in a Table 3.

Table 3. Role of private and non government agencies in Nepalese seed sector

<table>
<thead>
<tr>
<th>S.N.</th>
<th>Non-government agencies</th>
<th>Roles</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Seed Entrepreneurs Association of Nepal (SEAN), FNCCI (AEC)</td>
<td>Contract seed production, Internal quality control, Educating their members on quality and seed regulations, Policy feedback to government on existing laws, regulations and procedures, Organizing seed traders for quality seed supply in the market. Represent the private seed sector in different committees and task groups, Represent seed entrepreneurs in different national and international forums, and coordination and lobbying to create enabling environment for seed sector development, Sensitization of programs for seed law enforcement, involvement in seed business, seed production of new varieties</td>
</tr>
</tbody>
</table>
Seed Policies, IPRs and Right to Adequate Food in Nepal

2. Seed companies
Seed production, processing, conditioning and marketing. Contracting with seed growers for demand based seed production, Follow up of the contract with farmers.

3. Seed retailers
Sell quality seed as prescribed in the acts and regulations. Store and quality standards as suggested by law enforcing agencies and promote seed sale.

4. Seed growers
Get registered in district agriculture offices through CDD/SQCC, advance planning of foundation seed and request demand to concerned farms, stations or agriculture offices. Seed production planning and contract signing with seed buyers. Quality control in production, cleaning and storage, and supply to companies and distributors.

5. (NGO/CBO/CSO)
Implement programs to support seed growers for quality seed production, processing and marketing, social mobilization, promote use of good quality seeds, assist communities and government agencies to create favourable conditions for quality seed production and use. Support research for variety development and seed production in partnership with GoN.

6. Financial Institutions
Provide short and long term credits required for seed industry development. Provide insurance services to seed production and marketing.

8. Consulting firms and academic research institutions
Conduct research on seed production, processing and marketing issues and provide suggestions to government, seed growers and seed entrepreneurs for speedy growth of seed industry in Nepal.

9. Seed Users, households
Always use good quality seeds. Check packed date, valid period, germination rate and other information, when buying seeds from market.

4. Seed Demand and Supply Situation

Present seed production and demand status shows the wider gap in Nepal (Table 4). Mismatching production of seeds of improved varieties against the varieties in demand is also a major constraint of seed supply system. The requirement of vegetable seed for the year 2010/11 has been estimated 1977 mt, of which around 1158 mt (58%) is supplied by domestic production and rest 829 mt (42%) is met mostly by import and by seed saved through farmer-to-farmer exchange. Nearly eighty-five percent of the total vegetable seeds import occupies by hybrid. The main reasons are that commercialization of fresh vegetables in urban and peri-urban area is increasing at a faster rate, less varietal options and poor quality of national seeds. Also, the price of imported seed is still nearly six times higher than the price of locally produced seed. Locally produced seeds are facing problems of timely inspection, labeling, packaging, branding and marketing at full strength.

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2. VDD, annual progress report 2066/67
3. Swiss Agency for Development and Cooperation-South Asia Division, 2009
Table 4. Demand and supply status of Foundation Seeds of different crops in 2011/12 (mt)

<table>
<thead>
<tr>
<th>S. No.</th>
<th>Crop</th>
<th>Seed supply</th>
<th>Seed demand</th>
<th>Balance</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Paddy</td>
<td>404</td>
<td>318.5</td>
<td>85.5</td>
</tr>
<tr>
<td>2</td>
<td>Wheat</td>
<td>328.1</td>
<td>514.3</td>
<td>-186.2</td>
</tr>
<tr>
<td>3</td>
<td>Maize</td>
<td>103.6</td>
<td>100</td>
<td>3.6</td>
</tr>
<tr>
<td>4</td>
<td>Millet</td>
<td>1</td>
<td>0.63</td>
<td>0.37</td>
</tr>
<tr>
<td>5</td>
<td>Rape mustard</td>
<td>4.8</td>
<td>5.7</td>
<td>-0.9</td>
</tr>
<tr>
<td>6</td>
<td>Lentil</td>
<td>10.1</td>
<td>21.3</td>
<td>-11.2</td>
</tr>
<tr>
<td>7</td>
<td>Soybean</td>
<td>2</td>
<td>1.94</td>
<td>0.06</td>
</tr>
<tr>
<td>8</td>
<td>Groundnut</td>
<td>1.6</td>
<td>0.1</td>
<td>1.15</td>
</tr>
<tr>
<td>9</td>
<td>Mung bean</td>
<td>0.9</td>
<td>2.3</td>
<td>-1.4</td>
</tr>
<tr>
<td>10</td>
<td>Cow pea</td>
<td>0.95</td>
<td>3.4</td>
<td>-2.45</td>
</tr>
<tr>
<td>11</td>
<td>Jute</td>
<td>1.8</td>
<td>0.28</td>
<td>1.52</td>
</tr>
<tr>
<td>12</td>
<td>Chick pea</td>
<td>1.5</td>
<td>1.5</td>
<td>0</td>
</tr>
<tr>
<td>13</td>
<td>Radish</td>
<td>0.849</td>
<td>1.79</td>
<td>-0.941</td>
</tr>
<tr>
<td>14</td>
<td>Bean</td>
<td>1.226</td>
<td>1.178</td>
<td>0.048</td>
</tr>
<tr>
<td>15</td>
<td>Pea</td>
<td>1.332</td>
<td>8.135</td>
<td>-6.803</td>
</tr>
<tr>
<td>16</td>
<td>Mustard</td>
<td>0.808</td>
<td>0.039</td>
<td>0.769</td>
</tr>
<tr>
<td>17</td>
<td>Onion</td>
<td>0.357</td>
<td>0.264</td>
<td>0.093</td>
</tr>
<tr>
<td>18</td>
<td>Cucumber</td>
<td>0.004</td>
<td>0.031</td>
<td>-0.027</td>
</tr>
<tr>
<td>19</td>
<td>Cauliflower</td>
<td>0.341</td>
<td>0.013</td>
<td>0.328</td>
</tr>
<tr>
<td>20</td>
<td>Okra</td>
<td>0.361</td>
<td>0.249</td>
<td>0.112</td>
</tr>
</tbody>
</table>

Source: Seed Balance Sheet for 2011/12, NSB

5. Legal and Policy Framework for Seed and Genetic Resources in Nepal

Among international trade agreements having great significance to agriculture and biodiversity that Nepal has signed include World Trade Organization (WTO), Bay of Bengal Initiative for Multi-Sectoral Trade and Economic Cooperation (BIMSTEC). Nepal is a signatory of South Asian Free Trade Area Agreement (SAFTA) – 2006. This agreement was put forward for trade in goods, services, investment liberalization and improvement of competitiveness in south Asia. These regional agreements are very important for the agriculture trade of the country, because the most of trading partners of Nepal for agriculture products remain in the region.

Nepal became 147th member of WTO in 2004 by undertaking 25 systemic commitments under the terms of its accession. Nepal has committed to create policy and legal measures to enforce WTO principles. Major agreements under WTO are Agreement on Agriculture (AOA), Sanitary and Phyto-Sanitary (SPS) measures, Technical Barriers to Trade (TBT) and TRIPs agreements seems very important for Nepalese agriculture. AOA has the provisions of domestic support, export subsidy and market access of agricultural goods. Under SPS members have the right to take SPS measures necessary for the protection of human, animal and plant life. TBT provisioned right to adopt technical regulations and standards based on non discrimination, transparency, no unnecessary obstacles to trade, mutual recognition, equivalence and harmonization. Similarly TRIPs has the
provision of Geographical Indication (GI) and patent in agriculture. For this, Nepal has committed to establish *sui-generis* system of plant variety protection to fulfill the TRIPs requirements of establishing an effective IPR for increased impact on customary practices of saving, exchanging, replanting and selling seed by farmers in non-branded form and allow farmers’ free and easy access to the seeds of new plant varieties for commercial production. Conservation, exploration, collection, characterization, evaluation and documentation of plant genetic resources for national listing and grant ownership to the concerned community and benefit sharing can encourage farmers for seed production and commercialization of seed business.

Nepalese products are entitled to get duty free access in Indian markets under Nepal India Bilateral Trade Treaty, 2009. Nepal had signed similar trade agreements with other 14 countries before signing WTO. Nepal has recently signed Trade and Investment Framework Agreement (TIFA) with USA. Most of these bilateral agreement are general in nature, does not take agriculture sector in specificity. Again, undisclosed non-tariff barriers, high focus on IPR laws and high SPS measures have always been problem for Nepalese agriculture. Due to patent right of breeders and seed companies on particular variety seed become costlier and farmers have to be relied on them resulting poor or no access to seeds. If SPS/TBT-related seed industry issues are not managed they can have an adverse impact on the sustainability of seed trade (import and export) in the context of the SPS regime under WTO. Seeds of several crops from other countries that might be registered are in the prohibited quarantine category and can be introduced only under phyto sanitary permit. In the face of the WTO regime, access to international seed markets will have to rely heavily on the maintenance of seed standards in terms of quality, safety and genetic purity of seed stocks. Central Seed Testing Laboratory (CSTL) under Ministry of Agriculture Development/Nepal has been recently accredited (2012) with the International Seed Testing Association (ISTA) will thus help to facilitate the seed trade, as it will help in selling seed in international markets with confidence and certainty.

Number of international treaties and agreements as well as national policies and acts related to agriculture and GRs/seeds are in place (*Table 5*). Being a party or member state for different international treaties, Nepal supposed to develop and implement national legislations in compliance with the provisions made. Development of policies in line is fairly better rather than implementation means that capitalizing the good provisions of available policies are still weak due to many reasons. Review of past policies indicates that seed was not explicitly prioritised as a key input and carrier of new technology in agriculture. For instance, Agriculture Perspective Plan (APP), 1995-2015 did not include seed as one of the priority inputs and National Agriculture Policy (NAP) 2004 and other periodic plans did not adequately emphasize the importance of seed. The summary of policy analysis is given in the matrix below.

*Table 5* International/national seed policy regime

<table>
<thead>
<tr>
<th>Policy/Acts</th>
<th>Major provisions</th>
<th>Gaps (from rights perspective)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>International</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CBD, 1992</td>
<td>Conservation and utilization, ABS, and PIC, focus on local community</td>
<td>Delayed in development of national legislation</td>
</tr>
<tr>
<td><strong>Seed Policies, IPRs and Right to Adequate Food in Nepal</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>----------------------------------------------------------</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Seed Policies, IPRs and Right to Adequate Food in Nepal</strong></th>
</tr>
</thead>
</table>

- **WTO, 1995**: AoA, TRIPS, SPS, and TBT, focus on monopoly rights to individual breeders or institutions. Inadequate preparation and competitiveness.
- **ITPGRFA, 2001**: Sustainable conservation, use and benefit sharing; focus on Farmers’ Rights and Multilateral systems of Access. Delayed in development of national legislation.
- **Global Plan of Action, 1997**: Conservation through use, technical support for the countries in the South. Weak implementation guidelines and strategies for NAPA and LAPA.
- **UPOV, 1991**: Nepal is not a member. Focus on Plant Breeders’ Rights and Patents. Should develop own sui generis system.
- **ILO Convention 169**: Focus on Indigenous and Tribal Peoples rights for ABS, FR and PGRs provision on natural resources, include the right of these peoples to participate in the use, management and conservation of these resources. Specific national legislation are not developed for effective implementation.

<table>
<thead>
<tr>
<th><strong>National</strong></th>
</tr>
</thead>
</table>

- **National Agricultural Policy, 2004**: Ensures supply of main production inputs (seeds, breeds and fertilizers) Focus on commercial and competitive agri. With comparative advantage Registration and promotion of local races and TK Explain need of contract farming, insurance and land bank. Agriculture resource centre (ARC) has not established so far Agri.-price, export promotion and marketing not clarified Seed sector and GRs are not adequately addressed.
- **Agri Business Policy, 2006**: Provision of organic certification for trade promotion Collect and disseminate export market information Encourage PPP for marketing development Custom duty minimization on agri. equipments. No special support policy for private seed sector No concrete support program on small agri. enterprise development for poor and marginalized groups.
- **APP, 1995-2015**: Ensures crop production and productivity through priority inputs as fertilizer, irrigation, road, electricity and technology. Seed is not recognized as priority input, lack of support to minor crops and landraces in rain fed risk prone areas.
- **National Seed Policy, 1999**: Well defined seven working policies as, Variety development and promotion, seed production, quality control, involvement of private sector, supply management, institutional strengthening and bio/modern technology. Lack Incentive package for seed industry and private sector, non harmonized with industrial policy 2010, lack seed crop insurance and hybrid seed issue as well as utilization and conservation of local landraces.
<table>
<thead>
<tr>
<th>Policy/Act</th>
<th>Description</th>
<th>Key Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>Seed Act, 1988</td>
<td>Focus on certification and quality regulation, licensing to private sector on crop inspection, seed sampling, analysis and testing; notification of crop/varieties and regulation of import/export</td>
<td>Least provision for the promotion of farmers, varieties and FR, implemented only in 33 districts, non harmonized with international and national treaties related to seed laws</td>
</tr>
<tr>
<td>Local Self Governance Act, 1998</td>
<td>Focus on local decision making, decentralized planning, implementation and use of seeds/GRs for agriculture development</td>
<td>Hindering the seed business due to unhealthy local taxes imposed on seed movement across districts</td>
</tr>
<tr>
<td>National Agrobiodiversity Policy, 2006</td>
<td>Provides overall framework for biodiversity conservation, provide permission to conduct research on GMOs and government can ban import of any GMO with potential risks to alter diversity and health</td>
<td>National legislations subject to control and regulation of GMOs and product thereof are not developed yet.</td>
</tr>
<tr>
<td>Seed Production Guidelines, 1998</td>
<td>District level Seed Self Sufficiency Program (DISSPRO) under DoA is currently implemented in more than 63 districts and is supported by district agriculture development offices and provides necessary technical support and coordination in producing, processing, storing and distribution of seed.</td>
<td>Seed value chain, storage and marketing intervention mechanism has not established clearly, weak linkage with seed traders</td>
</tr>
<tr>
<td>Community Seed Bank Guidelines, 2009</td>
<td>Provide establishment and management of community seed banks where the seed produced are processed, stored and sold locally under the leadership of community. The surplus seed are sold outside the community and districts.</td>
<td>Infrastructure support is deficient, Seed value chain, storage and marketing intervention mechanism has not established clearly</td>
</tr>
<tr>
<td>Three Year Plan (2010/11-2012/13)</td>
<td>Accorded priority for quality seed production and programmed for certification of international standard in seed and livestock production and food commodities to be exported from Nepal by obtaining the accreditation from international seed Certification organizations which certify livestock production and other food commodities⁴.</td>
<td>Enabling environment for private sector involvement in seed sector is lacking.</td>
</tr>
<tr>
<td>National Bio safety Framework, 2006</td>
<td>It authorises the concerned agencies for regulatory measures and guidelines to avoid or minimise potential risks of GMO plant &amp; their products, GM microorganism &amp; their products and GMO animals and their products.</td>
<td>Capacity building, human resource development and strengthening physical facilities on testing are not recognized well.</td>
</tr>
</tbody>
</table>

⁴ GoN (2010). TYP, August, National Planning Commission, Nepal
| **Nepal Biodiversity Strategy, 2000** | **Commitment of GoN to a participatory approach to the conservation and use of biodiversity.** | **Mandatory mechanism to adopt by concerned institution is not addressed.** |
| **National Adaptation Plan for Action, 2010** | **Priority to agro biodiversity management as an adaptation strategy in agriculture to contribute to enhanced food security and recognized community based biodiversity and promotion of crop varieties and livestock breeds resistance to climate change.** | **Contingency plans need to cover new and evolving risk scenarios.** |
| **Local Adaptation Plan for Action, 2011** | **Participatory/iterative planning, implementation and M & E. Steps for LAPA include sensitization, vulnerability and adaptation assessment, prioritization of adaptation options, adaptation plan formulation, integrating the adaptation plan, implementing adaptation plan and assessing progress.** | **Missing clear cut role and responsibility of local agencies and stakeholders. Household and community level strategy need to be implemented for real action.** |
| **Nepal Climate Change and Development Portal, 2010** | **It has brought together 6 line ministries and 80 institutions including civil society, private and the media to create a platform to link community based agricultural biodiversity management with ecosystem resilience, sustainable agriculture and climate change.** | **A multi-pronged approach is needed, at national, regional and international level.** |
| **Contract Farming Guidelines,** | **It provides systematic seed production and marketing procedures following mutual agreement between seed growers and seed traders.** | **Developed without having contract farming act so facing problem of legacy.** |
| **DISSPRO Guidelines, 1998** | **25% subsidies on price of source seed and seed bin and free transportation of source seeds and basically governing by DoA/ DADOs program.** | **Do not cover local and pipeline varieties, small and marginal farmers (GESI), seed value chain and marketing aspect lacking.** |
| **CBSP Guidelines, 2005** | **Encourage seed production of modern and local varieties of farmers' preference through PVS, GESI approach and more subsidies than DISSPRO** | **Role of implementing agencies in seed marketing not clear, less involvement of public agencies focus with I/ NGOs.** |
| **PVP and Farmers’ Rights bill** | **Focus on granting patent to Breeders and Farmers; Save, use, exchange, sale of seeds on non-branded form** | **Not promulgated** |
Gene Bank Policy | Collect, classify, preserve, document, manage and sustain the genetic resources of plants as well as of livestock and microorganisms; Fulfilling national obligations under the CBD 1992 and the ITPGRFA 2001 | Less emphasis to conserve local races

Source: Compiled from different sources


6.1 Variety Release

Varieties developed in Nepal are notified largely through release system. Under release process proponent should submit the proposal for national release of a crop variety to National Seed Board (NSB) as per standard format provided. The minimum requirements and data on general information, varietal characteristics, and morphological descriptions, identifying characteristics of a crop variety for its distinctness and recommendation domain are compulsory with three season trial data carried out by concerned researcher. The quality control of these varieties is done by seed certification system. Seed certification system is a process where quality of seed is declared/certified by authorized seed certification agencies based on fulfillment of prescribed field and seed standards and receives an official tag for commercial mobilization. Tag color and seed standards vary according to seed class i.e., breeder, foundation and certified seed.

6.2 Variety Registration

Mostly imported crop varieties as well as national varieties are notified through registration process. For this, proponent should submit the proposal for national crop inventory (Registration) of a crop variety to National Seed Board (NSB) as per standard format provided. The minimum requirements and data on general information, varietal characteristics, and morphological descriptions, identifying characteristics of a crop variety for its distinctness and recommendation domain are compulsory. In addition, following points are the general requirements to facilitate the process of variety listing smoothly:

- Minimum one-season data on varietal performance from researcher designed and researcher managed replicated trials or participatory trials along with farmers and other stakeholders' preferences;
- Supporting information from farmers, processors and consumers from participatory trials or other forms of on farm experimentation under farmers' management should be included. Both quantitative and qualitative data are encouraged to be incorporated;
- Submission of data on DUS for introduced variety is necessary if NSB does not satisfied with submitted agronomic and morphological characters but can be obtained from other countries in case of landraces, data/information on Distinctness
and Stability will be sufficient and indigenous knowledge and information will be accepted to satisfy these requirements;

- A sample of the nominated variety will have to be submitted to the variety approval, release and registration subcommittee. The quantity of the sample should be 50 g for small grain crops, 500 g for medium grain crops and 1 kg for large grain crops;
- Varieties developed using terminator gene technology will not be entertained for national crop inventory. Variety developed using any biotechnological tools should also be disclosed,
- Color photo and herbarium of different growth stages should be submitted to NSB.

If the submitted proposal fulfils above requirements, it passes through the series of meetings from Technical Sub-Committee (TSC), Variety Approval Release and Registration Sub-committee (VARRS) and NSB during process of registration. Only the crop/variety approved by NSB goes for notification in Nepal Gazette. Once the crop/variety is notified, the importing agency supposed to apply for import license to NSB with proforma invoice and NSB provide import permission letter to the importing party for the particular variety and quantity.

### 6.3 Genetically Modified Organisms (GMOs)

As Nepal has signed the Cartagena Protocol on Biosafety, on 2 March 2001, originated from the framework of Convention on Biological Diversity (CBD), 1992. It deals with the regulations related to the safety of the GM technologies and effects of GM products on human health, biodiversity and environment. It entered into force from 11 September, 2003 and binds the members to implement precautionary principle in handling and trade of GMOs with the development of national legislation and institutional framework. In this regard, Nepal has made provision of National Focal Point of CBD for Ministry of Forest and Soil Conservation (MoFSC), Biosafety Clearing House (BCH), National Biodiversity Coordination Committee, National Biosafety Committee and establishment of six Sectoral Competent Authorities for effective monitoring and regulation of GM products. These competent authorities are supposed to fulfill the procedures in respective sectors as per flow diagram in (Annex 6) for the response of civil society and other stakeholders. GMOs may be seed, plants animals for the agriculture or forestry purpose, and products of GMOs or products containing GMOs such as food, feed or pharmaceuticals. Therefore, depending upon the types of the GMOs and products thereof, respective sectoral line agencies will be responsible for the evaluation of the respective proposals and its risk assessment report, monitoring of the implemented proposals, ensure that the GMOs or its products permitted for testing, storage, use are properly labeled with the description of its composition, direction for use, potential risk, and management of the risks arising from implementation of the proposal.

The Sectoral Competent Authorities (SCA) evaluates a proposal on GMOs and products thereof, and the risk assessment report in consultation with experts of the concerned GMO, biodiversity, ecology, social science and representative of consumers or farmers association. Moreover, depending upon the type of GMO, the SCA consults with any or group of the experts in the field of nucleic acid technology or molecular biology,
molecular genetics, population genetics, taxonomy, microbiology, virology, botany, zoology, entomology, veterinary science, agronomy, forestry, pathology, epidemiology, process technology, biochemistry and toxicology and so on as required. Any tests of the GMOs have to be carried out in accredited laboratory. The SCA submits its comments to the National Competent Authority (NCA) on the basis of any laboratory tests and the evaluation conducted in consultation with the concerned experts of different fields.

In case of seed, no any GM seeds are registered and introduced in Nepal so far. GMO laboratory under SQCC carries out detection test on seeds of maize and soybean every year for imported samples collected from border districts by using Polymerase Chain Reaction (PCR) technique. In 2010/11 five varieties of imported hybrid maize seed samples (India) were collected from Nepalgunj, Bhairhawa, Butwal and Janakpur tested by using Cry 1Ab/Bt11 event kit through lateral flow stripe test method for GMO, found negative. Similarly five imported samples (China) of soybean were collected and tested by using Envirologix-RUR- Round Up Ready Event lateral flow stripe test also, found negative for GMO.

National legislation mechanism, human resources and physical facilities are not well established in testing and regulation of GMOs. Lack of trained personnel, equipped laboratories for detection, identification and quantification of GMOs are shortcomings. Furthermore lack of team of experts to evaluate biosafety report provided by the proponent and its impact on health, biodiversity and environmental risks including institutional set up and capacity build up.

6.4 Conservation of Genetic Resources (In-situ)

The National Agriculture Genetic Resources Centre (NAGRC) or Gene Bank under the NARC collect, classify, preserve, document, manage and sustain the genetic resources of plants as well as of livestock and microorganisms as ex-situ conservation. The centre also plays a central role in fulfilling national obligations under the CBD 1992 and the International Treaty on Plant Genetic Resources 2001. Develop or adapt national strategies, plans or programmes and Integrate these plans into sectoral or cross sectoral plans, programmes and policies for sustainable conservation, use and equitable benefit sharing; focus on Farmers’ Rights and Multilateral Systems of Access are prime obligations under CBD/ITPGRFA. Preservation of genetic resources through the gene bank is expected to directly benefit the farmers apart from ensuring that the future generation is able to utilize traditional knowledge, skills and resources. The bank shall also classify and evaluate the genetic resources before distributing it to the farmers, breeders (seeds and seeding materials), industrialists (medicinal herbs for commercial cultivation and processing) and private seed companies (inbred lines and source seeds for seed production and multiplication). The bank will adopt partnership and close collaboration with the Consultative Group on International Agricultural Research (CGIAR), multinational seed companies and Asian Vegetable Research Development Centre (AVRDC) for exchange and conservation of genetic resources.
6.5 Intellectual Property Rights Regimes on Genetic Resources

Intellectual property (IP) is a term referring to a number of distinct types of creations of the mind for which a set of exclusive rights are recognized under the corresponding fields of law. Under intellectual property law, owners are granted certain exclusive rights to a variety of intangible assets, such as musical, literary, and artistic works; discoveries and inventions; and words, phrases, symbols, and designs. Common types of intellectual property rights include copyrights, trademarks, patents, industrial design rights and trade secrets in some jurisdictions. This report covers only the IPR related to GRs and Traditional Knowledge (TK) in agriculture. At the same time, a number of concerns are raised by the development of intellectual property rights over the past few years. It will lead to transfer of resources from technology users to technology producers, both within States and between States. The oligopolistic structure of the seed providers’ market may result in poor farmers being deprived of access to seeds, productive resources essential for their livelihoods, and it could raise the price of food, thus making food less affordable for the poorest.

Article 27.3(b) under WTO is an enduring subject for trade negotiations and NGO activism on TRIPs. Undoubtedly, this part of TRIPs is extremely important for developing countries. Developing countries need to define their biotechnology policies before a rational IPR system can be developed. According to TRIPS provision, member shall provide for the protection of plant varieties either by patents or by an effective sui generis system or by any combination thereof. Article 66.1 of the TRIPS Agreement specifies a transition period for Least Developed Countries (LDCs) to delay protecting intellectual property under the agreement i.e., July 1, 2013 for Nepal. Nepal has committed to establish sui generis system of plant variety protection to fulfill the TRIPs requirements of establishing an effective IPR. Nepal has drafted Plant Variety Protection and Farmers’ Right (PVP&FR) Bill as a sui generis system for the protection of plant varieties and farmers’ rights is not approved and implemented yet. Table 6 provides brief rights framework about internalizing basic rights of farmers, community and indigenous community through which realization of food right could be achieved.

Table 6. Internalizing the Rights Framework

<table>
<thead>
<tr>
<th>Farmer’s right</th>
<th>Community Rights</th>
<th>Indigenous Community Rights</th>
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<tbody>
<tr>
<td>Right to produce, save, sell and reuse. Right to get compensation in case of crop failure. Ownership to variety and technology developed by farmers.</td>
<td>PIC ABS PVP FR GI</td>
<td>Participate in consultation and decision making Benefit sharing arising from use of indigenous resources</td>
</tr>
</tbody>
</table>

6.6 Farmers’ Rights on Genetic Resources

The International Treaty on Plant Genetic Resources for Food and Agriculture (ITPGRFA) was adopted at the Thirty-first Session of the Conference of the Food and Agriculture Organization of the United Nations (FAO) in Rome 3 November 2001. It entered into force 29 June 2004, and is the first legally binding agreement exclusively pertaining to
the management of plant genetic resources for food and agriculture. Its objectives are the conservation and sustainable use of these resources, and the fair and equitable sharing of the benefits arising from their use – in harmony with the Convention on Biological Diversity (CBD) – for sustainable agriculture and food security. The most important benefit is that of access to these vital resources for food and agriculture. The core of the International Treaty is a Multilateral System of Access and Benefit Sharing concerning 35 food crops and 29 forage plants that are under the management and control of the Contracting Parties and in the public domain.

The Farmers’ Rights (FR) is a precondition for the maintenance of crop genetic diversity which is the basis of all food and agricultural production in the world. It is also a cornerstone in the (ITPGRFA), 2001. Basically, realizing FR means enabling farmers to maintain and develop Crop Genetic Resources (CGRs) as they have done since dawn of agriculture, and recognizing and rewarding them for this indispensable contribution to the national/global pool of GRs. Article 9 of the treaty address the Farmers’ Rights as-

9.1 The Contracting Parties recognise the enormous contribution that the local and indigenous communities and farmers of all regions of the world, particularly those in the centres of origin and crop diversity, have made and will continue to make for the conservation and development of plant genetic resources which constitute the basis of food and agriculture production throughout the world.

9.2 The Contracting Parties agree that the responsibility for realising Farmers’ Rights, as they relate to plant genetic resources for food and agriculture, rests with national governments. In accordance with their needs and priorities, each Contracting Party should, as appropriate, and subject to its national legislation, take measures to protect and promote Farmers’ Rights, including protection of traditional knowledge relevant to plant genetic resources; the right to equitably participate in the sharing of benefits arising from the utilisation of plant genetic resources and the right to participate in making decisions, at the national level, on matters related to the conservation and sustainable use of plant genetic resources for food and agriculture.

6.7 PVP & FR Bill in Nepal

In the context of Nepal being a member of World Trade Organization (WTO), it has obligation to establish legal mechanism to ensure intellectual property right on new plant varieties. To fulfill this obligation, Nepal has drafted Plant Variety Protection and Farmers’ Right (PVP&FR) Bill as a sui generis system for the protection of plant varieties and farmers’ rights. The Bill has made a number of provisions for the protection of breeders’ and farmers’ right on new plant varieties suitable for Nepalese context. Breeders’ right includes granting of IPR to breeders providing them exclusive right for commercial production and marketing of the seeds of new plant varieties. One of the major farmers’ rights includes their right to use, reuse, produce, save, exchange and sale in non-branded form. The Bill has also made provisions for registration and granting ownership of new and local plant varieties.
The main objective of the PVP&FR Bill is to provide protection to the plant varieties for agricultural development, sustainable food security and conservation of biodiversity in the country. More specifically, as stated in the preamble, it has following three objectives:

- Establish breeders’ and farmers’ right on plant varieties
- Encourage research, investment and technology transfer
- Promote agricultural development, food security and agro-biodiversity conservation

The PVP&FR Bill include all kind of provisions necessary for the protection of breeders’ IPR on the new plant varieties as well as protection of farmers’ customary rights over the varieties. A number of provisions have also been made to allow farmers’ free and easy access to the seeds of new plant varieties. The key features of the proposed PVP&FR Bill have been summarized in the Table 7.

**Table 7. Key features of the PVPFR Bill**

<table>
<thead>
<tr>
<th>Key elements</th>
<th>Key features</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Scope</td>
<td>Covers all plant type and varieties.</td>
</tr>
<tr>
<td>2. Types of rights</td>
<td>Protect both breeders’ and farmers’ right over plant varieties.</td>
</tr>
<tr>
<td>3. Mechanism of IPR protection</td>
<td>Registration of the plant variety, and granting of ownership right to the breeder for new plant varieties and to farmers for their plant varieties.</td>
</tr>
<tr>
<td>4. Types of plant varieties</td>
<td>Includes both new as well as farmers’ plant varieties.</td>
</tr>
<tr>
<td>5. Origin of varieties</td>
<td>Varieties developed in Nepal and WTO member countries in case of new plant varieties, and varieties traditionally grown in Nepal in case of farmers’ plant varieties.</td>
</tr>
<tr>
<td>6. Criteria for registration for IPR protection</td>
<td>Registration criteria for new plant varieties include: New and Distinct, Uniform and Stable (DUS). Registration criteria for farmers’ plant varieties include: Distinct, Uniform and Stable (DUS).</td>
</tr>
<tr>
<td>7. Bio-safety measures</td>
<td>Plant varieties, developed using terminator technology, are not eligible for registration. GMO plant varieties require submission of associated information and report of bio-safety analysis.</td>
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</table>

Plant breeders have been given exclusive breeders’ right over their new plant varieties. Upon registration of the new plant varieties, breeders automatically receive right of ownership for a specified period. This period, as proposed currently, is 15 years for annual plants and 18 years of perennial vine and tree plants. In addition to this, numbers of provisions have been made in the PVP&FR Bill to protect breeders’ IPR on new plant varieties with some breeders’ exception also.

The provision of farmers’ right is an important feature of the PVP&FR Bill. Adequate care has been taken to include provisions that provide farmers an unconditional access to the seeds of protected plant varieties for their own and non-commercial use, without violating conditions of the breeders’ right. Provisions have also been made to adequate protection to farmers’ plant varieties. These as well as other provisions of the PVP&FR relevant to farmers’ right are discussed in the following sub-sections. A number of provisions have been made as farmers’ right over the use of seeds of new plant varieties.
These include:

- Rights to use, save, re-use, exchange and sale the seeds of protected plant varieties in non-branded form. The provision of this right has been made to protect farmers' customary practices of seed management prevalent in the informal seed systems. By tradition, Nepalese farmers have been freely using, saving, exchanging and selling seeds within their communities. The provision is also very important to ensure seed security of small and poor farmers as their access to commercial seeds is not only limited due to under-developed markets but also due to very limited purchasing power. This provision plays key role in establishing the proposed PVP&FR Bill as an effective *sui generis* system of IPR protection.

- Right to claim compensation or claim ownership or cancel ownership right when a breeder is found to develop new plant variety without making PIC and benefit sharing agreements or without disclosing source location and community, and parent materials used for breeding new variety.

- Right to claim compensation for losses due to bad quality seeds or wrong information about the use of seeds of protected plant varieties.

- Rights to have access to seeds of protected varieties if the supply of these seeds is limited by ill-intention or with intention to create monopoly.

The PVP&FR Bill has also made provisions – both IPR and non-IPR protection provisions for the protection of farmers' right over farmers' plant varieties. Two types of farmers' varieties, namely farmers' registered plant varieties and farmers' existing plant varieties, lying in public domain, have been recognized. The provisions of farmers' right over these plant varieties, as stated in the Bill, include:

- Right to IPR protection on farmers' varieties. The Bill has made provisions for the registration of farmers' varieties meeting DUS criteria and obtaining right of ownership on the seeds of such varieties. This is IPR protection provision.

- Right to grant PIC for the use of farmers' existing varieties in public domain.

- Right to claim or participate in benefit sharing arising from the use of such varieties, including right to claim compensation if PIC agreement is violated.

- Rights to information for each use of such varieties in the variety development process or in the process of bio-prospecting.

- Farmers have been exempted from the registration and annual fee for farmers' varieties.

A number of provisions directly or indirectly relevant to the protection of IPR on registered plant varieties have also been made on the proposed PVP&FR Bill. Provisions related to plant varieties:

- Restriction on use of terminator technology for the development of new plant varieties. Such varieties will not eligible for registration in Nepal.

- Registration of GMO seeds requires disclosure information and report of bio-safety analysis.

- There is provision of compulsory licensing to discourage monopoly. The authority can issue compulsory license to the third party for the production and marketing of seeds of protected plant varieties if the owner of such varieties do not supply seeds in adequate quantity within three years of registration or do not supply seeds in competitive price.

- The duration of protection is specified currently as 15 years for annual and 18 years for perennial, specifically vine and tree plant varieties.
6.8 Access and Benefit Sharing (ABS)

Nepal has its obligation to comply with treaties and commitments that of fulfilling necessary policy, legal and administrative measures related to CBD, 1992. ABS is one of the important aspect of CBD that Nepal Government has to fulfill its commitments are still remained slowly. The Ministry of Forest and Soil Conservation (MoFSC), the focal ministry for CBD, formulated a National Biodiversity Strategy (NBS) in 2002. MFSC produced the first draft of Access to Genetic Resources and Benefit Sharing (AGRBS) Bill in 2002 has included all the provisions of ABS as stipulated in the CBD. These provisions include- ownership on genetic resources and genetic material; rights to traditional knowledge; biodiversity registration to claim ownership; access provisions and conditions; Benefit sharing; NGRCC Fund etc.

6.9 Issues

In recent days, an issue of hybrid seeds and GMO has obtained a big coverage in Nepalese media. It generates concern from three different prospects of nature namely, food and agriculture, environment and economy. It is a people’s right to debate about pros and cons but it is realized that there is a big confusion in understanding some of the terminologies of biotechnology. Hybrid crop, biotech crop and GM crop are three different terminologies erroneously used interchangeably.

Past experience of hybrid seed use showed that some of serious issues/problems rose in hybrid maize failure in Bara, Parsa, Rautahat and Sarlahi in 2010 winter season. Compensation was claimed by farmers from areas where maize mission program was carried out by DoA/CDD. In fact farmers in these districts used to grow hybrid since long time back however, the crop got failure in 2010. According to field observation, monitoring, survey conducted by technical team found that silking and tasseling stage was coincided with very low temperature and cold wave affected in pollination and fertilization, which resulted in poor grain filling. According to an innovative farmer Mr. Ram Ashray Prasad and his group members from Prastoka, Bara Nepal told that they are shifting date of hybrid maize seeding one month later than usual date of seeding could escape the cold injury for safe production. Similarly in 2010, improved varieties of rice distributed by FAO failed to produce rice yield in FWDR mainly due to unsuitable domain to the varieties. In the context of rapid increment of seed business by multi- national seed companies in Nepal, the poorest farmers are increasingly becoming dependent on imported seeds are costlier and creating the loss of local Genetic Resources (GRs). Beyond this, a forward looking perspective is the increased vulnerability of the small farmers due to the risk associated with the potential failure of modern crop varieties and imported seeds from abroad. Seeds are distributed to the farmers without any technical suitability and tracings about the variety and production practices by some NGOs in Nepal. Truthful labeling system is misused in many cases by unscrupulous
seed traders and poor quality seeds are sold out to farmers. Again failure of hybrid maize crop in Bara district has been reported by media and local farmers. Mostly the non notified varieties without multi location and growing season performance test are repeating the problem. This situation indicates there is urgent need of development of climate resilience OP and hybrid varieties which can well adopted even in adverse climatic condition since cold wave in terai region during winter season is inevitable. Therefore, proper conservation and utilization of local genetic resources to develop climate resilience varieties is very crucial in Nepal.

Thus the information about tested suitable varieties, technical information, extension teaching and specific package of practices need to be provided duly by seed companies, extension workers and researchers to target growers.

Major issues raised by farmers and other stakeholder during field survey in the context of seed access are inadequate varietal choice, low production potential, inadequate production of source seeds and improved seed, low capacity for seed processing and storage, lack of proactive marketing mechanisms and poor or no support to seed growers in particular who produce seeds of local varieties. Again the loss of valuable local germplasm (and their proper conservation is a burning issue of the day.

Critical issues/concerns related to genetic resources/seeds at each level of value chain actors; Researcher/Breeders, seed producers, processors, seed dealers and ultimate seed users has to be understood well for careful planning and implementation of the programs and projects. Important concerns from the perspective of seed value chain actors are described in Figure 1.

Figure 1. Seed value chain actors, factors and their relationship

<table>
<thead>
<tr>
<th>Researchers &amp; Breeders</th>
<th>Seed Users</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Slow varietal replacement</td>
<td>- Poor performance of Varieties</td>
</tr>
<tr>
<td>- Inadequate varietal maintenance</td>
<td>- Improper packaging and labelling,</td>
</tr>
<tr>
<td>- Low investment in plant breeding</td>
<td>- Limited implementation of consumer rights</td>
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<tr>
<td>- Low motivation for Breeders</td>
<td></td>
</tr>
<tr>
<td>- Limited number of qualified breeders</td>
<td></td>
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<tr>
<td>- Low participation of private sectors in plant breeding</td>
<td></td>
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<tr>
<td>- Inadequate use of crop genetic resources</td>
<td></td>
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<tr>
<td>- Poor mechanism for research feedback</td>
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<table>
<thead>
<tr>
<th>Seed Producers</th>
<th>Seed Dealers</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Public sector dominance in source seed production,</td>
<td>- Inadequate seed networks</td>
</tr>
<tr>
<td>- Inadequate seed planning and monitoring,</td>
<td>- Lack of awareness campaigns</td>
</tr>
<tr>
<td>- Multiplication cycle not adequately maintained,</td>
<td>- Unregulated flow of exotic hybrid seeds</td>
</tr>
<tr>
<td>- Absence of decentralized source seed production</td>
<td>- Improper labelling and inappropriate size of seed containers</td>
</tr>
<tr>
<td>- Inadequate incentive package for seed growers</td>
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</table>

<table>
<thead>
<tr>
<th>Seed Processors</th>
<th>Seed Users</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Underutilized processing plants and storage capacity in public sector</td>
<td>- Poor performance of Varieties</td>
</tr>
<tr>
<td>- Low capacity for processing/conditioning in private sectors,</td>
<td>- Improper packaging and labelling,</td>
</tr>
<tr>
<td>- Low investment in seed infrastructures</td>
<td>- Limited implementation of consumer rights</td>
</tr>
<tr>
<td>- Poor seed processing procedures and quality measurement</td>
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</table>

8 Hari Sharma, Cluster agronomist (HMRP/CIMMYT), Dadeldhura
Among others, some of the issues in the context of Nepalese seed sector are as follows:

- All farmers do not buy seed. Some of them especially in rural areas save and use their own seed.
- Many farmers are using hybrid seeds that are not produced in Nepal commercially. Hence seed import is encouraged.
- Hybrid seeds are very expensive for small and subsistence farmers. Hybrid seed production systems have not been established in Nepal.
- Confusion arises between GM seeds and hybrid seeds. Lack of perfect knowledge and awareness about the origin of these.
- A large number of agro-vet (1600 registered in NSB) owners are from non-agriculture backgrounds and are not technically capable of handling and providing appropriate information to farmers on hybrid seeds.
- Complication in registration and regulation of imported hybrid seeds. Still, large numbers of varieties are waiting for registration in NSB.
- Limited effort for breeding climate resilient and high yielding varieties.
- Inadequate functional arrangement for vegetable and underutilized crops breeding.
- Lack of R&D components in private sector.
- Poor linkage with international research institutions/universities mainly on horticulture, NTFPs, and other underutilized crops.
- Limited capacity to use modern techniques of plant breeding.
- Lack of awareness programs on potential risks and benefits from GMOs and products thereof and the biosafety measures to be adopted.
- Lack of strong policies, mechanisms, physical facilities, and skilled human resources for GMO control and regulation.

6.10 Constraints to Conserve and Use of GRs

Some of the important causes due to which conservation and use of traditional crop varieties and other associated knowledge at the verge of extinction are as follows:

6.10.1 Local crop genetic diversity does not exist or is insufficient within the production system

a. Local crop genetic diversity does not exist within the production system ecosystems
b. Local crop genetic diversity exists but at insufficient quantities due to
   - Insufficient materials available
   - Lack of capacity to multiply materials

6.10.2 Local crop genetic diversity is not accessible to farmers

a. Farmers lack resources to acquire the materials
   - Lack of funds to access from within the community
   - Lack of funds to cover transportation costs from outside the community.
b. Crop genetic diversity is not accessible due to social constraints
   - Pressure from formal sector deters accessibility.
   - Lack of social ties to access diversity.

c. Seed flow systems lack the capacity to change or provide large enough sample sizes to ensure adaptation and evolution.

d. Policies and institutions constrain seed flow.

6.10.3 Farmers do not value and use local crop genetic resources
a. Farmers do not perceive the local crop genetic materials as competitive
   - Information on the value/benefit exists but not available or accessed
   - Information on the value/benefit of the materials does not exist.

b. The materials have poor agronomic, ecological and/or quality performance or cultural acceptability.
   - The material has low agronomical performance
   - The material is not adapted to abiotic conditions
   - The material is not adapted to biotic pressures
   - The quality of material is poor.
   - The material is not culturally acceptable.

c. Management of the materials can be improved.
   - Seed cleaning and storage is a constraint
   - Materials are not managed as diverse sets of varieties

6.10.4 Farmers do not benefit from the use of local crop genetic resources/diversity.

a. Insufficient market benefits from the materials.
   - Low market value
   - Low market demand
   - Lack of technology to process diverse materials
   - Lack of trust among market chain actors

b. Insufficient non-market benefits from the materials.
   - Social-cultural benefits not valued
   - Substitution for inputs (fertilizers, pesticides) not valued.
   - Ecosystem service benefits of the materials not valued.
   - Farmers' right not valued
   - Lack of social responsibility

c. Weak local institutions and farmer/community leadership
   - Lack of collective action
   - Lack of farmer/community leadership

The scope and success of integration approach with farming communities will depend on available opportunities and challenges. Opportunities and challenges work in both ways for different stakeholder and farming communities and require striking a right balance. Incentives to one party should not be disincentives for another party. It is necessary to create a win-win situation through a transparent, and a fair and equitable benefit sharing mechanism for successful collaborative agreement between different stakeholders having interest and stake in the access and use of genetic resources, and the farming communities holding such genetic resources. The realized issues and
constraints to different stakeholder for collaborating with farming communities for research and development on PGRFA are presented in **Table 8** below:

**Table 8. Issues and constraints of different stakeholders**

<table>
<thead>
<tr>
<th>Stakeholders</th>
<th>Issues</th>
<th>Constraints</th>
</tr>
</thead>
</table>
| Farmers, indigenous people and agencies| • Access to improved varieties and seeds  
• Increased varietal choice  
• New knowledge and capacity building  
• Monetary benefits  
• Seed security | • Bio-piracy of genetic resources and traditional knowledge  
• Possible lack of fair and equitable benefit sharing due to inadequate information  
• Danger of losing PGRFA due to limited access to national and international gene banks |
| Researcher scientists and agencies      | • Access to farmers’ *(in-situ)* PGRFA and associated TK for research and breeding  
• Opportunity for broadening genetic base for breeding  
• Increase research and breeding efficiency due to farmer participation (e.g. PPB)  
• Benefit from IPR protected new plant varieties | • Limited access if complicated and lengthy PIC process  
• Free access to farmers for reproduction, use, exchange and local sale of IPR protected seeds  
• Difficulty in monitoring non-compliance of benefit sharing agreement |
| National Gene Bank                      | • Access to PGRFA in *(in-situ)* condition at relatively low cost  
• Easy and low cost rejuvenation of *(ex-situ)* collection in farmers’ field  
• Access to associated TK to add research and breeding value to *(ex-situ)* collection | • Limited access if complicated and lengthy PIC process  
• Risk of contamination in community-based rejuvenation |
| Development workers and agencies        | • Access to farmers’ PGRFA and associated TK  
• Promote resilient food production systems  
• Build on local seed systems to ensure seed security  
• Sustain development interventions through participation of farmers and farming communities | • Limited economic incentives to promote conservation of all PGRFA through use  
• Difficulty in meeting needs and expectations of farming communities with limited resources |
| Academicians and agencies               | • Access to farmers’ *(in-situ)* PGRFA and associated TK for research and teaching  
• Opportunity for students for field research and learning from farmers | • Limited access if complicated and lengthy PIC process  
• Limited scope for development intervention and meeting needs and expectation of farming communities |
7. Recommendations

Increasing trend of hybrid seeds use in vegetables, maize and rice becoming an opportunity as well as challenge for meeting seed security in compliance with food security. Loss/erosion of local genetic resources is the result of over exploitation, population pressure, expansion of roads and transport, creation of development infrastructures, as well as products of modern biotechnology. Newer species/varieties may perform well only under very specific conditions for instance, on irrigated or well fertilized conditions/fields. Other agronomical characteristics such as long term viability of seeds, insect, disease, stress resistance or better post harvest characteristics may favor traditional crops. Culinary preference or ritual use may require traditional varieties are main reasons need to be maintained as cultural and indigenous genetic resources.

Recently issue has been raised by civil society, media and farmers’ right based organizations regarding GMO and terminator seeds. Terminator technology is not allowed in Nepal as per provision of national policy/legislation. Nepal is very infant stage in GM crop testing, quality control and development of legislation. Research should be done by sectoral competent authorities on any GMO with potential risk to alter diversity and negative impact on health and environment.

Urgent government measures and increased public and private investment in the seed sector are required for the long term if agriculture is to meet the challenge of food insecurity in the context of population and climate change (Second world seed conference, rome, 2009). At the regional level, each member state must recognize the immediate need to identify and exchange released varieties, and germplasm within SAARC countries; rationalization and harmonization of seed regulatory framework and establishment and operation of regional seed bank and seed buffer stock to improve regional food and nutrition security in the context of natural calamities. For this, the country should implement a predictable, reliable user friendly and affordable seed production, processing, and regulatory mechanism to ensure that the farmers have increased access to high quality seed at a fair price in a sustainable manner. So, the government of Nepal needs to act strategically ahead to implement adaptive
agricultural programs that while ensuring a continued and stable food production to an ever growing population in the country will mitigate predicted risk/enhance adaptive measures and resilience production systems.

Concerted efforts on resource, knowledge and power (Figure 2) are needed from all to address the poverty issues providing opportunities to fight against hunger, desperation and uncertainty. There are growing recognition and empirical evidences that the agriculture has a major role to play for sustainable economic growth. The key to agriculture growth and easing food security is to increase productivity through ensuring seeds and breeds security. The need to increase world food production can only be met by proper policy environments, coordination, participatory and transparent decision making, integration of resources accompanied by need based planning, implementation and monitoring.

Figure 2. Power concentration (Source: Adapted from Ghale Y., and B.R. Upreti, 2008)

Mobilizing and empowering communities in biodiversity management could be considered as best and pragmatic approach to ensure conservation and access to genetic resources. A set of good practices for implementing community based on farm conservation of agro biodiversity as a model is suggested in Table 9.

Table 9. Good practices of on farm conservation

<table>
<thead>
<tr>
<th>Process of on farm conservation of agro biodiversity</th>
<th>Good Practices</th>
</tr>
</thead>
<tbody>
<tr>
<td>Developing understanding of local context and local agro biodiversity</td>
<td>RRA, social seed network, baseline survey</td>
</tr>
<tr>
<td>Sensitizing farming community and key stakeholders</td>
<td>Village workshop, meeting, diversity fairs, visits, rural radio</td>
</tr>
<tr>
<td>Locating, characterizing and valuing useful diversity</td>
<td>Intensive data, diversity fairs, diversity blocks, kits, CBR</td>
</tr>
<tr>
<td>Improving access to materials and knowledge</td>
<td>Diversity fairs, blocks, kits, promoting nodal farmers, community seed bank</td>
</tr>
<tr>
<td>Managing community information systems for empowering and monitoring local biodiversity</td>
<td>CBR, CBM</td>
</tr>
<tr>
<td>Developing options for adding social, economic and environmental benefits to community</td>
<td>Value addition program, PVS, PPB, landrace enhancement, community seed production</td>
</tr>
<tr>
<td>Sustainability</td>
<td>CBM, microcredits, linkages with other agencies</td>
</tr>
</tbody>
</table>

Source: Sthapit et al.2004
Based on the critical analysis of the study, we must at once ensure the coexistence of the commercial seeds system and of the farmers’ seeds system, each of which has a different function to fulfill in the food system; and ensure that innovation in both systems works for the benefit of the poorest and most marginalized farmers, particularly in the context of Nepal. Only by seeking to achieve both simultaneously, it can be expected a system which adequately balances the needs for innovation, for the preservation and enhancement of crop diversity, and for improving the livelihoods of small scale farmers in developing countries, who overwhelmingly still rely on seeds which they save from their own crops and which they donate, exchange or sell, often informally. The linear idea of progress favoring the replacement either by high-yielding varieties or from the improvement of traditional crop varieties in the most productive areas embodies a vision of food security.

Apart from various approaches, strategies and needing greater attention for conservation, utilization of GRs and enhance access to those resources discussed above, some of the key recommendations made categorically are as follows:

### 7.1 Policies Regime

1. Revision and enforcement of legislations according to obligation of treaties and agreements made by Government of Nepal like IPR, ABS, and GMO is essential.
2. Strengthening farmers’ capacity and decentralized seed production system which serves as technically viable and cost-effective method for supplying seeds to resource poor in Nepal.
3. Revise agricultural biodiversity policy and seed policies to address outstanding issues of Farmers’ Rights, MLS, ABS, and include pragmatic strategies with the provision of Biodiversity Trust Fund for conservation and sustainable use of GRs.
4. Review piloting of institutionalizing various modalities of CBR for claiming ownership, PIC granting process and access rights to genetic resources, particularly by farmers’ organizations.
5. Provision of compensation, seed crop insurance and minimum seed pricing policy and seed buffer stock.
7. Control and regulation of GMO based on bio-safety report and ban/don’t allow import and use of terminator technology.

### 7.2 Managerial

1. Strengthen Public Private Partnership (PPP) on resource integration, planning, implementation, M & E, and training on production of hybrid and OPVs seeds.
2. New conservation efforts must establish ties to wider range of crop conservation programs, including regional and nongovernmental organizations that work directly with farmers who are primary source of crop germplasm.
3. Urgent mapping out of local plant genetic resources so as to better mobilize their comparative advantages as risk coping measures.
4. Increase release of competitive varieties rapidly to provide diverse choices for farmers. The variety release and registration process for local/farmers' varieties should be simple.
5. Support participatory genetic enhancement (local selection, improvement, scale up and seed/breed multiplication) programs in marginal and subsistence areas to enhance varietal options.
6. The conservation and up scaling of minor crops or ones that have highly localized importance
7. Emphasize on farmers' training in scientific methods for quality seed production, variety identity, maintenance, safe seed storage and value chain aspect.

7.3 Institutional

1. Make responsible and strengthen the National Agricultural Genetic Resource Centre (Gene Bank) for conservation and promotion of agro-biodiversity.
2. Legal recognition to farmers' organizations engaged in diversity farming, through specific legal status.
3. Need to support and promote informal seed systems: seed fairs, networks, local seed banks through encouraged CSB, CBSP, infrastructural development and seed value chain support.
4. Establishment of plant variety protection authority at central and local level to manage efficient registration of plant varieties.
5. Development of Business Development Services (BDS), growth centers and local resource persons through real investment support programs.
6. Establishment of self help groups is crucial as they ensure that the development is sustained. Also important are the close links with government extension agencies, local NGOs and private sectors.

7.4 Environmental

1. Strengthen the capabilities of researchers, extension workers and seed enterprises in hybrid and OPVs seed production and marketing.
2. Rewards and incentive mechanism for local seed conservators, producers and users.
3. Conduct seed mission programs including trainings, education, extension and public awareness campaigns, seed fairs.
4. Easy access to credit with low interest rate and subsidies on seed, fertilizers to small, marginal and resource poor farming communities.
5. Infrastructural development like rural road, irrigation, electrification, processing and storage facilities in the rural areas where seeds are produced need to be developed in order to improve the production and marketing system.
6. Increase access to reliable hybrids and improved varieties in commercial production areas where irrigation and other infrastructural facilities are available.
7. Allocation of DDC/VDC resources for conservation and utilization of local GRs must be mandatory considering GESI approach.
8. Provide the simple machinery, with the appropriate training that can improve the social status and self esteem of women and vulnerable groups so as to earn extra income from value addition.

7.5 Information

1. Use national and local media such as FM radio, newspaper, TV (in local language), seed fair, campaigns etc in every growing season by DoA, SQCC, RSTLs, RAD, DADOs, DLSO, Seed companies and other line agencies in a coordinated way to provide information about seeds and package of practices to the farmers.

2. Use communication media, meetings, workshops, seminars etc for creating awareness and legal bindings about international and national treaties, agreements, policies, and legislation related to IPR, conservation and use of agro-biodiversity to the farming communities.

3. Establish, national, regional and local level networking of seed production, demand, supply and market price.

4. Provide information on varietal suitability, planting season and trainings on package of practices by seed distributing agencies to the target groups.

5. Make an effective central seed information system (website, national seed balance sheet) for real time data sharing at national level.
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Perceptions of Rural Terai Communities on Effects of Climate Change in Human Right to Food Perspective
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Perceptions of Rural Terai Communities on Effects of Climate Change in Human Right to Food Perspective

Abstract

Climate change threats to global food security are growing stronger across the globe as it exerts both short term and long term effects on the food systems and agricultural cycles, the ultimate source of human food. However, there are still insufficient knowledge and understanding on how climate change is putting forth difficulties for progressive realization of human right to food; more concerned with that of vulnerable people and marginalised groups. Now with new decade of 21st century, the terms availability, accessibility, adequacy and market response sound more like official jargons than solutions to practical reality. Literature on climate change is vast but still insufficient, more often non-significant regarding evidence-based references to make firm conclusions and develop schematic programs. This study, as a prelude in this context, concentrates in two Village Development Committee (VDCs) in Banke, a mid-western Terai district of Nepal.

The two villages, Betahny, a flood and water logged VDC, joins Indian border on south while Sonpur, a drought affected VDC, falls back in west mid-land of the district. The objectives were set to explore the effects of climate change on livelihood and food security of the rural communities from the right to food perspective. During the study process different methods were used to reach affected communities, groups and families to acknowledge and record their reactions and visions to face and rescue out of climate hazards. Data were collected from the interactions with a total of 319 households, representing different gender, caste and ethnicity, along with food sufficiency level. Semi-structured questionnaires, focus group discussions, key informant interviews, transect walks and observations were conducted to gather qualitative information. The analysis and inferences, we hope, are interesting and command our attention. Let careful readers judge it. Here, we simply like to thank Ms. Prakriti Kashyap who enthusiastically finished this study during 2011. For full report, plz, visit FIAN Nepal website: www.fiannepal.org -Editors)
1. Overview of Climate Change in Nepal

Nepal emits very little, only 0.025% of global greenhouse gases which is in the top 8 low income countries for emissions. Besides, Nepal is rated as one of the ten most vulnerable developing countries due to its rugged topography, poor physical infrastructure and the low level of development of its social sectors (OECD, 2003). The country regularly faces the problem of increasing temperature, change in rainfall patterns and climate induced natural disasters like floods, forest fire, glacial lake outburst, land slide, etc.

The temperature of Nepal is increasing more rapidly than that of other countries. Between 1977 and 1994, Nepal’s average temperature rose at a rate of 0.03-0.06 Celsius per annum, with a higher rate in the mountains (0.08 degree Celsius) than in lowlands (0.04 degree Celsius) (Shrestha et al. 1999). It shows that Nepal is warming at a significantly higher rate compared to the global average of 0.074 degree Celsius, recorded in the twentieth century (IPCC 2007). It is predicted that the country average mean temperature will increase by 1.2°C and 3°C projected by 2050 and 2100 (OECD, 2003). In addition to an increase in the annual average temperature, extreme variance in temperatures has been observed frequently in recent years.

There are seasonal and spatial variations in rainfall patterns at various geographical locations. The precipitation extremes show an increasing trend to intense precipitation events at most of the stations (Baidya et al. 2008). Inconsistencies in rainfall pattern such as higher intensities of rain and less number of total rainy days are associated with periodic drought and flash floods, causing changes in hydrological cycles and contributing to depletion of water resources. Here are some details on climate induced natural hazards in this country:

Drought: In the period of 36 years, from 1971 to 2007, more than 150 drought events were reported in Nepal affecting more than 330,000 hectares of agriculture land mainly in the Terai and western hills/mountains (NSET, 2009). The evidence of greater climatic variability and increase in temperature over the country suggests that the frequency of winter droughts will increase (NCVST, 2009).

Forest fire: In the period of 36 years, from 1971 to 2007, more than 3880 forest fire events were reported in Nepal leading to 1108 death, 186 missing, and affecting more than 218,278 people (NSET, 2009). During the spring of 2009, forest fire blanketed much of Nepal raging in 634 places and damaging 105,350 hectares of forest land (NCVST, 2009).

Floods and landslides: Across Nepal, each year, floods and landslides cause the loss of 1,000 lives. Based on official disaster statistics, floods and landslides from 1998 to 2002 occurred on average 256 times in one year and affected on average 24,264 families annually. The effects of floods are more severe and frequent, particularly in the Terai (NCVST, 2009).

1.1 Defining Food Security and Right to Food

Before understanding the effects of climate change on food systems, it is necessary to understand the definitions of food security and right to food. The World Food Summit
1996 has defined food security as “the situation when all people, at all times, have physical and economic access to sufficient safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life.” To achieve food security, all of its four components; availability, accessibility, stability and utilization needs to be adequate.

Food security is mainly an analytical tool and not an agenda for policy action, therefore, food discourse has been emerging towards the Right to Food. Nevertheless, there are some overlaps between food security and the right to food. The basic difference is that the right to food is a human right enshrined in the Universal Declaration of Human Rights adopted by the UN General Assembly in 1948, which was later translated into the legally binding Human Rights Covenants. The right to food is most firmly established in the 1966 International Covenant on Economic, Social and Cultural Rights (ICESCR). As of 2008, 158 state parties, including Nepal have ratified it. All state parties to the International Covenant on Economic, Social and Cultural Rights are obliged to implement the right to adequate food. Article 11 of this Covenant states clearly that “the State Parties to the present Covenant recognize the right of everyone to an adequate standard of living (…) including adequate food (…) and (…)the fundamental right of everyone to be free from hunger (…)”. Similarly, General Comment No. 12: The Right to Adequate Food (Art. 11 of the Covenant) by the UN Committee on Economic, Social and Cultural Rights (1999), further interprets the right to adequate food as follows: “The right to adequate food is realized when every man, woman and child, alone or in community with others, has physical and economic access at all times to adequate food or to means for its procurement.” According this most authoritative interpretation of the right to food by the UN committee, the human right to adequate food comprises the dimensions of adequacy, availability, access - physical and economic, and sustainability.

Furthermore the Human Rights Principles for states to adhere to include:

Equality and Non-discrimination: All individuals are equal as human beings and by virtue of the inherent dignity of each human person. No one, therefore, should suffer discrimination on the basis of race, colour, ethnicity, gender, age, language, sexual orientation, religion, political or other opinion, national, social or geographical origin, disability, property, birth or other status as established by human rights standards.

Participation and Inclusion: All people have the right to participate in and access information relating to the decision-making processes that affect their lives and well-being. Rights-based approaches require a high degree of participation by communities, civil society, minorities, women, young people, indigenous peoples and other identified groups.

Accountability and Rule of Law: States and other duty-bearers are answerable for the observance of human rights. In this regard, they have to comply with the legal norms and standards enshrined in international human rights instruments. Where they fail to do so, aggrieved rights-holders are entitled to institute proceedings for appropriate redress before a competent court or other adjudicator in accordance with the rules and procedures provided by law. Individuals, the media, civil society and the international community play important roles in holding governments accountable for their obligation to uphold human rights.
Paragraph 15 of the General Comment 12 establishes that: “The right to adequate food, like any other human right, imposes three types or levels of obligations on States parties: the obligations to respect, to protect and to fulfil. The obligation to fulfil incorporates both an obligation to facilitate and an obligation to provide. The obligation to fulfil (facilitate) means the State must pro-actively engage in activities intended to strengthen people's access to and utilization of resources and means to ensure their livelihood, including food security. Finally, whenever an individual or group is unable, for reasons beyond their control, to enjoy the right to adequate food by the means at their disposal, States have the obligation to fulfil (provide) that right directly. This obligation also applies for persons who are victims of natural or other disasters.”

Under the obligation to fulfil states have to adopt measures to facilitate that people feed themselves, ensure their access to productive resources, and if they are not able to do so, provide them with food. Furthermore, according to the Voluntary Guidelines on the Right to Adequate Food in the Context of National Food Security, adopted by the FAO (Guideline No. 8.13.), “States should consider specific national policies, legal instruments and supporting mechanisms to protect ecological sustainability and the carrying capacity of ecosystems to ensure the possibility for increased, sustainable food production for present and future generations, prevent water pollution, protect the fertility of the soil, and promote the sustainable management of fisheries and forestry.”

According to Guideline No. 16.7 “States shall put in place adequate and functioning mechanisms of early warning to prevent or mitigate the effects of natural or human-made disasters.”

In addition, a systematic interpretation of the right to adequate food, especially on the obligation to fulfil, which is in line with the principles of human dignity and food sovereignty and consider the legal content elements of sustainable access and cultural adequacy, implies that in the short, mid and long term, states shall adopt all necessary measures to ensure that people have access to resources which allow them to feed themselves in dignity. These kinds of measures can include for example the resettlement on productive lands, subsidies for food production, provision of access to adequate seeds, irrigation inter alia. All these measures shall be in line with the human rights principles of transparency, participation, non discrimination, indivisibility and the rule of law.

As industrialized countries bear the historical responsibility of causing the climate change crisis, climate change has also an extraterritorial dimension. The concept of extraterritorial obligations implies that States hold certain human rights obligations which extend beyond the State's territory. This means that more than the state of Nepal it is the community of states has an obligation to mitigate climate change induced negative effects on the right to food.

1.2 Climate change, food security and the right to food nexus

There are solid evidences from scientific data, models and people's perceptions that climate change on our planet is factual and has many important consequences on
human welfare. Among others, due to the effect of a changing climate, the human right to adequate food, especially of the poor and vulnerable people in developing countries, is at high risk, a report published by Heinrich-Böll-Stiftung Foundation (2009) argues. This chapter briefly attempts to elaborate the theoretical underpinnings linking climate change, food security and the right to food.

According to UNFCCC (2007), climate change is "a change of climate that is attributed directly or indirectly to human activity that alters the composition of the global atmosphere and that is in addition to natural climate variability". Whereas, IPCC (2001) defines climate change as "a change in the state of the climate that can be identified (e.g. using statistical tests) by changes in the mean and/or the variability of its properties and that persists for an extended period, typically decades or longer. It refers to any change in climate over time, whether due to natural variability or as a result of human activity". According to these definitions, while there are many natural causes of climate change; extra warming, we are currently facing, is anthropogenic. As portrayed in figure 1, anthropogenic factors such as deforestation, industries, agriculture, land use changes and the burning of fossil fuels, are contributing to the emission of GHGs: Carbon dioxide (CO$_2$), Ammonium (NH$_4$), Nitrous Oxide (N$_2$O) and Chlorofluorocarbon (CFCs) into the atmosphere. These GHGs allow sunlight/heat to enter into the earth but entrap the heat as it radiates back into space. This effect is known as green house effect.

As a result of the increased concentration of GHGs in the atmosphere, the earth temperature raises leading to global warming which is responsible to exaggerate the climatic characters and process. Temperature rise, lower and/or erratic rainfall, snow melting, sea level rise and associated natural fears are key features of current climate changes. Available scientific data shows that average global air temperature rose by 0.74 ± 0.18°C during 20th century (IPCC 2007) and scientists estimate that it could increase as much as 6.4°C on an average during the 21st century (Wigley 1999, IPCC 2007 cited in Chaudhary and Aryal, 2009). More rain in terms of amount and intensity is experienced in higher altitude regions during the summer (Shrestha et al. 2000), where frequencies of heavy precipitation events have already increased (ibid).

**Fig 1: Schematic diagram linking climate change, food security and right to food**

Similar climatic scenarios for South Asia are projected by IPCC. These studies show that the temperature increases by close to 4°C in parts of Afghanistan, Nepal and India which could have larger effects on local hydrologic regimes given the mountainous
environment. IPCC (2007) projects that there will be a general increase in the intensity of heavy rainfall events in the future and an overall decrease by up to 15 days in the annual number of rainy days over a large part of South Asia (NAP, 2010).

Nepal is no exception to the effects of climate change. Temperature observations in Nepal from 1977 to 1994 showed a general warming trend and increased average annual temperature by 0.04-0.06°C (GoN, NAPA 2010; Shrestha et. al., 1999). Annual precipitation data shows a general decline in pre-monsoon precipitation in far- and mid-western Nepal. In contrast, there is a general trend of increasing pre-monsoon precipitation in the rest of the country. Post-monsoon precipitation shows increasing trends in most of the mid-western region. The winter precipitation trends show overall increasing trends except the northern part of mid-western, western and eastern Nepal. Himalayan glacier melt, retreat and glacial lake outburst floods (GLOF) have been well documented (GoN, NAPA 2010).

Climate change projection data shows the mean annual temperature to increase by an average of 1.2°C by 2030, 1.7°C by 2050 and 3°C by 2100 compared to a pre-2000 baseline. The projections show higher temperature increments during winter as compared to the monsoon seasons. Likewise, precipitation projections show no change in western and up to 5-10% increase in eastern Nepal during winter. During the summer months, precipitations are projected to increase for the whole country in the range of 15 to 20%. In terms of spatial distribution, this study projects an increase in monsoon rainfall in eastern and central Nepal as compared to western Nepal. Further, the projections indicate an increase in monsoon and post-monsoon rainfall as well as an increase in the intensity of rainfall, and a decrease in winter precipitation. The observations and projections indicate that the key effects are likely to include: significant warming, particularly at higher elevations, leading to reductions in snow and ice coverage; increased frequency of extreme events, including floods and droughts; and, overall increase in precipitation during the wet season and a decrease in the mid-hills.

IPCC (2007) concludes a significant impact on global agriculture and food price by 2050 due to the effects of climate change. More intense droughts and floods will trigger production crises, which together with higher food prices will increase the risk of hunger and malnutrition (Barnet, 2007). FAO (2007) & Jianchu et.al, (2007) reported that as climatic patterns change, so also do the spatial distribution of agro-ecological zones, habitats, distribution patterns of plant diseases and pests which can have significant impacts on agriculture and food production. FAO (2005) has predicted that in developing countries, 11% of arable land would be affected by climate change, including a reduction of cereal production in up to 65 countries, about 16 percent of agricultural Gross Domestic Product (GDP). According to FAO (2007) agriculture, forestry, and fisheries are highly sensitive to climate change and climate change is very likely to have a serious effect on their productive functions.

Nepal, a mountainous country with diverse ecological set-up, is one of the most vulnerable countries to climate change. Several studies confirm that Nepal is among the most highly vulnerable countries to climate change for two major reasons: Firstly, its mountain regions have already exhibited signs of serious effects through alarmingly high rates of temperature increases. Secondly, as a least developed mountainous
country, the majority of the population of Nepal lacks capacity to adapt to climate change. Drying added with a trend of warming will impair food security and affect the availability of water resources. This will increase the vulnerability of marginalized and poor people in both rural and urban areas. Further increases in the intensity of rains will cause increased flooding and landslide risks threatening human security, water supplies, and infrastructure.

Climate change for agriculture means that future farming and food systems will face substantially modified environments as they struggle to meet the demands of a changing population confounded by a range of climate stresses for example higher temperatures, changing rainfall patterns and rising sea levels (CGIAR Climate Change Program, 2011). These climatic stresses under meager coping or adaptive capacity will be responsible for crop and livestock failure, biodiversity decline and loss of livelihood assets.

The livelihoods of peasant communities are likely to suffer most as they are the most exposed to extreme climatic events such as droughts and floods and their cumulative effects. At the same time these same people have very limited capacity to respond to these cascading effects. Such effects are already experienced in many LDCs where 1.02 billion people (one sixth of global population) are hungry and malnourished (FAO, 2010). Farmers, rural workers, and other people in the developing countries who are already vulnerable and experiencing food insecurity are likely to be the first and worst affected by the negative impact of climate change (Heinrich Böll Foundation, 2009). The effects of climate change will fall disproportionately e.g. poor producers are generally exposed to relatively high risks of adverse effects from climate change. In addition, poverty and other factors create conditions of low adaptive capacity in most developing countries (IPCC, 2001). Three-quarters of more than a billion people, who are suffering from severe hunger worldwide, are living in rural areas and depend directly on agriculture for their food (FAO, 2010). Majority of these people are poor and already vulnerable to food security with very low level of adaptive capacity and will be affected mostly by climate change effects on agriculture.

1.3 Situation of Food Insecurity and Right to Food in Nepal

The UN Human Development Index of 2010 classifies Nepal in 138th position. A total of 25.2% poor (approximately 6,900,000) in Nepal are below poverty line; they have to live with inadequate food, since they cannot produce, purchase and consume it adequately (Tiwari 2010). Nepal occupies the 16th position among 31 countries that are reeling from a food deficit with 40 districts facing a food shortage1. A Sub-regional Hunger Index for Nepal by WFP 2009 shows that nearly 7 million out of about 27 million people in Nepal go to bed hungry every day. Almost 40% of children below the age of five suffer from malnourishment. The most important forms of under nutrition include protein, energy malnutrition, iron deficiency anaemia, vitamin ‘A’ deficiency and iodine deficiency. Infant and under-five mortality rates are still high, at 41 and 50 per 1000 live births respectively.

1 Ekantipur.com/31-03-2010
More importantly, food insecurity in Nepal has social and spatial dimension. People living in marginal geographical regions (far western) and in lower social position (dalits, janajaties, women, poor, and the landless) are considerably more food insecure than other social groups (Adhikari, 2010). In these regards, unequal distribution of household assets i.e. land, labour, and inputs and differential access and control over common property resources i.e. forest, water, infrastructure (Upreti, 2010) are the major hindrances to achieve the food needs of the poor people. Hunger, poverty and violations of economic, social and cultural rights (including the right to food) manifesting in hunger and poverty in Nepal are mainly because of systemic exclusion to access and control over productive resources. Though in Nepal the Terai region is a food surplus region, more than one-third of women and half of all children under the age of five are anaemic (Bishwakarma 2009).

1.4 Effects of Climate Change on Food Situation in Nepal

The agricultural system both attributes to climate change through the releases of GHG such as carbon dioxide, methane and nitrous oxide, and is at the same time one of the sectors most affected by the effects of climatic changes. One third of all carbon dioxide emissions come from changes in land use (forest clearing, shifting cultivation and intensification of agriculture). Approximately two thirds of methane and most of nitrous oxide emissions originate from agriculture (Kotschi and Müller-Sämann 2004).

Precipitation, one of the major factors that affect the agricultural system as success of farming or crop harvest, is dependent on the timely and adequate arrival of the rainfall. Increasing variability in rainfall patterns, both monsoon (June-September) and winter rain (December-February) such as a delay in the onset of the monsoon, prolonged breaks in rainfall causing periodic droughts, lack of winter rain, retreat of glaciers with contracted flow of water during drier seasons or intense rainfall causing natural hazards like landslides, flash floods during rainy seasons have subsequent implications resulting in a shift in agriculture patterns. This leads to crop failure, often resulting famine and affecting livelihoods in Nepal.

Similarly, the change in weather patterns, drought and water scarcity, increased intensity and frequency of water induced hazards (floods, landslides) have negative impacts on food production (Chaudhary and Aryal 2009, Gurung and Bhandari 2009). Also new diseases and pests in agriculture and spreading of tropical diseases like malaria, dengue, loss of biodiversity and natural resources may create livelihood and food crisis etc. (ICIMOD, CARE 2009, WWF 2005). A study by the World Food Programme (WFP) showed that extreme weather patterns including floods and droughts between 2006-2009 have significantly affected food production in Nepal (WFP, 2009) resulting in food insecurity. Similarly, rice production was significantly impacted in 2009 due to late start of monsoon (the onset of monsoon starts early June) as many seedlings were lost due to the delay in rainfall, and a shorter growing period did not give a viable yield (Subel 2009). Early monsoon and rain deficit in Eastern Terai faced in the year 2005/06 reduced the crop production by 12.5% on the national basis, Nearly 10% of land fit for agriculture was left fallow due to rain deficit whereas mid western Terai faced heavy rain with floods, which reduced production by 30% in the year (Regmi, 2007).
With inadequate capacity to cope with such extreme effects, the larger rural population is left extremely vulnerable to climate change. Nepal thus needs to implement effective and comprehensive adaptation programs for both longer and short term implications with special attention towards agriculture and natural resources productivity. The critical questions that need to be raised are about sustainable land and water use, ecological destruction, biodiversity and safe and nutritious food production in relation to effects of climate change. This requires developing and testing stronger methodological relation between the right to food and climate change.

1.5 National Initiatives to Adapt and Mitigate Climate Change

Nepal has initiated different levels of programme and policy interventions to combat negative effects of climate change. Following are some of them:

Climate Change Policy 2011, the main policy, aims to do so by mitigating and adapting to the adverse effects of climate change and adopting a low-carbon emissions socio-economic development path. One of the targets of this policy is to initiate community-based local adaptation actions as mentioned in the NAPA through managing financial resources by 2011.

Also, under the United Nations Framework Convention on Climate Change (UNFCCC), Nepal has prepared its National Adaptation Programme of Action (NAPA) to communicate the urgent and immediate adaptation which is the need of the country. It includes six thematic working groups (TWG) led by each line ministry; Agriculture and Food Security, Climate-induced Disaster, Urban settlement and Infrastructure, Public Health, Forests and Biodiversity and Water Resources and Energy, with gender and livelihoods and governance as the two cross-cutting themes. Of the 9 integrated project components, Component 1 deals about ‘Promoting Community-based Adaptation through Integrated Management of Agriculture, Water, Forest and Biodiversity Sector’ and through this aims to enhance food sufficiency for poor, marginalized, and disadvantaged farmers by using climate resilient options.

Similarly, Nepal is in the process of finalizing the Local Adaptation Programme of Action (LAPA). This approach will also ensure that climate adaptation is integrated into local development processes through local government (DDC/VDC/Municipality and local level line agencies - agriculture, forestry, water, women, health, insurance) and community based organizations (NGOs/CBOs, clubs, local user groups, cooperatives) and is well linked to other development programmes such as the Local Governance Community Development Programme (LGCDP).

In addition, Nepal has potentialities to receive a substantial amount of money from both formal and informal market through the process of Reducing the Emission from Deforestation and Degradation (REDD) of forest and other mechanisms. It is hoped that potentialities of REDD after 2012 (upon completion of the first commitment period of Kyoto protocol i.e. 2008 to 2012) will represent (most likely) the route for bringing forests of Nepal into official climate change mitigation measure (Pokharel and Byrne, 2009).
It is against this backdrop that FIAN Nepal has, therefore, initiated the pilot study on People’s perceptions to develop the understanding between climate change and hunger and right to food situation from within Local communities as a part of strategic intervention.

2. Discussions and Analyses

2.1 Local Knowledge on Climate Change

Understanding local knowledge and perception was the most important research objective. Surveys, FGDs and observations were conducted to document the perception of local people about climate change, its effects and adaptation strategies. A variety of responses were documented. Their perceptions ranged from temperature and precipitation patterns, biological change, climate induced hazards and their effects on the livelihood. One of the remarkable learning from the survey was that about 90% of the respondents were unaware about the climate change. Only 10% of the respondents had learned about climate change mainly through radio, television and newspapers. Post-survey FGDs was instrumental in gathering the information on the various aspects of climate change.

In the FGDs it was shared that there is change in rainfall pattern including late and extreme precipitation, increasing temperature including extreme heat natural and other hazards including insects and pests, new diseases, droughts, floods, cold waves, and disease epidemics. But many of the participants of the FGD were not fully sure that whether these changes are associated with climate change or other reasons. People's perception and understanding on the climate change analyzed through survey and FGD are summarized below.

2.1.1 Perception About Changes in Temperature:

Local community’s knowledge tells that there is an increase in temperature which they have been experiencing for the last 25 years. The household survey revealed that 97.5% of the local people interviewed perceived that the summer temperature has increased. Similarly, 76.6% noticed a decrease in winter temperature. The period of hot months is increasing while the cold months are decreasing. Before, there was cold season from November to February. Now it starts in January and finishes by February. In addition to an increase in the annual average, extreme temperatures have been observed in recent years. Both days and nights are becoming warmer.

An analysis of 30 year (1980-2009), meteorological data of monthly distribution of temperature shows a temperature rise during the months of March-May with increasing maximum temperature. Minimum temperature gradually decreases from December till January, with January as the lowest mean monthly minimum value of 7.8 °C. The highest mean maximum temperature records a range of 30.2 to 31.6 °C. The trend shows a slight increase of 0.008 °C/yr in the mean maximum temperature. The minimum temperature in the district went up to 17.3°C in January which is below the average value of 18.0°C.
The mean annual temperature ranges between 23.9 and 24.9°C, with an average of 24.4°C. The annual trend depicts an increase of 0.002 °C/yr (see Annex-3). This showed that people's perception on temperature changes is in line with the meteorological data in most of the aspects.

2.1.2 Changes in Precipitation

97% percent of the household survey respondents reported that the total amount of rainfall (both monsoon and winter rain) has declined. In terms of precipitation farmers unanimously reported the irregularities and unpredictability of rainfall. Majority of respondents reported the delay in both monsoon and winter rain as compared to past years. There is also extreme precipitation during August/September, crop harvesting time. Earlier there had been regular fog and mist during November/December necessary for wheat cultivation. But now there is very little occurrence of such fog and mists.

An analysis of 30 years (1980-2009) meteorological data of precipitation also shows a decreasing trend in annual, monsoon and winter rainfall at the rate of 3.2, 3.6 and 1.05 mm/year respectively. The trend shows a large fluctuation along the years, showing an erratic pattern. There are 14 years with deficit rainfall compared to the annual average of 1413 mm. In recent 10 years (2000-2009), the trend has been a regular decrease except for the year 2001, 2003 and 2007. Of the last decade (2000-2009), the latter five-year period saw a deficit in monsoon rain, with an exceptionally high monsoon rainfall in 2007. Since 2000-2009, 6 years received less than average winter rainfall, with a continuous declining trend except for only 2 years (2005 and 2007) with a slightest more than average value.

2.1.3 Changes in Climate Induced Hazards

Local people experienced that the severity of flood, drought, pest and diseases, cold and hot waves are increasing in recent years. The study finds that following are the hazards ranked according to the responses from FGD and HH questionnaire survey. The ranking was based on the severity, intensity and area coverage, and difficulties in handling the problem.

Table 1: Major Climatic Hazard in the Study Area

<table>
<thead>
<tr>
<th>Hazards</th>
<th>Rank [I (High) to V (Low) effects]</th>
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<tbody>
<tr>
<td></td>
<td>I</td>
</tr>
<tr>
<td>Drought</td>
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<td>Flood</td>
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<tr>
<td>Pest and Disease in crops</td>
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<tr>
<td>Diseases in Human</td>
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<td>Fire Hazards</td>
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<td>Windstorm and cold wave</td>
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Flood and drought charted top on the list of climatic hazards in the study area. From household survey, 54% households reported the increase in flood incidents in recent years. Periodic drought has been reported to increase every year, mostly in winter as responded by 89% of the people interviewed.
Betahani VDC is one of the most affected among 9 flood affected VDCs of Banke. Flood in the region is because of the manmade barriers (Laxmanpur Dam, and the Kalkalwa afflux bund) that impedes natural flow of Rapti River and associated tributaries. Events of flash flood have also increased due to intense rainfall in upstream Chure/Siwalik hill regions than rainfall spreading throughout monsoon. Flood occurring time has also become unpredictable, with flood coming in unexpected months of the year. Focus group discussion revealed that in the year 2055/056 B.S. (1998/99 A.D), flood occurred in Betahani in the month of Kartik (Oct/Nov), paddy harvesting month, destroying the paddy ready for harvest. Similarly, untimely flood was observed in the year 2065 B.S. (2008 A.D). The flood in 2007 was also remarkable as Nepalgunj Municipality was inundated for days, and waterborne diseases spread in the area. In the case of Sonpur VDC, though the VDC is drought prone, ‘too much’ water during the intense rainfall in the monsoon season caused flood and erosion. The Maan River in Wards 8 and 9 are partially the reasons behind this.

Drought was highlighted as one of the top most climatic hazards in both the VDCs. Sonpur residents shared that one of the severe drought incidents occurred in the year 2036 B.S. (1979 A.D) when the VDC had food shortage and had to import food from neighbouring Bardiya district. GoN had exempted land revenue tax for that year. Similarly, the major drought occurred in the year 2039/2040 B.S (1983 AD) and in both VDCs in 2045 B.S. In the years 2061 to 2065 (A.D. 2001-2006), the locals are observing winter drought. Drought is associated with the erratic rainfall pattern in recent years, with intense rainfall over a period and a dry spell during the rest of the period. Winter drought has been severe in recent years.

Heavy infestation of pest and disease in crops has been identified as another major hazard in the region. Due to the change in climate the incidences of pest and disease have been increasing in recent years. However, this is also due to the heavy use of chemical fertiliser, hybrid and improved seeds and other agricultural inputs. The respondents during the FGDs revealed that earlier, regular monsoon rain used to washout pest and insects, while in recent yrs the dryness and hot temperature rather makes them flourish.

Similarly, cold wave, extreme fog situation (sheet lahar or paala in local term) is also considered as hazards for crops, particularly for vegetables and human health. The fog is also unpredictable. Normally fog occurs in January but local community also experienced that this occurs during August damaging vegetables, particularly tomatoes.

Simultaneously, increasing diseases of humans, with high temperature favouring disease vectors such as flies and mosquitoes, and other weather associated diseases were also identified among top five hazards in the area.

While incidences of windstorm and fire incidents were reported to be decreasing in recent years, these are still unavoidable hazards in the area. The locals have been careful about fire hazard and are following fire safety practices to decrease fire episodes. Replacement of thatched roofs with metallic (tin) and brick roofs has lowered down the damage from fire incidents.
2.2 Effects of Climate Change on the Right to Food

The right to food embraces three important substantive dimensions adequacy, availability and accessibility of food (FAO, 2006). The study shows that there are climate change related direct or indirect effects on all of the dimensions. Climate change has also implications on the quantity, nutritional quality, safety and cultural dimensions of right to food.

2.2.1 Effect on the Adequacy Dimensions of Right to Food

Food Self Sufficiency to Dependency

It is found that the food self sufficiency status of the local community has changed to the food dependency due to the incidences of climate change in the study sites. Change in rainfall pattern, increase in drought, and incidences of climate change induced natural disaster particularly floods have had negative effects on the production of the food of farmer for the last 25 years. Sonpur residents shared that one of the severe drought incident occurred in the year 2036 B.S. (1979 A.D) when the VDC had food shortage and had to import food from neighbouring Bardiya district.

It is found that there is 15 to 20 days of delay in rainfall. Normally rice cultivation started by June end. It is now generally cultivated in end of July and in the 2nd week of August. Also intensive rain fall is being experienced during the rice harvesting periods. To cope with the negative effects of drought and delayed rain fall, the resource strong people have been using ground water through electric deep boring. However, for the marginalized groups of people it is very costly to use such irrigation system. Therefore, food production of these groups of farmers has reduced, compared to the richer farmers. In general, there is 50% reduction of the food of the marginalized groups while only 10% reduction in the production of the resource stronger groups. This is mainly due to increased and excessive use of ground water, chemical fertilizer and hybrid/ improved seeds. The production of maize and rice has reduced to 30% of the normal production. In one such instance the winter drought led to 50% of wheat farming land turning into barren land. The winter drought further reduced sugarcane cultivation of some farmers in Betahani. This suggests that in the near future, small farmers with rain-fed farming are at increasing risk to secure livelihood and food, solely through agriculture. Following was reported that even those who had managed production of seedling through the irrigation using pumping set, were unable to save these seedlings. The seedling that was purchased from outside wasn't suited in local condition. Early ripe of rice due to late cultivation of paddy caused 50% less production of paddy in most parts of the area. There are evidences that from last 6 years there was rainfall in May but not rainfall during the monsoon period. Also, there was low amount of rain than before. There was regular rain mist for 10-15 days. Drying of crops/seeds and fruits due to drought, i.e., increased temperature, shortening the growing period of wheat causing shrunken grain size and decreased yield. Paddy plantation occurred in 25% of the area only. Hail storm occurs lesser. Mists generally occurred in December and January however this no longer occurs and has reduced the wheat production. The April rainfall delayed by two weeks and has affected the maize cultivation by reducing the production.
In Sonpur VDC the incidents of floods in ward no 2 and drought in ward 6 and 7 have increased the duration of chronic food insecurity of *dalits* (Harijan) and Muslim communities. *Dalit* communities in the study sites face more than 9 months of food insecurity. From February to March and July to August are agriculturally lean season and also referred to as the "hunger season". Crop loss and late growing season, has led to extended period of hunger – the findings show that 90% of the marginal communities consume meal only once a day during the lean season as food is scarce.

More importantly, there is changing pattern of local consumption of rice, milk, pulses, fruits, vegetable, etc. due to the climatic changes at intra and inter household level. Grass production in the study sites has fallen off due to ‘drought’ conditions and loss of forest by floods. There was some grazing land in all villages where was sufficient local grass in pasture/grazing land before. Due to conversion of pasture land to agricultural land and drought some local grass species like *Kalmude* disappeared and *Palethi* grass is limited. Also, there is no forest in Sonpur VDC and only a patch remains in Betahani VDC. Many households in both VDCs have switched to stall-feeding. As a result, they reduced the number of livestock (many by 50%). To adapt to this situation, the rich people started farming improved varieties of *Jarsi* cows and *Murra* buffalos that produce up to five times more milk than local varieties. It was also promoted by the District Livestock Support Office (DLSO). This adaptation also came with a change in mindset; prior, male cattle stocks were preferred for cultivation purpose, now female cattle are preferred for milk production. However, this is not suitable to the poor people because it needs improved varieties of grasses which need more land to produce. Also, it increases competition with food production. For the poor people the consumption of milk drastically reduced because of reduction in the number of livestock. Now they give priority to sell milk in the local market at least one time a day. They also do not make curd and ghee. The study found that there is 50% reduction in the consumption of milk due to the reduction in the number of livestock and use of milk for market purpose.

The consumption patterns of pulses have also been reduced. Mustard, gram, *musuro*, *arahar* and pea cultivation in study area are in endangered due to the change in rain fall patterns as well as excessive use of chemical fertilizer. These pulses require fogs to develop, however due to absence of fogs and mists in the last 10 years these pulses are no longer cultivated in similar amount as earlier. The locals are found cooking and consuming pulses only once a day. The richer people consume instead vegetables while pulses are considered food of the poorer people, eating it twice a day, however cooked in the morning. This does effect on food safety and thus health of the poorer groups of people.

More importantly, the loss of forest from flood and due to settlement programme of Government has affected the consumption patterns of fruits and vegetable. In Sonpur VDC forest exists nearby the river. Some of the local people traditionally depended on forest based fruits such as *Jamun, Kusum, Bayar, Farauuda, Teju, Sitaha* which were available throughout the year. However due to forest destruction these fruits are unavailable. Also, there were some orchards of mangoes which were the main source of mango fruits for local communities. Due to the use of mango trees in brick kilns, such orchards have been destructed; as a result mango trees are nearly extinct from the area. The forest has been a regular source of vegetables for the marginalized people who collected *Kheksi, Pedar, Karaili, Gava and mushroom*, however unavailable these days.
The green leafy vegetables of mustard no longer are available in the agricultural land of farmers. The richer groups of people continue to consume vegetables by purchasing it from the nearby market.

There is evidence that extreme rainfall and floods have affected the quality of food grain. In Sonpur the harvested paddy was flooded by extreme late precipitation in September 2010. Later, farmers used this grain which was very low in quality. It has also different taste than other grain. Similarly, in Betahani flood damaged the quality grains that were stored in traditional mud store.

Disproportionate Use of Ground Water

Increasing winter drought and extended dry spells in monsoon have caused over use of ground water. People shared that the ground water level has gone deep down, and they have to dig further down to get water. According to local residents of Sonpur VDC, during winter, the water is available at 65-150 ft while in rainy season; it is available at 25-26 ft. Though people in Betahani VDC are also experiencing the decline in ground water level, it is comparatively less serious level than in Sonpur. Because Betahani lies in the natural river-bed, the ground water gets more seepage and recharging than other villages of the VDCs as the Maan Khola - river flows through and recharges the aquifer. There is no regulation on extraction and use of ground water. The poor people share their worry that, if the drought is to spread at this rate, and ground water continues to decline with excessive use by the rich, they will not even have water to drink, water for irrigation is a farfetched dream.

However, according to officials of District Ground Water Resources Development Office, there has been no decline in deep ground water aquifers but a periodic decline at shallow aquifer zone, which is because of the less proportionate monsoon and winter rainfall, which gives no time for the shallow aquifer to recharge during dry spells. In case of deep aquifer ground water is still very much under exploited and under used, and hence has a huge potential for usage in irrigation through deep tube well projects. Until now, the land area irrigated by ground water is 3227 ha in the Banke district, but the potential is of 45,832 ha. For the respondents, a significant effect of a changing climate is reduced availability of water, either for drinking or irrigation purposes. Drying up of both surface and ground water resources was observed by the local people. According to 93% of the respondents, the surface water is decreasing and flow decreases in streams and rivers in summer. Similarly, 73% respondents thought ground water level is also decreasing. 87% respondents said there is decrease in moisture in the air and winter dew as well.

Malnutrition and Health

The food should be safe for human beings to eat and free from adverse substances. This incorporates an element of consumer protection (food processing and food preparation process). The findings show that there is decrease of malnutrition among children and pregnant women due to health campaign about nutrition, vitamin supply, and household visit to aware about balance diet from health post and NGOs. Also, VDC
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Expend 10% of its total budget in health sectors which is very beneficial for decreasing malnutrition. However, it is found that the vegetables and other food products that are available in the market are not safe. As pesticides and chemical fertilizers are excessively used to produce food, it is not free from unwanted substances. People perceive that within two days such products are spoiled and attribute the same to the use of chemicals. They perceive that after production of improved varieties of crops, new types of health problems are into existence. People are experiencing that they had utilized and digested everything that they used to eat some years ago but it is very difficult nowadays. As a result, new food and temperature based diseases are emerging in the sites. The incidences of typhoid, fever, diarrhea, hypertension, knee problem, asthma, skin disease, stomach disease, gastric have tremendously increased. Increase in temperature is favouring disease vectors such as mosquitoes and flies. Cases of malaria have also increased up in the area as responded by 92% of the people. Similarly, people said that there has been an increased in Encephalitis. When asked about effects on health due to changing climate people said the frequency of cold cough, dengue, jaundice, pneumonia, skin and eye infection are reported to be high in the area in recent years. The health post confirms that now the peak hour of hospital increased, earlier it was during July/August, while it has started as early as in June, due to increase in temperature. However, there is limited availability of medicines in the health post to meet the needs of the communities while untimely supply of medicines hinders timely treatment of people.

At a time, climate induced hazards such as flood incidents are also affecting human health besides loss of lives and properties. Contamination of water during flooding increased the risk of water borne diseases. Common water borne diseases are: diarrhea, dysentery and cholera. Nearly 98% respondents said that there has been an increase in diarrhea incidents in recent years. One of the massive and recent diarrhea-cholera epidemics broke out in Banke district after the floods on 28 July 2010 (Shrawan 12, 2067 B.S.). Nepalgunj Municipality and neighbouring VDCs were water logged for days from the heavy rainfall. The leakage of pipelines distributed by the National Water Supply Corporation triggered diarrheal spreading. According to records from the District Public Health Office, during this epidemic, 8 people lost their lives and more than 1350 people received treatment in different hospitals.

Cultural Dimension on Climate Change Effects

The food should be acceptable within a given culture. The study found that there are disproportionate effects of climate change on madhesh and hill origin communities. The consumption of vegetable and meat is increasing in quality and quantity in hilly rather than madhesh community in recent days. In settlements of madhesh population space for kitchen garden is limited and rely on buying vegetables, while the hill people that have migrated to Terai areas, generally maintain kitchen gardens and produce vegetables for own consumption.

Drought and deforestation has led to reduced number of livestock as fodder and pasture land for grazing is limited as such the effect is on reduced consumption of milk among the madhesh community, who largely are vegetarians.
Gender Dimensions on the Adequacy of Right to Food

Decrease in water resources has direct relations to gender. Heavy use of ground water for irrigation purpose and scarcity of water in general has dried up the tube wells. It is evident in one village of Sonpur that of the 250 tube-wells among 400 households, during March/April only half of tube-wells contain sufficient water for domestic consumption. The women respondents shared that decreasing ground water level in dry season led them to exert more pressure in pumping even a bucketful of drinking water, giving blisters on their palms and adding up to their workload. They further need to wait longer in line and earlier to fetch water, before it sinks due to temperature rise.

Loss of lives in flood as women and children cannot swim to safer places is considered as added burden. Difficulties in accessing toilets and mobility during flood were another practical difficulty shared by women. Mothers need to take care of cooking meals and providing clean drinking water to families, and doing so in village inundated for days is yet another challenge for women. Children health get affected and they cannot commute to schools is an indirect effects reported in the discussion.

Deforestation has negative effects on cooking and health status of women. Almost all of the houses in Sonpur and around 75% in Betahani use cow dung as fuel for cooking. Preparing cow dung is the task of women. Due to scarcity of fuel-wood and reduction of number of cattle, the workload of women severely increased as there is limited availability of dung.

Some women particularly from Hindu community articulate that they remain hungry during food scarce period (August, February and March) due to allocation practices in households. There is a practice among such households that women only eat at last after fulfilling appetite of other family members. In such period either they remain hungry or eat what is available within the home. This practice is not occurring in Muslim community where all members of the house eat at a time.

2.2.2 Effects on the Availability of Food

The availability dimension includes sustainable supply of adequate food through production, market and food aid.

Production Resources: Land, Forest, Fish, Livestock, Agricultural Inputs

Climate change has negative effects on the productivity and production of agriculture, forest, livestock and fishery based foods. Out of 319 respondents a total of 302 respondents from household survey replied that their principal source of livelihood is based on natural resources and farming/agriculture.

Climate change has increased natural resource scarcity for local communities. Flood in particular has been damaging the agricultural land of the communities (Case-1). The floods damaged, about 200 hectare in Sonpur and around 700 hectare of agricultural
land in Betahani VDC. In Holiya village of Betahani VDC, it converted 100 hectares of agricultural land to sand and river. In Bethani VDC the cultivable land due to flood is turning into desert as sand and gravel sediments as Chure region is deposited in flat lands of the district.

It has reduced the availability of water for domestic consumption, irrigation and livestock. Formerly there was at least one pond in each village of both the VDCs. The livestock drank water from these ponds while agricultural land was irrigated. Some of the ponds have dried up (Case-2) and during summer the ponds are dry. These ponds partly used to be leased out for fish farming too. At present approximate 50% of the study populations have access to irrigation facilities. Some are irrigating their land using tube wells at private expenses. Due to water bodies drying up in the summer period these private tube wells are the major source for irrigation.

Farmers reiterate their experiences on how the same tube well they have would irrigate the same piece of land in minimal time than as compared to now, where irrigating the same land using the same tube well would take double the time. The water pump gets dried up after drawing out water for 8 hours while formerly it pumped continuously for 24 hours. This has increased the cost of irrigation - to set up expensive deep tube wells and for diesel and electricity. Some respondents experienced that their shallow tube wells contains far less water. This brings to digging deeper tube wells, but possible for those who can afford while others continue to rely on rainfall or rent tube well for irrigating their fields.

The locals are observing that not only the ground water, but also the surface water is drying up at a faster rate. Small streams and tributaries, roadside ponds, and wells are drying up or at least the water level and flow is declining. Drying up of surface water is also causing difficulties for livestock to access water from those sources.

The destruction of forest in both VDCs from floods is evident. It has reduced the availability of forest products. Due to the conversion of forest into settlement by migrated hilly people in Sonpur VDC and excessive exploitation of high valued timber tree species such as Sal (Sorea robusta), Karma (Adina cardifolia), Khayar (Acasia catchu) useful for constructing house and making furniture, many of these species are no longer available in the area. There is also evidence of scarcity of fruits which were found in May/June (mango, jamun, kusum), and in December to January (amla and amaro). People used to collect and sell the fruits of Jamun (Syzigium cumini), harro (Termenalia bellarica), barro (Terminalia chebula), amala (Phyllanthum emblica), marvelous, bayar (berry), and boiled gurjo, kurilo, gujargano, sarpagandha. These species now have completely disappeared.

The local people perceive that the ‘scarcity’ in quality and quantity of non-timber forest products (NTFPs) is the reason behind their decline. Formally, traditional medicines like ghyukumari (Aloe Vera) could be found in forest – also used to treat burns. Rather than the herbal medicinal plants used as home remedies for different treatments allopathic medical treatments are on the rise. As such traditional healing practices and products are being lost - also a cultural loss. The process of forming community forestry user groups has also excluded the locals in Sonpur, as there is no forest. They depend for fuel wood in the nearby community forest of Udrapur VDC. There is one CFUG in Betahani. Almost 93% of respondents stated that there has been a significant decline in wild
animals and birds. Tigers have not been spotted for decades while birds such as peacock,
vultures and eagles are rarely spotted in this decade. The drought has reduced grazing
land areas in the study sites.

Overall, the productivity of land has decreased due to the increase of temperature and
drought, change in rainfall patterns and floods. Soil moisture content of the land has
decreased in recent days due to drought, which requires irrigation even before the
cultivation of crops. People find it more difficult to plough their lands. Formerly the
locals have sown pulses in the paddy fields directly after harvesting the paddy as there
remained sufficient moisture contents. Presently the land has to be ploughed shortly
after the harvest of paddy, as the soil structure is far too hard to work upon.

The physical and chemical characteristics of the soil have changed. There were sufficient
earthworm, frogs, and other micro-organism in agricultural land – all of which were
highly important elements in maintaining the productivity of the soil. The spiders
that ate unwanted pests are no longer found in the soil. Rather insects such as snails
have now emerged excessively. These insects deteriorate the soil composition and
productivity.

Local farmers recalled that 25 years ago they did not use any chemical fertilizers. Soil
texture and productivity was good - with black soil and multitude of organisms. Also the
water percolation was good. They started using chemical fertilizer after experiencing
drought and this improved the soil productivity drastically. The production per kattha
was 1.5 quintal when using traditional manure and seed, while it rose to 3 quintals after
using chemical fertilizers and improved seeds, from same area of land. However, the
farmers over time have experienced that it's far too costly – as it requires approximately
Rs 700 to produce 1 quintal. Also after 15 years the productivity is declining. The soil
productivity in the area has declined so much that without use of chemical fertilizers,
the soil does not support production.

The increased costs of agricultural inputs involves purchase of chemical fertilizers,
pesticides, modern - hybrid or improved variety of seeds from the market, extraction
of ground water for irrigation, use of agricultural equipments as well as the cost
of agricultural labour. Also the cost for seeds is increasing and the use of improved
and hybrid varieties results in a form of production, supported only if heavy dose of
chemical fertilizers and pesticides are used. Thus, an increase in crop production implies
increased costs of agricultural inputs and an overall decrease in productivity. The effect
is different to the resource poor and other farmers. Some households have stopped
cultivating land – leading to fallow land, mainly citing the reasons of high production
cost and negligible profit. Majority of respondents of the FGD shared that agriculture is
no longer profitable Profession.

Pest and disease in crops has increased in recent years following the response of 89%
of respondents. Pulses have been worst hit by pulse beetles. In particular cultivation or
Arahar has sharply declined due to pest infestation. Some farmers are using pesticides
2-3 times for one single crop cycle. Stem borers and blast disease in rice is on the rise.
Gabaro, Patera, Kapti, Hispa, Gandhi bug pests are the most common insects that attack
paddy at the time of fruiting, hence not yielding healthy grains. During an FGD in Sonpur
the incident of massive crop damage by pest infestation - *Fauzi insect* (1 larva hatching up to 5000-7000 eggs) in the year 2052/053 B.S. (1995/96 A.D) and again in 2064/065 B.S. (2007/08 A.D). The swirling hurl of pest destroyed the entire crop in one single attack. In case of wheat, delay in sowing, strong western hot wind, forcing maturity of wheat led to smaller grain size, rust (brown yellow and black) diseases. *Bahadura* infestation in *Arhar lentils* has been causing heavy loss of yield. Earlier farmers used to cure pest infestation with organic measures, such as sprinkling a mixture of yoghurt and turmeric for *Kapti/Hispa* in rice, sprinkling ash for *Patero* etc. Availability of chemical fertilizers and heavy pest infestation, has led to local farmers using chemical pesticides extensively. Pest and diseases in pulses (*Arahur* and *Gram* in particular) was extensively and repeatedly reported in the local interaction.

**Effects on Decision Making Process and the Right to Information**

Irregular rainfall has affected the subsistence agriculture farming during seedling production, flowering and maturing period. Farmers are unable to predict the onset of the monsoon. Seasonal shifts are confusing farmers in the important decisions on planting time. Wrong decision on this crucial issue has considerable consequences for yields and can even lead to a complete crop failure. The latter is an irreparable damage to small scale farmers, who rely on shared farming unlike large scale farmers who are able to compensate the loss of such crop failure with another crop cycle. For example, paddy seedling has to be transplanted within 20 days, but irregularity in monsoon at times makes it difficult to transplant rice seedling, as seedling may grow old while waiting for transplanting. Seedlings more than 20 days are basically too old to be transplanted and will affect the yield and quality of the final product. The most affected crops in the area with regard to because of irregularities of rainfall are paddy and wheat.

**Food Availability in Market and Food Aid**

Climate change has increased the dependency of local farmers in the market for their food security. Local farmers are diverting their production practices to such product that are demanded in market instead of self consumption. It also reduces the exposure to the climate change incidences. Some farmers have changed cultivation of food crops to high value cash crops like sugarcane, off season vegetable farming, etc.

The traditional community level food distribution has been diverted towards market based food supply. Though patron-client relationships between barber, black-smith, tailoring and service receiver still are operational - a very important mechanism of securing food for some of the marginal groups. Barter system is in the decline though. Traditionally the well off groups of the community “provided” food to the poorer groups, as charity; this has changed in cash payment for labour. Partly increase in population in the study areas while decrease in food production given the different climatic effects. The households do not have year-round food available from their own production and seek to markets nearby to procure food items.
Cross Border Issues on Food Security

In some instances, climatic hazards have cross border incidences. Flood in Betahani is because of the manmade barriers (Laxmanpur Dam, and the Kalkalwa afflux bund) that stop natural flow of Rapti River and associated tributaries which are responsible for loss of agricultural land of the farmers. Also, it has been damaging the standing crops and food stock capacity of local communities. As local people use mud made grain store (Deri), the flood regularly damages the store and people are forced to suffer hunger in following season. More importantly, spread of disease during the flood is very risky for the health of the affected people.

Both VDCs have good access to Nepalgunj and Indian markets from the road link. The locals regularly visit the Indian market (Rupahdia) to buy rice, vegetables, pulses, meat, and other non food items. However, quality and harassment by border police to Nepalese are concerns. In general the locals buy low quality food provided by Indian Government as a concession to BPL Indian population. It is not good for safety of food that Nepalese people consume. On the other hand, Indian traders purchase the high quality grain e.g. Radha 4 (Rice) and NL-297 (wheat) from Nepali farmers. Contracts are made between the traders and the local farmers during the harvesting time of grain based on field evidences of harvest possibilities. Advance money is provided to the farmer - capital useful in need of critical times. The farmers are partly compelled to take such loan since alternative credit facilities lack.

The Indian market has an important role in providing agricultural inputs to Nepalese farmers living at the border areas as these two VDCs. Nepalese farmers particularly the marginalized farmers purchase improved / hybrid seeds, chemical fertilizers, insecticides and pesticides from the Indian markets, also as these inputs are often unavailable in Nepal in the farming period. The Nepali traders also sell these inputs at slightly higher price. The District Agricultural Development Office (DADO), DLSO and few NGOs also provide such agri-inputs though in limited quantity, often inaccessible to poor farmers. Many farmers complained that the quality of agri-inputs has declined and often the date is expired.

2.2.3 Effects on Accessibility of Food

Accessibility of food suggests a stable access to adequate food. It incorporates both physical and economic access to food within the household’s livelihood.

Economic Accessibility

Access to food available in the market is determined by the price of food and purchasing power of people (FAO, 2008). The price of food depends upon the production and other costs of the food. The purchasing power of the farmers depends upon the earning activities of them. It is found that farm and non-farm activities including wage and employment are major sources of income of the farmers. However, annual income had a wide difference among the respondents, 37% had annual income more than Rs.
90,000, and 7% respondents’ families living with annual income less than Rs. 30,000 per year. Climate change has effects on these earning activities of the people.

**Price of Food:** Both VDCs lie in the food production area of Nepal as data shows that the Terai districts are food surplus region. However, the study sites are climate affected sites and the normal scenario of production doesn’t apply in both VDCs. In spite of this condition, the people in the area get food in minimum price because they don’t need to pay costs for transportation and other costs. However, when there are high effects from climate change, there is higher price of food. Previous year there was NRs. 1800 per quintal of paddy harvesting in normal period when there was a higher incidence of drought and had very low amount of production. This year it is reduced and became NRs. 1300 for same amount of paddy. As production of grain highly depend upon the monsoon, the scenario of the price shows that the price of the food grain is very much climatic sensitive.

**Farm Based Income**

The livestock based economy is the major earning activity in the study sites. Buffalo milk was the main source of dairy products and cash income. Due to deforestation and limitation of grass due to drought in pasture land, the number of livestock has reduced to 50%. We found that there are very limited farming of improved varieties of cow and buffalo in both VDCs because they have very less access to services provided by Government office. So, their earning capability has deprived.

The earning capacity has also social dimensions and has different effects from climate change. Milk produced by untouchable caste is not accepted in the local markets. So, they don’t farm such livestock. They rear pig and hen which are not used and purchased by high caste people. Some ethnic people do livestock rearing as their profession, for instance, Gadriya are sheep herders, and pig farming is a traditional profession for Khatik.

Paddy is the ultimate source of income of farmers. In study sites, very few people are engaged in government and non government jobs. Also, there are very less opportunities of non-farm income for the farmers. Therefore, most of the farmers agree that paddy is the main source of income that is sold in market and in turn they buy other food products like vegetable, pulses, ghee, meat and non food products like shops, clothes, etc. As climate change has negative effects on the production of paddy, farmer experienced that their income from paddy drastically reduced from 2005 to 2010 AD due to the effects of drought.

More importantly, the pricing policy of the Government for the paddy is very critical that abolish the right of farmers to get appropriate price of their products. Last year the price of paddy was NRs. 1800 per quintal as there was very bad production of paddy due to drought. This year the price of paddy is NRs. 1350 per quintal as there is good production due to good monsoon. Farmer say that it is very low price as it don’t cover the cost of the production. They calculate all costs of production and say that the price of paddy should 2000 NRs at least to cover the costs. So, the business of agriculture production is very costly for them.
Agricultural works not remain the priority livelihood strategies of the villagers. The production of agriculture is not satisfactory as before. It became the costly business due to environmental problems. Without deep boring irrigation, excessive use of chemical fertilizer, insecticides and pesticides, the production of food became impossible. As a result, people who have land prefer to sell their land and do non-farm activities i.e. hotel, business and other activities. As they have access to road linked with Nepalgunj and India, and market is developing, some farmers have started hotel business, retail shops, small enterprise, etc. The increasing trend of seeking foreign employment (especially Gulf countries) for job from last five years from the study sites, shows that agricultural work is not remained the priority of farmers. There was practice of poor farmers going seasonal migration to India. But now rich and land lord household go to United Arab Emirates.

**Wage and Employment**

Nearly 78% of the respondents from household survey replied that they had multiple sources of income and only 22% with only one source of income. During agricultural season people, who have land, engage in farming activities as it is the major source of livelihoods for them. There are 5% of total household, who are land less people. Also, there are 15% household who have only land for settlement but not for agriculture. During the agricultural period, they work as wage labour in the farm of land lord.

It is found that wage labour in agricultural work has reduced due to climate change. From the last five years the poor people perceive that there is no wage labour because there is no work in farm land due to late rainfall and drought. Also, the wage labours lost their jobs during the drought and were forced to migrate to Nepalgunj and India in search of alternative jobs. Simultaneously, the wage rate of labour in agriculture has remained unchanged since last five years. Availability of daily wage labour (such as rikshaw pulling, brick laying and building construction works etc), work/employment in nearby city was an important factor of supplementary earning during that period.

As the labour work is climatically sensitive, they experience more exposure to the extreme events. Climate change has effect on human assets of labour. It has reduced working hours of agricultural worker particularly reducing the agricultural production. People use to work whole day before, but now they are unable to work after 10 AM due to intense temperature. Labour particularly sees new types of skin disease which cause to irregular spots in skin of people in recent days. Health problems like common cold, headache, illness spread quickly affecting whole communities and these are not recovered quickly. Diseases like Malaria and Kalajar are seen again in community which is very problematic to the health and working capability of agricultural workers.

Climate change has created new form of exploitation of the poor in community. As there are very less formal banking facilities in the study area, it increases the reliance of marginal groups on informal money lenders which is very costly for them to afford the increasing price of food. The formal financial institutions include in the area as Agricultural Development Bank (ADB), cooperatives, Nirdhan Bikas Bank (NBB). They provide loan on 18% interest rate. However, they need collateral. It is very lengthy process. So, the poor are obliged, to borrow loan from private money lender in the
interest rate of 60% or they borrow food grain from market. Also, there is very little share of information with marginal groups about the market situation. The local marginal groups experience that they pay more price for the same amount of food because they have little information about the price and they must borrow the food.

More importantly, climate change increased forced migration of marginal groups. The poor and marginal groups (dalits, Muslim) are no more engaged in agricultural land. As their land is located at marginal location, this is mostly likely affected by floods. These lands are fragmented in different parts and it is very difficult to afford for them to irrigate. It is very difficult for them to afford for improved varieties of seeds, regular use of insecticides and pesticides. It is very difficult to find wage labour in the community because rich farmer use tractors to plough the land as the land is becoming harder due to drought and use thrasher to process the grain. As a result, most of them are forced to migrate to India and some are in Gulf countries. As going to gulf countries is costly, the poor can’t afford it.

**Physical Accessibility**

There is good access of road and other infrastructure linked with nearby market in the study sites which made easy to buy and sell agricultural products as compared to last decade. However, there is regular damage of road and bridge by floods in the study sites. So, it is very difficult accessing food physically. Due to these floods, disruption in food supply chain and mobility occurring because of damage of infrastructure such as road, bridges, and houses. Betahani in particular, bordering Indian market as well as Nepalgunj market has made difficult the physical accessibility to food items due to flood.

2.3 **Adaptation to Adverse Effects of Climate Change in Pursuit of the Right to Food**

*Autonomous and Planned (Promoted) Adaptation*

From the above discussions the effect of climate change apparently is linked to the adequacy, availability and access of food in the study sites. The farmers themselves and also with the support of external agencies have been taking up different practices in an attempt to reduce the negative effects. Drought is the major climatic hazard that has many effects on the livelihoods and food security of the farmers.

2.3.1 **Coping with Drought**

Farmers used improved and hybrid varieties of seeds requiring lesser amount of water. It was also promoted by DADO and market in India. In the study area, people mentioned that some three decades ago, most of the farmers were using indigenous seed varieties but now almost all local paddy seeds have gone to extinct, which includes Talkan, Dadewa, Karangi, Aanandi, Swapank, Mihi, Barma etc. Only Shyam Jeera and Satha varieties are found in rare amount. Most of the farmers have lost their indigenous seed varieties and are now dependent on the market for the supply of seeds. Those
local varieties have been heavily replaced by Janaki, Radha-4, Radha-9, Sabitri, Shyama Mansuli, Mansuli, and even by unregulated seed varieties like Prithvi, Gorakhnath, and Pioneer from India. A total of 92% of the respondents answered that improved varieties like Radha-4 and Radh-9 are the most dominant varieties cultivated because of their tolerance for drought and water logging/submergence respectively. Farmers now opt for short-season (three months) hybrid/improved varieties over the long-season (4-5 months) local indigenous varieties, because the growing seasons are getting shorter and rainfall patterns are not regular. However, such improved varieties require lot of chemical fertilizers and are prone to pest attack. This trend of using improved varieties of seeds and sometimes using unregulated and non quarantined hybrids from Indian market is displacing the well adapted local races of rice and wheat, which in itself can be termed as bad adaptation.

Irrigation is very crucial inputs for agricultural production at a time to cope with drought. Change in rainfall pattern i.e. intensive rainfall and late rainfall has negative effects on irrigation. In starting period people used ponds for irrigation purpose as there are no irrigation channels in Sonpur and one irrigation channel in Betahani VDC. The irrigation channel of Betahani was regular before but it is seasonal now. Farmers also used tube well for preparing transplanting bed of paddy cultivation and irrigation for vegetable. It wouldn’t work too. Now without deep boring water pumping from ground water, there is very little chance of irrigating their lands. Around 30% of total farmers use 1.5 horses power electric motor to pump underground water. The excessive and disproportionate use of ground water has implications on drinking water and it abolish the water use right of local communities.

Drought has negative effects on drinking water. Previously they used water from well. Due to drought almost the entire well are dried up. So, local communities, in support of Red Cross and Janjagaran, a local NGO, and Plan International, constructed tube well. Most of the traditional ponds in the study sites are going too dried up. They have prepared cement wall to protect the pond and also have plan for plantation around it.

To cope with the limited availability of grass in pasture land, they reduced the number of their cattle. Very few households changed their traditional cattle to improved varieties of cattle now. Also, they are planting improved varieties of fodder like Ipil Ipil, Bakaino, Jaina and grasses like multiyear (style, joint vej) and seasonal (barsim). But such kinds of promoted measure are not suitable to the poor because they have less land that can be used for grass cultivation. Simultaneously, DADO has been forming the groups of cow, buffalo, and goat to manage their cattle. They are also provided different training about grass cultivation, livestock health, feed management, etc.

DADO in Betahani VDC started to lease the old and left brick kiln to the poor categories of the people for fish farming. This will increase the water retention capacity in the soil and promotes the income of the poor. It may increase the accessibility of the poor to food available in market.

People have changed their cultivation practice. People in the past, used to sprinkle Musuro or wheat in the field right after paddy harvesting without ploughing and irrigation. Similarly, 20-30 years ago people used to sprinkle (chharuwa dhan) paddy seeds without plough and transplantation. Such kind of cropping was only possible in
local paddy varieties like, Swapankh, Didhawa etc, and pest infestation was low and organic fertilizers would support the crop yield. But these days, such traditional ways of cultivation is out of the question. With the change in cultivar varieties, there is a change in cropping pattern too. Similarly, they have changed their plough techniques. Now the rich people use tractors because soil is becoming harder instead of oxen plough.

People are using cattle dung and agricultural residues to cope with fuel-wood scarcity. In a focus group discussion, women shared that these days cattle dung has become so precarious and almost rare that either they or kids are sent behind the cattle (while grazing along the field and roadside pasture) to collect dung. Some households are using improved cooking stoves, cylinder gas near to road and bio gas to cope with scarcity of cattle dung.

To improve the soil productivity, farmers are using chemical fertilizer and insecticides and pesticides. However, there is increasing awareness that such inputs decreasing the productivities of soil. Therefore, DADO has been promoting the practice of green manure, and integrated pest management.

Migration to India or elsewhere is for a additional source of income is an alternate coping strategies for the poor. Also, the number of people working as daily wage in non-agricultural labour is rising, and is a vital part of income of many families. This in a way has increased economic accessibility (increased purchasing power), while on the other hand displacing agricultural labour and increased disinterest in agriculture, which ultimately will affect the food availability dimension of the right to food.

2.3.2 Coping with the Floods

Bamboo embankment: local communities in both VDCs constructed bamboo and other green shrub check dam to control the small floods of Listikeshan, Jethan and Gundrikholo. It was very effective as it promoted greenery too. Also, cement check dams have been constructed to save the land cutting from floods.

People in Betahani VDCs have been changing their traditional grain stock process. Instead of using traditional mud made store, they are making store from steel and tin. It protects grain from water. They also received social support from their relatives. It is regular practice in Betahani VDC that a significant number of people receive benefit from their relative in India. The social groups who have good kin networks are better adapted than other categories of people. They are changing the types of building construction. They are constructing base of their house with more height now. In this regards, cemented houses are better adapted than mud houses.

More importantly, people of Betahani VDC cultivated grain in the land left by river. They have allocated land equally to the flood affected households and did cultivation of musuro and watermelon.

Recently, disaster preparedness and risk reduction programmes are up and running in flood prone VDCs including Betahani. There are some disaster/emergency relief
packages during the times of calamities. Government has attempted some flood control-embankments using bio-engineering technologies, and a master plan to prepare aflux bund to control flood in the region. DADO with support from FAO/UNDP has started a demonstration project on impacts of climate change in agriculture and promoting adaptation measures in three VDCs, namely Holiya, Bankatawa and Udayapur. Some of the activities in its first year were: promotion of submergence tolerant varieties of rice (*Sona Mansuli*, IR 64 which can tolerate inundation up to 15-20 days), promotion of mixed cropping, non-seasonal vegetable farming, awareness raising training on climate change and its effects and adaptation techniques, training on use of organic fertilizers, Jetropha cultivation etc. Similarly, regional Agricultural Research Station (RARS), Khajura under the National Agricultural Research Centre has mandate to carry out agricultural research for mid and far western regions to increase productivity through generation of appropriate, efficient, sustainable technologies, production of source seed and provision of technical services to the farmers. However, such research and extension requires further linkages with the effects of climate change in the region. For irrigation with ground water, the district ground water resources development centre has ground water irrigation coverage in 24 VDCs in the district with ground water shallow tube well irrigation project (*Sukha Rahat*) and ground water deep tube well irrigation projects.

2.3.3 **Successful Adaptation Strategies**

Generally the communities have relied on following strategies as part of their efforts over the years to adaptation: e.g. livestock rearing, fish farming, cultivation in the river beds once the floods subside, Integrated Pest Management, use of compost manure, pond conservation. These have been applied quite successfully and apparently more sustainable for the local communities.

2.3.4 **Barriers to the Adaptation**

**Unequal Distribution of land:** The average landholding size in the study sites was 38 Kattha (1.28 ha). However, the landholding size was highly disproportionate among the respondent households. There were landless families to families having 640 Kattha of land. A 59.6% of the respondents had the landholding between 10-40 Kattha, followed by nearly 15.7% of respondents with landholding less than 10 Kattha, 11.3% with 41-70 Kattha of land. The land less people is unable to receive loan from bank as bank needs collateral. The system of land tenure has made the marginal groups fall into the state of landlessness or near-landlessness. This has shoved their food production ability to risk from climate change thus limiting their choice of adaptations methods. As they have very small holding of agricultural land, they are unable to diversify their agricultural production. Also, they have very poor access to irrigation channels.

**Highly fragmented distribution of land:** There are so many parts of land of single owner. Such fragmented land is considered as the high exposure and sensitive to the climate change incidences. Also, there is very difficult to manage irrigation facilities in such kinds of land.
**Education level:** Education level of the respondent was found as 56% illiterate, 39% literate and rest 5% with school level education and only one individual among the 319 respondents had higher level of education.

**Conglomerated Settlement:** The settlement of madeshi people is highly congested and very less space available within the settlement. As a result they are unable to manage kitchen gardening, transportation and other agricultural based activities i.e. grain post harvest treatment.

**The caste and gender based occupation:** The occupation positions in study sites are rigidly based on caste and gender. It is found that the institutionalized occupations of marginal groups are more intense and have longer exposure and less resiliency with increasing temperature, hailstorm, drought, etc. because these occupations are directly attached to nature.

**Social networking:** Social capital and relationships affect the capability of communities to adapt to risks related to climate change. In the study area it is found that social groups and networking are formed based on caste, gender, ethnicity, age system and similar other factors. The sharing of capital and food during the crisis period and starvation favours the high caste people in comparison to low caste people.

**Government policies:** DADO, DLSO, VDC and some non-governmental organisations (NGOs) have been formulating and implementing, though not directly mentioned climate change and food security programmes that are able to cope and adapt with climate change. However, marginal groups perceive that these policies and activities are not effective and are not linked with their livelihood assets and strategies. DADO mostly focuses their activities for small irrigation projects, improved seeds and pesticides, etc. These activities aren’t suitable for the people who have nominal lands. The extension programmes are oriented towards land-based activities where the dalits and women have very poor access. Most of the adaptation activities include landslide control, road stabilization, greenery development that mostly favours land lords. Therefore, most of the dalit communities and women employ reactive or autonomous adaptation while other social groups use proactive and planned adaptation.

**Patron-client relation:** The rural economy of Nepal is based on patron client relationships between socially disadvantaged (dalits and indigenous groups) and advantaged caste (higher caste) people. The bista system has been reducing the total receive of the grain due to low agricultural production. As they are paid in grains, it is also reducing their income earning opportunities.

### 3. Findings, Conclusions and Recommendations

The study finding shows that communities experience negative effects from changes in temperature, rainfall pattern and incidences of climate induced natural hazards, i.e. drought, floods, heat and cold waves, extreme precipitation, etc. These climatic change events have tremendous affects on productivity of agricultural land, forest; pasture lands which are very important factors for self sufficiency of food. We found disproportionate effects on the production of food among different social and economic categories of
people. There are less negative effects on the production of rich farmers who have large track of land and have opportunities of using deep boring water pump for irrigation, improved varieties of seed, pesticides and insecticides, chemical fertilizer, etc. However, the adequacy, availability and accessibility to food of other categories of farmers have adversely affected by the climate change events.

To cope with the negative effects of the change, local communities practiced autonomous adaptation practices like using tube well for irrigation, reducing the number of their cattle, change in crop calendar, diversifying their cropping pattern, etc. They are also benefiting from external support to adapt with this like deep boring pump, cement check dams, improved varieties of cattle and grasses, etc. These adaptation measures are also diverse among different categories of the communities. Major barriers for sustainable adaptation to the effects of climate change, we found the unequal distribution of land, fragmentation of land, access to forest, and unequal use of ground water, cross borderer issues, social exclusion and networking, credit facility, inability of service providers to support in adaptation strategies.

Based on the above mentioned finding and conclusion, the study recommends following programmatic and advocacy level strategies to ensure the right of vulnerable communities in the context of climate change exposure, sensitivity and adaptive capacity.

**Programmatic recommendation:** Following are the immediate adaptation measures in the study area to promote livelihood and food security of vulnerable communities.

- Community based rain water harvesting and natural ponds conservation.
- Road side and river side plantation.
- Income generation activities through river side cultivation.
- Agro-forestry practices.
- Construction of grain storage facilities/community food.
- Promotion of improved cooking stoves and bio-gas.
- Nutrition awareness campaign.

Following are the advocacy measures for the study area that will promote livelihood and food security of vulnerable communities.

- The study finds disproportionate use of ground water. In the context of climate change and adequacy of food, it has been reducing the adapting capacities of the vulnerable community. Therefore, it is essential to make strategies for sustainable user right of such water and focusing on community based groundwater management.
- As farmers, whose lands are fragmented, are more vulnerable to decreasing of productivity and production of food from drought, it needs to advocate consolidation of agricultural land suitable to community irrigation system.
- Local Terai communities must also have a right to access the community forestry – despite “indirect” users, from outside the community forestry boundary. The communities of Sonpur are not direct users of any forest, as they do not have a right to the forests – and reduced number of cattle and food production. Therefore, it is necessary to advocate for the distance user, cross border forest use right or for the broader land use pattern of VDC where right to forest is must.
- Mainstreaming LAPA: LAPA should be internalized through VDC process. In VDC,
there is provision of 15% funding to agricultural activities, 15% funding to the poor and marginalized. Funding guidelines of the LAPA process has to be developed and informed for communities to access the support in adaptations practices to negate the effects of climate change.

- Farmers are not getting actual price of the paddy produced. In 2010/2011 Government has fixed Rs. 135 per quintal, which is underpriced and thus put farmers at risk. A fair pricing system for farmer’s products is needed to be formulated.
- Right to shelter during the flood /inundation period for affected people – as this still remains a contentious issues. Management of safe and appropriate shelter and or settlement is a must.
- Open border and seed "transport" unchecked by the customs e.g. quarantine control, can in the long run affect and reliant on the hybrid seed – in case of seed or crop failure given climatic changes there is no mechanisms or process to be informed of and compensated for. Cross border transport of seed and fertilizer has to be controlled and regulated through a systematic quarantine.
- The saving and credit groups remaining the communities. It has scope to be promoted as rural small scale finance institution, so as it can function as loan providers to the locals for agricultural production purpose.
- Benefiting from REDD: Nepal is the potential benefiting country from REDD especially to reduce deforestation in the Terai area. Hence plantation alongside the river, road, as well as in agro-forestry, provides potential to benefit from REDD. This however requires policy lobby and influencing the policy making process.
- Use of improved varieties, hybrid seeds, chemical fertilizers and pesticides is not a sustainable practice for the long run. Hence advocacy to promote mixed crops, protection of traditional seeds, traditional green manure species, NTFPs needs to be done.
- Banke district is a food surplus district. Despite this in longer run, there is a need to establish some form of public government administered system of food storage and distribution (could adopt a ration card system) as to support the climate vulnerable communities, during times of natural disaster including flooding and inundation and severe drought led implications. This can contribute to strengthen the fulfil aspects of the states obligation for the human right to adequate food.
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Food-first Information and Action Network (FIAN) Nepal is a member-based human rights organisation to promote and advocate for the realization of the human right to food in Nepal and has no political or religious affiliations. In December 2008 FIAN Nepal acquired legal status as non-governmental organisation from Kathmandu District Administration Office. FIAN Nepal was recognized as National Section of FIAN International in 2009, whose International Secretariat is in Heidelberg, Germany.

The right to be free from hunger is a fundamental human right enshrined in the International Covenant on Economic, Social and Cultural Rights (ICESCR), 1966 and many other international human rights instruments.

Poverty and hunger in Nepal is not due to insufficient food production but largely because of systemic marginalisation and exclusion that denies people from accessing natural and productive resources and means to feed themselves in dignity.

VISION
We envision Nepal where every individual enjoy the human right to food.

MISSION
We contribute for the realization of right to food in Nepal through people centred activism, advocacy and appropriate legal recourses. FIAN stands against discriminatory, exploitative and exclusionary policies and practices – both institutional and customary, which prevent people from feeding themselves in dignity.

GOAL
People secure their access to and control over resources - natural and productive, and livelihood opportunities required to ensure their right to food.