Understanding the Dynamics of Food Insecurity and Vulnerability in Himachal Pradesh

Food Security and Agricultural Projects Analysis Service (ESAF)

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Abstract

This paper documents the main findings of the vulnerable profiling work carried out in the State of Himachal Pradesh, India, as a mean to support the planning of food security and livelihoods promoting interventions at the state level. A similar study was undertaken in Orissa, India.

The paper analyses the main characteristics and causes of food insecurity and vulnerability, seeking to identify who and where the vulnerable and food insecure are, why they are at risk of becoming food insecure and what options exist to reduce this risk. Using the sustainable livelihoods framework and collecting qualitative and quantitative data collection from four selected districts, the paper looks on the vulnerability of five livelihood groups, notably subsistence farming households, marginal commercial farming households, agricultural labouring households, migratory labouring households and pastoralist tribal households.

Whilst Himachal Pradesh is comparably less food insecure, the paper shows that the state do face a range of challenges related to undernourishment and malnutrition. Anthropometric measures show that close to every second child under five in HP are underweight and 41 percent of adult women are anaemic, only slightly lower than the national figure. The study finds the main causes of food insecurity and vulnerability include increased fragmentation of land, limited or no access to welfare provisions and public services related to migration, weak infrastructure and lack of accessible credit institutions.

Based on the findings of the analysis, the paper identifies key interventions to address the causes of food insecurity and vulnerability in Himachal Pradesh. These include increased investment in irrigation; improved extension services; ensuring social service provision and basic human welfare; and continued assurance of high levels of investment in constructing and maintaining rural infrastructure as a prerequisite for sustainable and broad-based economic growth.

Finally, the paper includes recommendations on indicators to be monitored as part of a potential Food Insecurity and Vulnerability Information and Mapping System (FIVIMS) in Himachal Pradesh, focusing on a core set of indicators to be monitored at state and district level.

Key Words: Vulnerability, Food Insecurity, Vulnerable Groups, Livelihoods Profiling, Himachal Pradesh, India.
JEL: Q18, Q19, O20.

Himachal Consultancy Organisation Ltd (HIMCON) carried out this study in close collaboration with the Department of Food, Civil Supplies and Consumer Affairs. Technical guidance for the study was provided by FAO in Rome and Delhi, as well as by the Ministry of Food and Consumer Affairs in New Delhi and the India FAO office.

This publication is based on the five state-level vulnerable group profiles developed by N.S. Bist, M. Tiwary, C.S. Vaidya, M. Punjabi and S. Vasan. Special thanks to A. Masefield for earlier draft reports; M. Knowles for providing technical support, N. Horii for early contributions and M. Smulders and S. Bonetti as well as D. Gustafson for comments. This work was coordinated by C.R. Lovendal and K.T. Jakobsen from the Food Security and Agricultural Projects Analysis Service (ESAF) as part of the vulnerable group profiling work.

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Abbreviations

AAY	*Antodya Anna Yojna* (scheme providing the poor with food grains at low prices)
ALHs	Agricultural Labouring Households
APPs	Anti Poverty Programmes
AWC	*Aanganwadi Centre* (nutrition and education for children above two years of age)
BMI	Body Mass Index
BPL	Below Poverty Line
CED	Chronic Energy Deficiency
CPR	Common Property Rights
DDP	Desert Development Programme
ESA	Agricultural and Development Economics Division
FAO	Food and Agricultural Organization
FFW	Food for Work
FIVIMS	Food Insecurity and Vulnerability Information and Mapping Systems
GDI	Gender Development Index
GoHP	Government of Himachal Pradesh
GoI	Government of India
GSDP	Gross State Domestic Product
HDI	Human Development Indicator
HHW	Households Headed by Women
HP	Himachal Pradesh
HPI	Human Poverty Index
ICDS	Integrated Child Development Scheme
ICT	Information and Communication Technology
IMR	Infant Mortality Rate
JFM	Joint Forest Management
KVK	*Krishi Vigyan Kender* (vocational training institute)
Kcal	Kilocalorie
LBW	Low Birth Weight
MCFHs	Marginal Commercial farming Households
MLHs	Migratory Labouring Households
MDGs	Millennium Development Goals
MDMS	Mid Day Meal Scheme
MMR	Mental Mortality Rate
MMW	Maternal Mortality Weight
MSSRF	M.S. Swaminathan Research Foundation
MT	Metric Tons
NCMP	National Common Minimum Programme
NFHS	National Family Health Survey
NFP	New Forest Policy
NGOs	Non Governmental Organisations
NNMB	National Nutrition Monitoring Bureau
NREGS	National Rural Employment Guarantee Scheme
NSDP	Net State Domestic Product
NSSO	National Sample Survey Organisation
NSS	National Sample Survey
PDS	Public Distribution Systems

PRI	Panchayti Raj Institutions
PTHs	Pastoralist Tribal Households
RGI	Registrar General of India
SC	Scheduled Caste
ST	Scheduled Tribe
SFHs	Subsistence Farming Households
SGSY	*Swarnjayanti Gram Swarozgar Yojana*
SHDR	State Human Development Report
SHGs	Self Help Groups
SLA	Sustainable Livelihoods Approach
SME	Small and Medium-sized Enterprises
SRS	Standard Registration System
SSN	Sufficient, Safe and Nutritious (food)
TPDS	Targeted Public Distribution Scheme
UFMR	Under Five-Mortality Rate
UNDP	United Nations Development Programme
UNICEF	United Nations Children's Fund
VGP	Vulnerable Group Profiling
VGPs	Vulnerable Group Profiles
WCD	Women and Child Development (Department)
WFS	World Food Summit
WFP	World Food Program

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THE DYNAMICS OF FOOD INSECURITY AND VULNERABILITY IN HIMACHAL PRADESH

Executive Summary

More than one-third of the world's underweight children live in India, a country with an alarmingly high national prevalence of about 47 percent. While overall poverty levels declined during the 1990s, regional disparities and socio-economic inequalities within states worsened. One of the most significant policy lessons of recent decades has been that while macro level food self-sufficiency in India has been achieved, micro-level food security for the poor has not been ensured. The largest category of poor and vulnerable people in India are those depending either entirely or primarily on agricultural labour-based employment, with little or no capacity to produce their own food.

The National Ministry of Food and Consumer Affairs, together with the state level departments of Food and Public Distribution launched a pilot project to support the development of a Food Insecurity and Vulnerability Information and Mapping System (FIVIMS) in the two states of Orissa and Himachal Pradesh (HP). This state level study was undertaken on behalf of the Government of Himachal Pradesh (GoHP), from 2004 to 2005 with FAO support and the services of HIMCON.

The study followed a 'livelihoods based approach' to understand better the vulnerability of poor people to food insecurity. Four districts in HP were identified for the purposes of the study (Bilaspur, Chamba, Kangra and Kinnaur), on the basis of their representation of four regional areas (Lowlands, Midlands, Highlands and Alpine/Tribal). Five food insecure livelihood groups were identified for the study: (i) subsistence farming households; (ii) marginal, commercial farming households; (iii) agricultural labouring households; (iv) migratory labouring households (non- farm); and (v) pastoralist tribal households.

HP has become widely recognised as one of the most economically progressive states in the country. Despite significant changes in the structure of the state economy involving a long-term shift from primary sector dependence to industries and services, growth continues to depend upon the agricultural sector and related activities.

The proportion of poor people living in HP has substantially declined in recent decades and poverty levels are significantly lower than those in India as a whole. NSS data from 1999-2000 suggest a decline in poverty from 26 percent in 1973-74 to 7.6 percent (compared to the national average of 26 percent for 1999-2000).

While the state compares favourably to other states in terms of food availability, anthropometric measures in HP underscore the persistence of poor nutritional status among children. Close to half the number of children under five in HP are underweight, only slightly lower than the national figure. In addition, 59 percent of children under five and 41 percent of adult women are anaemic.

The findings of the report focus on three questions: (i) who is vulnerable to food insecurity? (ii) why are these people vulnerable to food insecurity? and (iii) how do they seek to attain food security?

Subsistence Farming Households (SFHs): While many farming households have shifted from subsistence cereal to commercial cash crop cultivation, some have not achieved this

transition because of poor land quality, location, inappropriate terrain, absence of irrigation and other causes. Unless SFHs were able to diversify considerably their livelihood strategies to secure reliable sources of secondary income (e.g. livestock rearing, farm or non-farm employment), they usually experienced food insecurity and vulnerability. Without irrigation, food grain production can meet between three to seven months of average household requirements depending upon zone location. Therefore dependence on livestock rearing and access to common property rights (CPRs) remain crucial for food security.

Marginal Commercial Farming Households (MCFHs): The agro-climatic conditions in HP are suitable for cultivating a variety of cash crops including fruits, vegetables and floriculture. Additionally, many MCFHs (defined as owning less than one ha of land, but with the average holding only 0.4 ha) have started to explore the potential of producing off-season vegetables and fruits for the national market. The high profitability of cash crops relative to subsistence cereal-based agriculture has resulted in large-scale shifts in production. This can often result in higher levels of household food security and reduced vulnerability because of enhanced incomes and asset accumulation. The study confirmed that MCFHs tend to have reduced food insecurity and vulnerability as compared to SFHs. However, the very small scale of farm operations for MCFHs also results in relatively high costs of production and low risk-bearing capacities.

Agricultural Labouring Households (ALHs): ALHs are defined as those deriving more than 50 percent of total household income from wage-based manual labour in the agricultural sector. As a result of progressive land policies over the last five decades, HP is one of the few states in India that does not have a significant proportion of landless labourers seeking work in the agricultural sector (estimates were approximately six percent in 1991 as compared with 58 percent in neighbouring Punjab[1]). In recent years, as land has become more fragmented, and where cash crop cultivation may have been less feasible, poverty has driven an increasing number of individuals to migrate away from their farms (for all or part of the year) in search of higher incomes. In addition, the recent growth of the more labour intensive commercial agricultural sector in HP has attracted migrant workers from other states and Nepal seeking to escape poverty and food insecurity. The vulnerability of migrant ALHs is further exacerbated by their inability to access basic public entitlements such as food subsidies from fair price shops (TPDS) and public services.

Migratory Labouring Households (Non farm) (MLHs): This livelihood category tends (along with agricultural labourers) to have one of the lowest income levels, which leads to greater food insecurity and vulnerability. As economic migrants living away from their place of origin, their extended families and community networks, they tend to face specific challenges, such as problems in accessing state policies and institutions.

Pastoralist Tribal Households (PTHs): The majority of the population in relatively remote and undeveloped[2] areas combine some cultivation with extensive livestock rearing (with the latter generally dominant) due to the availability of pastures and forests. A significant proportion of the population is made up of tribal communities such as *Gujjars* (involved in

[1] The 2001 census indicates that the overall percentage of agricultural labourers in HP is 3.15 percent. However, the true picture may be somewhat hidden by the fact that the category of 'other workers' (i.e. non agriculture) constitutes a state-wide 30 percent, while of the 65 percent officially classified as 'cultivators,' many households may employ multiple livelihood strategies, including agricultural labour, as a way to supplement meagre farm-based incomes.

[2] Such as in alpine mountainous areas and Sirmour in the southwest.

buffalo herding) and *Gaddis* (shepherding). The lower caste *Gaddis* frequently face socio-economic discrimination (often resulting in little to no livestock ownership) and are consequently more vulnerable. Despite their high degree of vulnerability, non-settled communities reported concerns regarding constraints faced in accessing benefits from targeted welfare programmes such as NREGS, SGSY and ICDS[3].

Overall Findings and Policy Implications. Based on the FIVIMS analysis conducted, the study points to a number of priority areas for intervention to enhance the overall effect of the development of agricultural and non-agricultural sectors and improve the livelihoods and food security status of poor and vulnerable groups. Key policy priorities for livelihood promotion and protection arising from this study include: (i) a requirement to accelerate investment in irrigation and rainwater harvesting; (ii) more focus on opportunities for improved outreach and effectiveness for the access of specific livelihood groups (including pastoralists) to extension services; (iii) a review of marketing constraints; (iv) intensive efforts to ensure minimum levels of service provision (health and education) and basic human welfare (social protection) for the poorest and most vulnerable sections of society; and (v) continued assurance of high levels of investment in constructing and maintaining rural infrastructure as a prerequisite for sustainable and broad-based economic growth.

A central part of FAO-FIVIMS programme support to HP was the development of a framework to systematically monitor and analyse food insecurity and vulnerability. Much of the analysis was based on already existing data, although it is clear that more attention must be paid to quality, frequency and levels of disaggregation. Transparency and access to information across various levels within sectors, as well as inter-departmental and cross-sectoral coordination on food insecurity and vulnerability analysis, are essential characteristics of such a system. In addition to specific analysis conducted on the basis of various livelihood groups, it will be important to ensure a break-down at the district level of key FIVIMS indicators to promote decentralized awareness, analysis and accountability to the greatest extent possible. The Government of India National FIVIMS Counterpart has selected a number of key indicators as strategically significant; a more detailed set of food insecurity and vulnerability indicators were identified specifically for HP and each of the five livelihood groups.

[3] NREGS: National Rural Employment Guarantee Scheme, SGSY: *Swarnjayanti Gram Swarozgar Yojana*; ICDS: Integrated Child Development Scheme

1. Introduction and Rationale for the Study

Despite steady improvement in economic growth and development in many parts of the world, a significant proportion of the global population continues to live with food insecurity and malnutrition. The objective of the first of the Millennium Development Goals (MDGs) is to reduce the number of extremely poor and hungry people in the world. Although the situation has improved since the 1990s, the rate of improvement remains far short of that required to attain these targets. The latest FAO figures suggest that 823 million people in developing countries are food insecure and undernourished, which is an increase of 23 million since 1996. Nonetheless, over the past 10 years, the proportion of undernourished people in the developing countries fell to 17 percent because the total population grew faster than the undernourished portion. There is increasing evidence that the number of people who remain vulnerable to food insecurity is considerably higher (FAO, 2006).

The most widely accepted definition of food security was agreed upon at the World Food Summit (WFS) in 1996: *"Food security exists when all people, at all times, have physical and economic access to sufficient, safe and nutritious food to meet their dietary needs and food preferences for an active and healthy life."*

Box 1.1 Key Concepts: Hunger, Food Security, Vulnerability

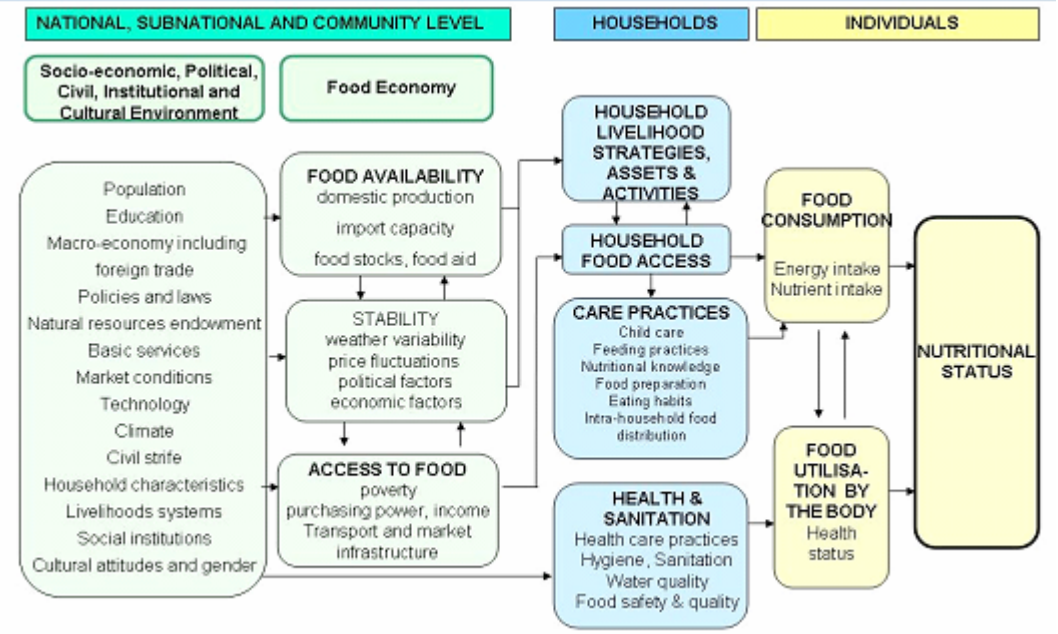
Hunger: A general concept to describe the sensation of not having enough to eat. FAO's indicator of hunger is 'undernourishment' a measure of energy deficiency or food deprivation.

Food Security: As defined above, the broad definition of food security has four dimensions: availability, access, utilization and stability; stability refers to risks associated with fluctuations in food availability and access over time. These dimensions are presented in the FIVIMS framework (Figure 1.1).

Vulnerability: Generally defined as a function of 'exposure to risk and ability to cope.' In the FIVIMS context, vulnerable people are those who face a high likelihood of experiencing food insecurity in the future (hence the 'potentially food insecure').

One of the challenges of reducing the number of food insecure people in the world is to help people to break out of generational cycles of poor nutrition. Undernutrition (which includes both energy and protein malnutrition as well as micro-nutrient deficiencies such as iron, vitamin A and iodine) in turn leads to high morbidity and mortality levels. It is the most common cause of child mortality and is responsible for more than half of all child deaths (an estimated 6 million children every year) as a result of weakened bodies and immune systems. The United Nations Children's Fund (UNICEF) estimates that of the 146 million children under five who are underweight in the developing world, 106 million (73 percent) live in just 10 countries. Even children who are only moderately underweight have been found to be twice as likely to die of common infectious diseases than children who are better nourished.

Figure 1.1: The FIVIMS framework



Food insecurity should be understood both, as something that causes poverty, vulnerability and livelihood insecurity, but that is also a result of these conditions. As discussed in the 2005 edition of 'The State of Food Insecurity in the World' (SOFI 2005), eradicating extreme hunger speeds up progress towards the development goals in other sectors. Hunger and undernutrition make it extremely difficult for poor people to improve their own livelihoods and make it impossible for them to contribute toward sustainable and broad-based growth. The persistence of hunger is a direct challenge to efforts to reduce child mortality, to improve educational attainment and to enable people to invest in their own futures.

1.2 Poverty, Food Insecurity and Vulnerability in India

In 2000, 28.6 percent of the population of India lived below the national poverty line (on the basis of monthly per capita expenditure), and approximately half of all children and one-fifth of the total population were either moderately or severely malnourished (FAOSTAT).[4] Despite sustained economic growth, poverty reduction and centrally backed targeted policy efforts, India has made far less progress toward reducing malnutrition over the last decade than other countries with comparable socio-economic indicators. It is also widely accepted that regional disparities and economic inequalities within and between states have worsened, even though poverty overall may have declined during the 1990s.

In 2006, more than one-third (57 million) of the 146 million children under five who were underweight in the developing world lived in India. UNICEF attributes 50 percent of all childhood deaths in India to malnutrition.[5] Hunger tends to be chronic rather than acute. Particularly vulnerable groups include women, adolescent girls, children under five, scheduled tribe and caste communities and people living in remote rural areas.

[4] The proportion of underweight children below five years of age fell from 53% in 1992-93 to 49% for 1998-99 (Millennium Development Indicators).

[5] This marks only a very slight improvement from the early 1990s. Between 1992 and 1998 the annual decline of malnutrition is estimated to be only 0.8 percent for India in general. (UNICEF, 2006)

Box 1.2: MDG1 Update: Progress on the Eradication of Extreme Poverty and Hunger in India

- To achieve the goal of eradicating extreme poverty and hunger by 2015, India must reduce the proportion of people below the poverty line from nearly 37.5 percent in 1990, to 18.75 percent.
- Data from 1999 to 2000 show that the poverty headcount ratio is 28.6 percent.
- The prevalence of underweight children in India is 49 percent.
- The prevalence of undernourishment during 2001 to 2003 is estimated at 20 percent down from 25 percent in 1990 to 1992
- The total number of undernourished people during the period from 2001 to 2003 is estimated to be 212 million.

Source: FAOSTAT and Human Development Report 2006

In the period from 2001 to 2003, 20 percent of the total population of India was undernourished. The average calorie consumption marginally increased from 2370 kcal during the period 1990 to 1992 to 2470 kcal in 2002 to 2004.[6] In addition to energy deficiency, a lack of diversity in the diet is a key issue (e.g. cereals contribute a disturbingly high proportion of calorie intake, more than 80 percent, for the lowest decile, compared to approximately 50 percent for the highest decile).

According to a World Bank report on malnutrition across India, undernutrition related to micronutrient deficiencies alone may cost the country $2.5 billion annually owing to lowered productivity (Gragnolati et al, 2005). A large share of India's population suffers some degree of iron deficiency (anaemia affects 74 percent of children under the age of three, more than 90 percent of adolescent girls and 50 percent of all women) and a significant proportion suffer Vitamin A and iodine deficiencies (fewer than half of all households use iodized salt). Diseases involving diarrhoea are the second highest cause of death in India, after respiratory diseases. An estimated 700,000 children die annually and the total national infant mortality rate is 62 per 1000 live births. Half of the underweight children of India live in only six states (Maharashtra, Orissa, Bihar, Madhya Pradesh, Uttar Pradesh and Rajasthan) where child malnutrition levels exceed those of countries in Sub Saharan Africa.

To address widespread poverty, food insecurity and vulnerability, the Government of India (GoI) has, since independence, implemented multiple initiatives such as the Integrated Child Development Services (ICDS) Programme, the National Health Programme, the National Rural Employment Guarantee Scheme (NREGS) and, in recent years, the National Plan of Action on Nutrition. Though macro-level food self-sufficiency has been achieved, partly through the establishment of national systems for public grain procurement and distribution, this has proved insufficient to ensure micro-level food security for the poor.

The national food policy agenda remains politically contested particularly as it relates to questions about India's general development. Is the country better served by ensuring national, state and farming household level 'self sufficiency' in food, or does the persistence of food insecurity, despite adequate food availability, point to alternative policy options geared more broadly towards the acceleration of 'pro-poor' growth? Proposals to reorient dramatically India's rural economy towards potentially more lucrative (but also more risky)

[6] FAOSTAT: available at www.fao.org/es/ess/faostat/foodsecurity/index_en.htm

export markets to meet food requirements through market-driven commercial imports in response to supply deficits as required, remain controversial. The restricted landholding size (or none at all) is a major constraint facing the rural poor, and land poverty remains a key proxy for chronic poverty, vulnerability and hunger in rural India.[7]

The slow progress on food security and nutrition related targets means there is an urgent need to create more effective policies and programmes across multiple sectors.

1.3 The National FIVIMS Project

Box 1.3 Objective of the Global Food Insecurity and Vulnerability Information and Mapping Systems Initiative:

The global FIVIMS initiative aims to integrate and improve existing data systems and analysis (at global, national and sub-national levels) to ensure the availability, quality, relevance and utilization of reliable, timely and accessible information on food security and vulnerability. This is expected to enhance greatly the effectiveness of policies and programmes across sectors and thereby accelerate efforts to eradicate extreme poverty and hunger.

Both the central government and the states recognize the importance of ongoing development and refining national and state level poverty and human development monitoring systems in ensuring evidence-based policy initiatives and investments. However, no single organization within the government or in the non-government sector collects or brings together all the information that would help to identify food insecure and vulnerable groups, their locations and the underlying causes of persistent hunger.

In 2003, the National Ministry of Food, Consumer Affairs and state departments of Food and Public Distribution, along with the support of FAO, launched a pilot project to support Food Insecurity and Vulnerability Information and Mapping Systems (FIVIMS) in the two states of Orissa and HP.[8]

1.4 Study Objectives and Methodology

This study, *Understanding the Dynamics of Food Insecurity and Vulnerability in Himachal Pradesh,* was undertaken by the Government of Himachal Pradesh (GoHP), FAO and Himachal Consultancy Organisation LTD (HIMCON) from 2004 to 2005. The study began as an attempt to develop a framework for establishing an information system to monitor food insecurity and vulnerability in the state. It had two principle objectives: (i) to generate initial findings relating to core FIVIMS questions including who are the food insecure and vulnerable? where are they located? why are they food insecure or at risk of becoming so? And, which potential policy options could improve present and future food security through reduced vulnerability? (ii) to make recommendations toward identifying key indicators that could be monitored to better inform policy processes aimed at improving food security for vulnerable groups.

[7] In India, it is estimated that 60 million rural households are landless while a further 250 million own less than 0.2 ha. Only 3.9 percent of households own land greater than 4 ha. Also, it should be stressed that women comprise a disproportionate share of the landless and rarely hold legal rights to land.

[8] Phase One was launched in September 2003 while Phase Two was completed in 2006.

1.4.1 Towards a Framework for Livelihood and Vulnerability Analysis

In recent years the concepts of 'livelihoods' and 'vulnerability' have become increasingly central to the development agenda. While the livelihoods approach offers a people-centred, multi-sectoral and holistic conceptual framework for understanding the complexities of real lives, the concept of vulnerability covers the results of unexpected blows and people's efforts to manage the risks they face. The Sustainable Livelihood Approach (SLA) looks at how people combine their tangible and intangible assets to reach their livelihood objectives and how their success is mediated by policies and the institutional environment within which they live. It also examines the influence of the shocks and trends to which they are exposed (DFID, 1999). The SLA furthermore connects micro, meso and macro level agendas and focuses on promoting a participatory and multi-stakeholder approach to data collection and analysis.

1.4.2 Livelihood Approach to Vulnerable Group Profiling

Vulnerable groups are made up of people with common characteristics who are likely to become or remain food insecure in the near future. To enhance the value of data for policymakers and planners, people are strategically clustered into groups on the basis of certain shared characteristics.[9] Vulnerable group profiles can therefore indicate who and how many people are vulnerable, where they can be found and why they are vulnerable. A summary of the VGP approach is provided in Box 1.4.2 below.

Box 1.4.2 What is Vulnerability Group Profiling?

Vulnerable Group Profiling (VGP) is used to analyse the multiple factors underlying the food insecurity of relatively homogenous groups: their assets, external factors that affect their lives, their own actions, the resulting intermediate outcomes and their ultimate food security status.

The main purpose of VGP is to answer the following questions:

1. Who are the vulnerable people?
2. Where are the vulnerable people?
3. How many people are vulnerable?
4. Why are people vulnerable?
5. What can be done to reduce their vulnerability?

The VGP is a simple and relatively low-cost tool for building an overview of vulnerability and food insecurity grounded in local knowledge.

The basic methodological framework consists of four steps:

- *Review of existing data.* Qualitative and quantitative with attention to significant information gaps.
- *Identifying main vulnerable livelihoods.* National/sub-national multi-stakeholder workshops to facilitate identification and consensus regarding livelihood sub groups and selection of communities.[10]

[9] While the 'clustering' method has proved extremely valuable in providing a broad-brush picture of vulnerability of great strategic value to enhancing policies and programmes, it does not substitute disaggregated microanalysis required for participatory development activities at the local level.

[10] **Purposive** sampling is a less resource intensive substitute for *random* sampling and involves the use of key

- *Community level qualitative research.* Key informant interviews, focus group discussions and in-depth semi-structured interviews with 'typical' households within each livelihood sub group. Focus group discussions are held with different groups of women and men to ensure optimum sensitivity to social differences. Semi-structured interviews are based on questions drawn from a '*Minimum Food Security Information Set.'*
- *Validation.* Again, national/sub-national multi-stakeholder workshops to validate findings and explore potential policy implications. Dialogue includes district, state and national level workshops.

To refine the analysis of people sharing common livelihood systems, sub groups are identified within each livelihood group and organized along a 'vulnerability continuum.'[11] The most important criterion used for livelihood-focused VGP is income sources (often closely associated with location on the basis of relatively homogenous livelihood/agro-ecological zones). This tool helps to convey the relative degree of vulnerability of different sub groups and the key characteristic of each. These characteristics can include asset base e.g. land access, geophysical characteristics of physical assets, possible alternative livelihood strategies, diet and nutritional status.

The VGP methodology provides a multi-tiered and multi-stakeholder approach to data collection. Each level can potentially provide information that is unavailable at other levels, and the iterative process of information exchange and sharing in turn contributes to greater consensus of understanding and analysis among stakeholders.

Integrating livelihood based, qualitative VGP data with quantitative data already collected by the public administration is a key challenge. A minimum food security information set was useful for guiding the initial organization of complex qualitative data and facilitating its supplementation by existing quantitative data sets.

1.4.3 Sampling

Field data collection was conducted in four districts: Bilaspur - lowland, Chamba - midland, Kangra - highland and Kinnaur - alpine (tribal district). The study focused on a number of specific livelihood groups following workshops with key stakeholders (representing government, civil society, community leaders, etc.). The following five livelihood groups were identified: (i) subsistence farming households; (ii) marginal, commercial farming households; (iii) agricultural labouring households; (iv) migratory labouring households (non farm); and, (v) pastoralist tribal households.

1.4.4 Main Instruments for Primary Data Collection

Data collection instruments were designed to ensure the availability of both quantitative and qualitative data. The initial research was conducted at the village level and then at the household level. Focus group discussions were held at the village level to develop an understanding of the key characteristics of selected livelihood groups and the most significant vulnerability and food security issues they face. These included access to public distribution systems (PDS) and concerns regarding health and sanitation, risks and shocks (covariate and idiosyncratic), social capital and impact of public policies and programmes. Wherever

strategic variables (such as agro-ecological zone, distance of communities from a main road, etc.).

[11] See Lovendal, Knowles and Horii (2004) for further detail.

possible, researchers spoke to women and children separately. They then used structured questionnaires as a basis for household interviews with representatives of each livelihood group to obtain further detailed information on income, expenditure, consumption, calorie intake, health, sanitation and feeding practices.

2. Data on Poverty, Food Insecurity and Vulnerability in Himachal Pradesh

2.1 Data Collection Initiatives Relevant for FIVIMS

Many central ministries and departments at state level collect data and publish reports relevant to food security.[12] NGOs, UN agencies, bilateral agencies and the members of academia also carry out data collection and reporting activities relevant to FIVIMS, but there isn't a central data base so a systematic review is problematic. Examples of key data collection efforts are the National Sample Survey (NSS) and Below Poverty Line (BPL). See Annex 1 for a brief overview of the key data collection efforts in HP.

2.2 Himachal Pradesh: Socio-economic Background

HP covers 1.69 percent of India's total geographic area, and it accounts for approximately 0.59 percent (6 million people) of the population. The population is distributed unevenly among the state's twelve districts with most people living in Kangra (India Census, 2001). Demographics are changing because of a falling death rate and rapidly falling birth rate, widely attributed to rising female literacy and the expansion of health facilities in recent decades. The state-wide urban population is 9.79 percent.

In the early 1960s, HP was characterized as 'one of the poorest and backward territories in the Indian Union'[13] because of its predominantly agrarian and subsistence economy. Since then, HP has undergone a structural transformation and has experienced a great reduction in the relative dependence on agriculture, both for total income and for generating employment. The state's GDP percentage share of agriculture was 28 percent in 1996 compared to 30 percent for India as a whole. Likewise, HP's education attainment is second only to Kerala and life expectancy at birth (64.5) is significantly higher than the national figure (60.3).[14]

Over the last 50 years, the state has made an important commitment to (and has effectively implemented) land reform and redistribution.[15] As a result, the Government claims there are virtually no completely landless households in the state, even though the average land holding size may be very small and the quality relatively poor in some cases.

The structure of the economy in HP has changed significantly with a declining share of the

[12] In addition to the Planning Commission, these also include: Ministry of Food, Consumer Affairs and Public Distribution (Department of Public Distribution); Ministry of Human Resources Development (Department of Woman and Child Development); Ministry of Agriculture, Fisheries, Forestry and Livestock; Ministry of Rural Development (Department of Panchayati Raj); Ministry of Urban Areas and Employment; Ministry of Health and Family Welfare; and Ministry of Social Justice and Empowerment.

[13] National Council of Applied Economic Research (1961)

[14] See GoHP (2002) State Human Development Report. Literacy rates have risen from 32 percent in 1971 to 77 percent in 2001 and observers have referred to the 'schooling revolution' in HP.

[15] Key land reform legislation includes (i) 1953: Abolition of Big Landed Estates and Land Reform Act; (ii) 1968: Transferred Tenants Protection of Rights Act; (iii) 1972: Tenancy and Land reforms Act; (iv) 1972: Ceiling on Land Holding Act; (v) 1974: Village Common Land Vesting and Utilization Act.

primary sector in SDP and a quadrupling share of the secondary sector.[16] The agricultural production pattern has increasingly moved away from farm-based production because of the mountainous terrain and harsh climate.

Table 2.2.1: Sectoral Composition of Net State Domestic Product in HP

Year	1970-71	1980-81	1990-91	2000-01
Primary Sector	58.74	47.35	37.66	27.37
Secondary Sector	16.59	19.59	24.59	32.50
Tertiary Sector	24.66	33.00	37.82	40.13

Source: Government of Himachal Pradesh (various issues)

Livelihood strategies have become diversified and are based on multiple incomes rather than on a narrow subsistence agricultural base (HP Development Report, 2002). The economic development has had a noticeable effect on poverty levels, which declined from 26.39 percent in 1973-74, to a mere 7.63 percent in 1999-2000 (GoI, 2002). This is considerably lower than the national poverty rate of 26.1 percent for 1999-2000 as highlighted in Table 2.2.2 below. It is, however, likely that part of this decline, particularly from 1993 to 2000, could be due to a change in methodology:

Table 2.2.2: Poverty Ratios in HP and India

	Himachal Pradesh			All India		
Year	**Rural**	**Urban**	**Total**	**Rural**	**Urban**	**Total**
1973-74	27.42	13.17	26.39	56.44	49.01	54.88
1993-94	30.34	9.18	28.44	37.27	32.36	35.97
1999-2000	7.94	4.63	7.63	27.09	23.62	26.10

Source: GoI, 2002

However, the household survey methodology applied throughout rural areas of HP by the state level Department of Rural Development suggests that an average of 27.6 percent of households are 'below the poverty line' (BPL) as presented below in Table 2.2.3. This compares with the national BPL average of 36 percent. The three poorest ranked districts are predominantly located in the highland area (less densely populated, less non-farm enterprise development and poorer infrastructure) of the state, with Chamba being almost twice as poor as any other district. In contrast, the lowlands are closer to the relatively developed urban centres of Punjab and Haryana, and have significant economic advantages. Likewise, educational attainment indices suggest that highland districts have lower attainment compared to lowland districts.

[16] Primary sector includes agriculture, livestock, forest and mining, etc. Secondary sector includes manufacturing, servicing and repairs, construction, etc. Tertiary sector includes trade and commerce, transport, storage and communications, etc.

Table 2.2.3: Poverty at District Level

District	Percentage of BPL Households	District Ranking
Predominantly Highland		
Chamba	61.72	I
Kinnaur	26.57	VI
Kullu	19.30	XI
Lahaul and Spiti	37.93	II
Shimla	33.67	III
Sirmaur	22.89	X
Mandi	-	VII
Predominantly Lowland		
Bilaspur	26.62	V
Hamirpur	24.17	VIII
Kangra	24.07	IX
Solan	27.44	IV
Una	19.06	XII
Total	**27.59**	

Source: Department of Rural Development, 1998

Overall, there has been rapid economic growth in recent decades, and the state is now considered middle income. However, a number of factors have restricted the growth potential of the state and resulted in slower industrial growth than has been the case with neighbouring states such as Punjab. Importantly, HP relies heavily on external markets for the import of raw materials and disposal of finished goods. Distant markets result in high transport costs that undermine competitiveness, so most industrial activities take place in pockets that border neighbouring states.

In terms of occupational structure, census data shows the proportion of primarily cultivating households has been steadily decreasing over time, from 80 percent in 1961 to 65 percent in 2001, although this still remains the most common occupation in the state (Office of the Registrar General and Census Commissioner, 2001).

2.3 Agricultural Trends, Food Availability, Markets and Access

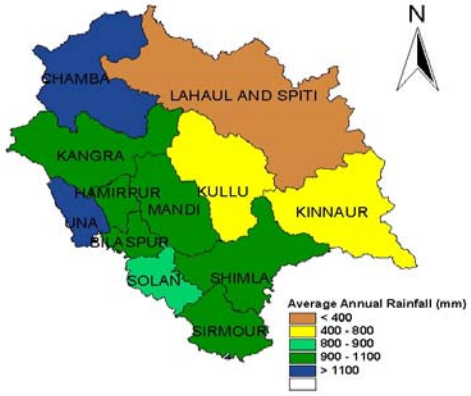
The state is remarkably heterogeneous and has diverse agro-climatic conditions both across and within its 12 districts. HP divides into four agro-ecological zones: low, midlands, highlands, and the cold/dry alpine zone as presented below in Table 2.3.1:

Table 2.3.1 Key Characteristics of the Four Agro-Ecological Zones of HP

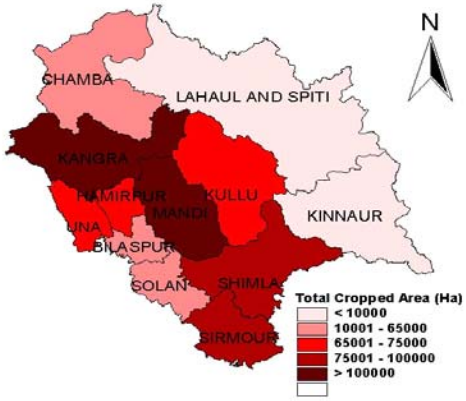
Zone	Elevation (masl)	% of State Total Area	% of Crop Area	% of Potentially Irrigated Area
Zone 1. Lowland	350-950	16% (Una, Hamirpur, parts Kangra, Bilaspur, Mandi, Shimla, Solan, Kullu and Sirmaur)	38% (maize, wheat, mustard, potato, paddy, gram)	39%
Zone 2. Midland	950–1500	22% (Parts of Solan, Sirmaur, Kullu, Bilaspur, Mandi, Chamba and Kangra)	41% (maize, wheat, paddy, mash, barley, ginger)	45%
Zone 3. Highland	1500–2500	23% (Parts of Shimla, Kullu, Mandi, Solan, Sirmaur, Chamba and Kangra)	19% (wheat, barley, millet, buckwheat, amaranth, maize, seed potato, apple)	8%
Zone 4. Alpine	> 2500	39% (Kinnaur, Lahaul-Spiti, Pangi, Bharmaur, parts of Chamba)	2% (wheat, barley, buckwheat, amaranth, seed potato, mash, almond, apple)	-

Source: GoHP, 1994

Map 2.3.1: Himachal Pradesh: Average Annual Rainfall at District Level



Map 2.3.2: Himachal Pradesh: Total Cropped Area at District Level



For zone one, rain fed farming accounts for more than 87 percent of total operational holdings. The main crops are grains with only negligible fruit production. Zone two is the most significant farming area with the production of fodder trees being an important component of farm forestry. Field crops are diversified and include cereals, pulses, oilseeds, fodder crops and sugar cane, as well as vegetables. Of zone three, only 7.8 percent of the total crop area is irrigated. The area experiences severe winters with heavy snowfall. However, there is tremendous potential for apple cultivation, seed potato, off-season vegetable, honey production, mushrooms and dairy. Moreover, the zone leads in the production of seed potato, which is an important cash crop. Zone four, the largest zone in the state and most mountainous area, includes the tribal areas of the state. The zone is covered with snow for about six months of the year, and due to the lack of precipitation, crops can only be grown where there is *Kuhl* irrigation.

There are two main subsistence crop seasons in the state: *kharif* and *rabi. Kharif* crops are grown from June to September and the most significant crops are maize and rice (with the exception of alpine areas). The main *rabi* crops are wheat and barley, grown from October to May.

HP continues to have a relatively low per capita value of agricultural produce (Rs. 1187 per capita) as compared to neighbouring states such as Punjab where it is Rs. 5248. There are several underlying factors: infrastructure (both development and maintenance) is highly challenging given the mountainous terrain and harsh climatic conditions;[17] steep gradients restrict the scope for flow irrigation (lift irrigation is relatively more expensive to develop and maintain); agriculture is largely dependent on the unpredictable NW monsoons; and, high ecological and capital costs associated with the development of hydropower potential have undermined growth.

Continued land redistribution policies have led to a high prevalence of small/marginal plots. For instance, public land lease and tenancy regulations do not allow farming on large areas. The state-wide average operational landholding is 1.2 ha., with 84 percent of farmers owning less than 2 ha., and the remaining 16 percent owning 2 to 10 ha. Scattered holdings present further challenges. Yet, in terms of per capita food grain production, HP remains ahead of the national levels (268 kg grain for HP and 203 kg grain for India). Historically, the state made fewer gains from the green revolution as compared with neighbouring states such as Punjab, Haryana and Uttar Pradesh due to the high dependence on rain fed cultivation and mountainous topography. Per ha. yields of paddy, pulses and (especially) wheat and potato remain significantly below the national average. Maize is the only crop where the state appears to have a relative comparative advantage.

However, there is broad based consensus that the heavy focus on food crops within the agricultural sector leaves little growth potential. Efforts to bring about the large-scale commercialization of agriculture in HP were first initiated during the 1960s with apple cultivation, where the late harvest season associated with higher altitude provided a competitive edge in national markets. The area under apple cultivation has increased from 400 ha. in 1950-51 to 84,000 ha. in 2003-04. Apples dominate fruit cultivation accounting for 55 percent of all production, and 92 percent of the total value of all fruits grown in the state. Fruit and vegetable cultivation has emerged as a significant livelihood strategy, delivering levels of income that far exceed those associated with cereal-dominated production, for example. Table 2.3.2 below highlights the relative profitability of specifically non-cereal/commercial agricultural activities in different zones of the state. Commercialization appears to be most profitable in zone 3 (high hills, temperate and wet) and zone 2 (mid hills), although off-season vegetables and seed potato are also profitable in zone 4 (mountainous and dry), especially Kinnaur District.

[17] Ibid

Table 2.3.2: Profitability of Different Farming Activities by Zone

Fruits	Vegetables	Floriculture	Mushroom	Rabbit Farming	Seed Potato
Zone 1: Low Hills / Plains					
	-		-		-
Zone 2: Mid Hills					
				-	-
Zone 3: High Hills / Temperate Wet					
Zone 4: Mountainous / Dry Alpine					
		-	-	-	

Vertical lines: Least Profitable. Horizontal lines: Reasonably profitable. Full coloured: Highly profitable.
Source: Agro-economic Research Centre, HP University, Shimla.

Vegetable production has been growing since the 1970s, with exports to other states reaching a total value of approximately Rs. 500 million in 2002-03. As a result, there has been an increase in farm mechanization and use of fertilizers and pesticides. Floriculture (with high associated returns) has only been adopted by relatively big farmers with greater capital, labour availability and marketing capabilities.

2.4 Food Consumption, Utilization and Nutritional Status

Malnutrition both undermines economic growth and perpetuates poverty, as a result of direct productivity losses from poor physical status, indirect losses from poor cognitive function and losses owing to increased health care costs. According to the National Family Health Survey (NFHS-3, 2006), on the basis of anthropometric indices, the nutritional status of children is such that 36 percent of children under three in HP are underweight (the national average being 46 percent). Nearly 59 percent of children under five and 41 percent of adult women are anaemic. An overview of key indicators relating to specific health and nutrition outcomes is provided below in Table 2.4.1.

Table 2.4.1: Relevant Indicators for Individual Nutrition Level Outcomes

Indicator	Year	HP	National
Infant mortality	2005-06	36	57
Percentage children 0-3 underweight	2005-06	36	46
Percentage infants 12 – 23 months fully vaccinated	2005-06	74	44
Percentage households using piped drinking water	2005-06	65.1	42.0
Percentage households with toilet facilities	2005-06	45.6	44.5
Per capita expenditure on medical, public health and family welfare (Rs)	1997-98	209.9	99.1

Source: Planning Commission of the Government of India, 2002 & Ministry of Health & Family Welfare, 2006

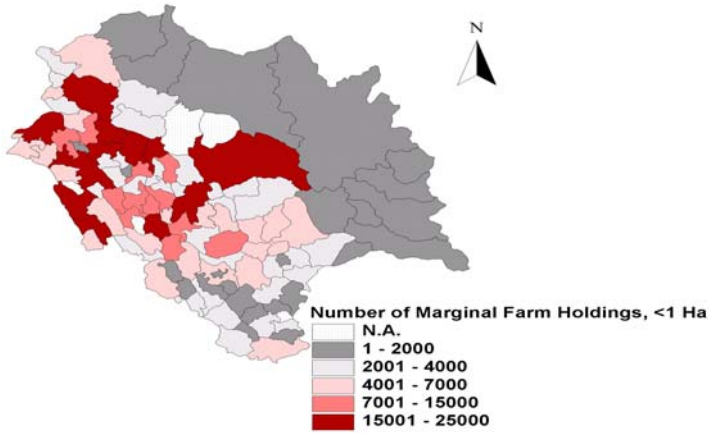
3. Findings and Key Conclusions

The following section explores the main findings and conclusions for each of the selected livelihood groups outlined above.

3.1 Subsistence Farming Households (SFHs)

Land reforms that emphasize 'land to the tiller' and land redistribution have encouraged the predominance of small scale and marginal farming households in the state. While a shift from subsistence farming (i.e. cultivating for own consumption) to cash crops has provided opportunities from a relatively low asset base for many small-scale farmers, the transition has proved less viable for others. Key determining factors that may help to explain why some farmers have failed to benefit from the gains associated with effective growing of cash crops include: (i) marginal and poor quality land; (ii) mountainous topography; (iii) the absence of irrigation facilities or opportunities; and (iv) the relative isolation of farming communities.[18]

Map 3.1.1: Number of Farm Holdings Less Than 1 ha. (at Tehsil Level)



As a result of low farm productivity, incomes from different household members and other sectors play an increasingly crucial role in ensuring food security. Conversely, marginal farming households with low diversification, poor, non-irrigated land and no reliable secondary income strategies are becoming increasing vulnerable.

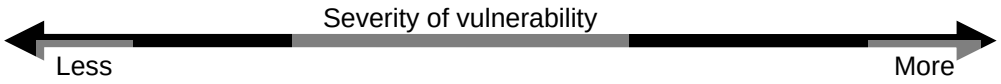
Given the considerable agro-ecological diversity found within HP the study has further divided this livelihood into four sub-groups: (i) lowlands; (ii) midlands; (iii) highlands; and (iv) alpine zones.

As a result of the diversity among agro-ecological zones, and a corresponding variation in the crop calendar, crops, levels of productivity, infrastructure, markets, etc., it is necessary to consider the particular situation faced by each sub-group separately. While SFHs generally operate viable farm-based livelihoods (in terms of cost recovery), annual incomes still tend to be insufficient to meet all necessary household consumption requirements. Data suggests that the average net farm income for SFHs depending mainly on cereal production is

[18] One ha. of non-irrigated land is considered to be the cut-off point below which a household with no other major source of income will be vulnerable to food insecurity. Where farmland is irrigated, the cut-off figure is 0.5 ha.

approximately Rs. 15,000 pa, 64 percent of which is used for food related expenditures.

Table 3.1.1: Vulnerability of SFHs



Zone	Lowland/Valley	Midland	Highland	Alpine
# of months covered by food production	4-5 months (whole year for irrigated production)	Approx. 7 months	5 months	3-5 months

Zone One (Lowland/Valley)
The average landholding size for this group is 0.85 ha. The majority of SFHs practice rain-fed agriculture and many households also have buffalo and/or cattle. The farm production mainly consists of wheat and maize together with some potato, pulses and vegetables for their own consumption. The food grain production can, without irrigation, cover approximately four to five months of an average household's requirement, while irrigated production frequently covers the basic food requirements for a whole year.

It is crucial for some households in this zone to have access to alternative income sources. The social service infrastructure tends to be well functioning and there is relatively good access to the state capital and better off southern plains. During the lean season, coping mechanisms include informal loans, engaging in low-paid agricultural or construction related labour, share cropping and seasonal migration. Community support networks also play a key role during times of need.

Zone Two (Midland)
In this zone, the average size landholding is 0.7 ha. The zone constitutes 45 percent of the state's total irrigated area (21 percent of total geographical area). The major crops are maize, paddy, wheat and vegetables. The cultivation of vegetables gives the households higher returns per unit of land and labour input than traditional cereal crops. SFHs within this zone tend to have livestock, bicycles, radios, agricultural implements, etc. Farm production generally meets household food requirements for about seven months a year. Despite relatively good overall food security, the vulnerability of low caste groups and women remains a concern due to persistent social inequalities.

Social and physical infrastructures in the zone are relatively good, and households tend to have access to formal financial services. As alternative income sources, households generally engage in artisanal work, labour migration (mines, orchards, etc.) and common property resources (women, in particular, sell non-timber forest products). Self-help groups have played an increasingly important role through establishing joint savings schemes and financing income generating activities.

Zone Three (Highland)
In this zone, the average landholding is 0.6 ha., predominantly terrace farming and with irrigation in only 8 percent of the total area used for crops. The major crops are cereals (maize, wheat, and barley), pulses, potatoes and oil seeds, even though the best agricultural returns in this zone come from fruit production. The households usually own basic farm tools

and a radio but rely on rivers and springs as the main sources of drinking water. They do not have private toilet facilities. SFHs in this zone generally produce food sufficient to meet basic household needs for five months of the year.

Due to difficult terrain and low density of roads, road connectivity is not always good and health infrastructure is poor. The credit-deposit ratio of banks in the zone is less than 15 percent with many people relying on local moneylenders. With the low returns associated with subsistence farming, casual wage labour (especially mines, orchards and construction), sale of non-timber forest products and migration all play a key role in ensuring alternative income sources for households. As households increasingly rely on non-farm casual labour, women take on more work on their own farms.

Zone Four (Alpine)

Zone four is mostly rocky cold desert mountains and snow-covered lands. The area used for crops accounts for only 2.6 percent of the total area used for crops in the state. However, this zone accounts for nearly 40 percent of the total geographical area of the state, and it is covered in snow for about six months of the year. Terrace farming is common and average landholding is less than 0.5 ha. The main crops grown are wheat, maize, barley, potato, peas, *mandua* and *rajmas*. The farmers also earn income from goats and sheep rearing. Farm production is usually sufficient to meet the basic household needs for about three to five months.

Road connectivity and health infrastructure is poor due to difficult terrain, although considerable public investments have been made to improve the situation in recent decades. Many areas are cut off by snow during the winter. Access to formal credit is very limited with widespread dependency on informal moneylenders. During the winter, men often migrate to other districts in the state to work as agricultural and construction labourers. Other coping strategies used by households in this zone are much similar to the strategies used in the other zones, except that in this zone women produce woollen items, especially during the winter months.

3.2 Marginal Commercial Farming Households (MCFHs)

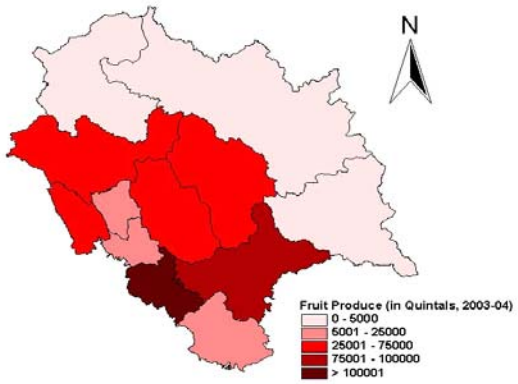
The agro-climatic conditions found in HP are suitable for production of a wide variety of cash crops including fruits (temperate and tropical citrus), vegetables and floriculture. Various regions in the state have begun exploring the possibility of producing vegetables and fruits that mature during what is the off-season elsewhere in the country, hence providing a national marketing edge. In general, the profitability of cash crops has resulted in large-scale shifts from traditional field crops to commercial agriculture, with higher incomes per unit of land substantially enhancing household food security. Supportive public policies[19] have encouraged such advances in the commercial agricultural sector. However, factors such as agro-climatic suitability, know-how, availability of land and infrastructure (e.g. roads and markets), etc., affect the ability of individual farming households to take advantage of such opportunities.

About 88 percent of orchard farmers in HP are estimated to be MCFHs (54 percent total fruit production area). The farmers in HP are mainly caste Hindus, with scheduled castes generally having smaller holdings. The state, however, offers higher subsidies to Scheduled Caste (SC)

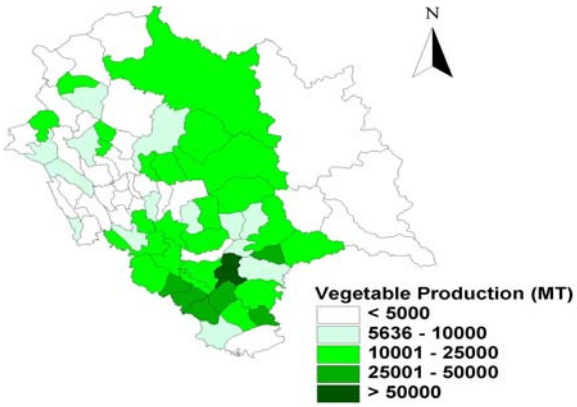
[19] While in the early planning stages public emphasis was on increasing production, policy focus has shifted recently to marketing and quality management.

and Scheduled Tribe (ST) farmers than to marginal farmers. Marginal farmers are defined as owning less than one ha. of land, although the study found among this category that actual average holding size is only 0.4 ha. Moreover, not all areas in the state are equally conducive to high-profit commercial agriculture. MCFHs are additionally burdened by relatively high costs of production per unit as compared to larger commercial farmers, with farmers tending to have lower resource bases and capital assets, weaker post-harvest skills and marketing knowledge, etc. As a result, MCFHs were found to have low risk-bearing capacity such that even relatively small production shocks (climate, pests, price variations, etc.) can destabilize livelihoods and bring about food insecurity. Nevertheless, MCFHs tended to be better off than SFHs, in terms of assets, social indicators and livelihood capabilities.

Map 3.2.1: HP Fruit Production at District Level



Map 3.2.2: HP Vegetable Production at Block Level



A key challenge facing MCFHs involves marketing their produce. This is because the small scale of production, combined with a low asset base, does not generate sufficient economies of scale or income for adequate investment in grading, packing and transport. Instead, MCFHs rely on intermediaries who link farmers to markets, but who are also frequently in a position to establish exploitative relations through purchasing produce at well below real market value.

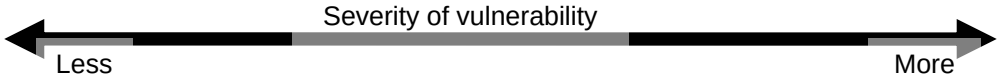
MCFHs depend on forest and common property resources for mulching materials, fodder, etc.

The adverse impact of chemical fertilizers and pesticides on bio-diversity and the safety of water sources is an increasing cause for concern (e.g. for bee keepers due to high bee mortality).

Given the restrictions facing MCFHs in accessing formal banks, debt (often to meet basic consumption needs) is mainly taken from commission agents or input suppliers. In many cases this leads to exploitative arrangements such as farmers having to engage a particular agent to sell produce. MCFHs also tend to compromise the quality of the diet rather than the quantity of consumption during times of hardship. However, consumption of alcohol and cigarettes may be reduced.

For the purposes of the study, the category of MCFHs was divided into the following sub-groups: (i) vegetable cultivators with landholdings less than 0.5 ha.; (ii) fruit cultivators with landholdings less than 0.5 ha.; and (iii) fruit and vegetable cultivators with landholdings less than 0.5 ha.

Table 3.2.1: Vulnerability of Marginal Commercial Farmer Households



Vegetable and fruit cultivators	Fruit cultivators	Vegetable cultivators

Vegetable cultivators with landholdings less than 0.5 ha.

The average landholding of vegetable MCFHs was found to be approximately 0.6 ha. of which only 0.4 ha. is under cultivation and 50 percent is irrigated. Irrigation is generally considered a pre-requisite for profitable vegetable cultivation on small holdings. Trees (fruit, fodder and fuel) are often planted on bunds on fields and around the homestead.

As a result of the perceived risks associated with fruit production (including unpredictable climate, dependency on a single harvest per year, etc.), MCFHs are increasingly exploring vegetable cultivation, either as intercropping of vegetables with orchard trees or substituting a share of traditional field crops. Data collected confirmed the profitability of vegetable production relative to traditional field crops (average MCFH income associated with vegetable production ranging from Rs. 10,000 – 30,000 pa). One of the main advantages of vegetable production in mid and high hill areas is that the harvesting time makes produce available to the plains 'off season', thereby establishing a unique niche that ensures high demand and price.

The study suggests, by comparing only fruit and vegetable cultivation, that the MCFHs involved in the latter tend to face higher food insecurity. There are several reasons for this including: (i) vegetable farmers typically start with a lower capital base and less know-how, having been unable to exploit fruit production opportunities because of high start-up costs and a long gestation period; and (ii) fruit markets tend to be better established and have more price stability than emerging vegetable markets. As a result of lower incomes, MCFHs focused on vegetable cultivation and usually own three to five local breed cows and possibly some sheep or goats.

As coping strategies, vegetable cultivators tend to opt for non-farm jobs such as road

construction. Other common strategies include taking up loans in kind and cash for consumption. Under extreme conditions of food scarcity, the quality of food is compromised rather than the quantity (so gross caloric food insecurity is rare among commercial farmers). The consumption of liquor and cigarettes also declines during the period of food insecurity.

Fruit cultivators with landholdings less than 0.5 ha.
For fruit MCFHs, the average orchard size is approximately 0.8 ha. land with 0.75 ha. typically under cultivation (orchards occupying about 0.5 ha. and field crops 0.25 ha.). Only 20 percent of the cultivated areas are irrigated.

Due to higher temperatures, there has been a substantial reduction in such things as apple plantations because apples require a certain minimum chilling period. For example, the apple growers of Rajagarh area of district Sirmour are now opting for other fruits such as peach as the higher average temperature climate is no longer suitable for apple crops. The higher temperatures also increase the incidence of insects and pests.

Similarly, farmers have complained of a change in rainfall patterns. Rain is needed during the flowering stage in apple plantations, but unpredictable rainfall patterns have deprived the orchards of moisture resulting in poor fruit setting. In the past eight years, farmers in Karsog block of district Mandi have sold their orchards. However, in the last two years the rains have been timely and productivity is normal. Timely rainfall is particularly important at low heights where the soil does not retain moisture, and particularly where there is no irrigation.

Similar to vegetable cultivators, fruit cultivators also use farm and non-farm wage labour as a coping mechanism. Among fruit farmers, the farm labour includes taking up skilled jobs related with fruit farming itself (see the chapter on farm labour). The low hill marginal fruit farmers migrate to mid- or high-hill plantations to take up skilled jobs (as the production and marketing season in low hills is earlier than mid- and high-hills such opportunities for work in two places are common).

Fruit and vegetable cultivators with landholdings less than 0.5 ha.
Incomes can rise to Rs. 50,000 where fruit and vegetables are cultivated effectively together and under optimum conditions, even on landholdings of 0.5 ha. Where floriculture had been adopted, incomes were found to be even higher.

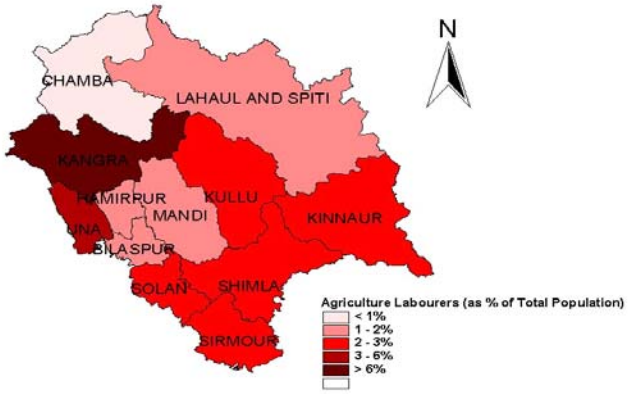
However, there is no such advantage for farmers in low hill regions where competition with large-scale commercial production in Punjab and Haryana is a major disincentive.

3.3 Agricultural Labouring Households (ALHs)

ALHs are defined in the state census as those that derive more than 50 percent of their total household income from wage-based manual labour in the agricultural sector. As a result of progressive land policies over the last five decades, HP is one of the few states in India that does not have a significant proportion of landless labourers seeking work in the agricultural sector. Agricultural labourers tend to be located in fertile plains where demand from commercial farmers for additional farm workers is relatively high. In recent years, as land has become more fragmented, and where cash crop cultivation may have become less profitable, poverty has driven an increasing number of individuals to migrate away from the farm (for all or part of the year) in search of enhanced incomes and greater livelihood security as labourers on commercial farms. In addition, the recent growth of the more labour intensive commercial

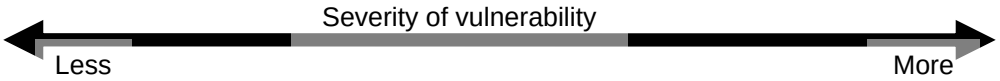
agricultural sector in HP has attracted migrant workers from other states and Nepal. Migrant ALHs tend to receive poorer remuneration than workers of local origin. The vulnerability of migrant ALHs is further exacerbated by their inability to access basic public entitlements such as food subsidies from fair price shops. As a whole, ALHs constitute one of the poorest, most vulnerable and food insecure livelihood groups in HP.

Map 3.3.1: Percentage of Agricultural Labourers in Himachal Pradesh



During the study, three sub-groups of ALH were identified: (i) labourers employed in subsistence agriculture; (ii) unskilled labourers in commercial agriculture (the majority of migrant labourers); and (iii) skilled labourers in commercial agriculture.

Table 3.3.1: Vulnerability of Agricultural Labouring Households



Skilled labourers in commercial agriculture	Unskilled labourers in commercial agriculture	Labourers employed in subsistence agriculture

Labourers employed in subsistence agriculture

Households within this sub-group were generally considered the most vulnerable and food insecure because of low remuneration and few available days of employment. These labourers also tend to be local and of lower caste with virtually no land of their own, but some are seasonal migrants from poorer neighbouring states. ALHs employed by subsistence farmers are mainly involved in sowing and harvesting activities for paddy, wheat, potato and sugarcane. Wage levels are Rs. 65 to 70 for men and Rs. 50 to 55 for women despite the fact that Rs. 65 is the minimum statutory wage for either sex. Often workers are paid in kind (grains) for an activity on a given area rather than cash (daily rate). A lack of non-farm income for seven or more months of the year, leads to chronic poverty and poor household nutritional and health status.

A typical diet (two meals a day) mainly consists of rice, wheat, maize, pulses and vegetables. There is little dairy in the diet, and meat and alcohol are consumed only at festivals. During

difficult times, pulses and vegetables are reduced or excluded from the diet. After a shock, social capital and community support mechanisms play a key role in coping, but poor targeting of public initiatives means that many poor households are not covered. However, public works employment programmes (including food for work) are considered important at certain times of the year. Other coping strategies for this sub-group are informal money lending, often on an exploitative basis, migration to other areas and women seeking work herding cattle, for example, or collecting fuel and fodder.

Unskilled labourers in commercial agriculture

Migrant labourers within this sub-group are vulnerable because of remittances, a lack of access to state subsidies and poor living conditions. Migration can take place between districts (e.g. from less commercial districts such as Sirmour and Chamba), between states and between countries (Nepal). ALHs employed by commercial farmers are mainly involved in fruit and vegetable cultivation, and are recognized by farmers as providing a crucial input given the high labour intensity at certain times necessary for competitive production. Labour demand peaks during rainy seasons (sowing of vegetables and also harvesting and marketing many fruits takes place in July and August). During the winter months, there is less demand for farm workers for vegetable cultivation. For fruit cultivation there is less labour demand from November to January. Wage levels are between Rs. 80 to 125 per day but are still significantly lower than for skilled labourers. Demand for labour is for about eight months of the year. A share of wages may be paid in kind.

In addition to some farming on their own land (where available) incomes may be supplemented by non-farm work if available (particularly public road works for near minimum statutory wage of Rs. 65). Ongoing land fragmentation reduces possibilities for favourable sharecropping arrangements.

The Nepali labour force faces discrimination in the form of lower wages, poorer food sharing arrangements with landlords and less access to non-farm incomes. They have no access to public health facilities or social security or subsidy provisions and have, as a result, a poorer nutritional and health status.

Skilled labourers in commercial agriculture

This sub-group are characterized by their specialized commercial farm skills, which may include sowing, pruning, spraying, picking, packing and grading, etc. Farmers prefer to hire local labour for skilled purposes on the assumption that they are more familiar with local agricultural conditions and have acquired expertise working on their own farms. Wage rates are high (approximately Rs. 125 per day plus a good daily meal), and workers can take a contract with more than one farm during peak periods. Owning land also provides an important supplementary income source.

Labourers with an improved financial status have fewer dietary compromises than unskilled workers. They consume more fresh vegetables (plus meat and dairy). An increase in commercial production would likely increase employment opportunities. The growing interest in floriculture is also likely to generate employment. However, vulnerability to both covariate (e.g. drought) and idiosyncratic (e.g. illness or death of main worker) shocks are still high and few households have access to viable insurance services.

3.4 Migratory Labouring Households (Non Farm)

Migrant wage labourers constitute an increasingly significant livelihood group in HP. They are found mainly in urban areas where the expansion of sectors such as construction and tourism have promoted demand for non-agricultural workers. While having considerable diversity as a group, this livelihood category also tends to have low income levels compared to others, causing greater food insecurity and vulnerability. As economic migrants (as with those in the agricultural sector) living away from their places of origin and extended families and community networks, they also tend to face specific challenges e.g. problems in accessing state programmes and services as well as institutions. The population associated with this livelihood category is mainly clustered in certain pockets such as urban centres, large power projects, mining areas and industrial belts. Migrant workers also find employment on government road construction and hydro-power generation projects.[20]

It is difficult to estimate the size of the economic migrant population at any given time owing to the continual movement of workers. In 1991, official surveys generated a figure of approximately 1.8 million migrants state-wide. This figure includes migration of newly weds, often women from outside the state, to accompany spouses (57 percent) and all professional categories. Economic migration is most commonly intra-state (rural to urban) or inter-state (mainly Bihar and U.P.), but also includes Nepali workers.

While urbanization has been slower in HP as compared to other states, historical data suggests a steady rise in the total urban population from 200,000 in 1961 to 455,905 in 2001.[21] Despite the fact that economic migrants share many of the same vulnerabilities, stakeholders stressed the fact that there are specific differences between economic migrants from various places and involved in differing livelihood activities.

A key aspect of food insecurity and vulnerability for many sub-groups in this livelihood relates to the seasonal reduction of income. As a result of harsh winters, there are far fewer employment opportunities from January to March. Similarly, the heavy monsoon rains experienced in July and August restrict incomes significantly.

Virtually no households benefit from publicly subsidized commodities such as cereal, sugar and kerosene. There are numerous reasons for this including such factors as choosing to leave their ration cards behind with their families, the cumbersome process associated with card transfer, the fact that many Indian and non-Indian households may not have a card, the inability to purchase a monthly quota at one time, etc. Female migrant labourers tend to consume less dairy (and meat) products compared to men. Unfortunately, the imbalance is particularly acute during pregnancy because of the loss of female earnings and reduced household income.

The diet of most migrants was found to contain a high proportion of staples (rice and *roti* with *dal*) with vegetables consumed an average of three times per week (even then these often consisted of only potatoes and onions) and meat only one to three times per month. Tea is commonly drunk at least three times a day. Among single male migrants, food preparation tends to be undertaken collectively. Himachali labourers eat local wild vegetables. Alcohol

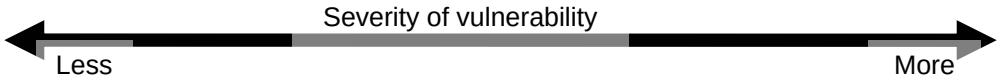
[20] The majority of unskilled labourers are not employed directly on such government projects, but rather are brought in through a process of contracting and sub-contracting which seeks to avoid all labour and inter-state migration laws.
[21] Dept of Statistics, GoHP

consumption and smoking of local cigarettes is also common among male (non-Muslim) migrants.

In general, the health status of migrant workers from outside HP was found to be worse than that of the local population. The living conditions of migrant workers are a key concern, often consisting of temporary shacks and without provisions for safe drinking water and sanitation.

It was agreed that sub-groups should be defined to focus vulnerability analysis. The sub-groups are: (i) skilled workers; (ii) unskilled workers; and (iii) urban porters. In some cases it was useful to distinguish between Himachali and non-native migrants especially in relation to the time spent away from home. Himachali migrants often migrate for eight to ten months a year, returning to their villages during the off-season, while non-native migrants rarely return to their places of origin.

Table 3.4.1: Vulnerability of Migratory Labouring Households (non farm)



Skilled migrant workers	Unskilled migrant workers	Urban porters

Urban porters

The number of Himachali porters in cities and towns is steadily increasing and is thereby increasing competition for labour. The majority of the Himachali porters migrate from Sirmaur and Bilaspur districts of HP and are found in urban areas throughout the state. Non-native porters include migrants from other states of India such as Jammu and Kashmir (J&K) and Bihar as well as a large section from Nepal. Migrant porters from J&K and many from Bihar are mostly men who migrate alone while their families pursue agro-pastoral livelihoods in villages. There have been fewer migrants from J&K in the last couple of years as the situation in their home state improves.

The work of urban porters such as, carrying heavy loads for tourists, local residents, shops and transporters, is related to the tourist industry and is seasonal. Their main source of cash income is from carrying loads, although most of them are also involved in some agricultural activities. The actual number of months spent as urban porters varies depending on the distance of migration from home, but on average is eight months a year. Men tend to migrate alone while their families remain in rural areas involved in agro-pastoral activities. Agriculture is mainly subsistence level but some cash income is also obtained from these activities. An increasing number of porters in urban areas have lead to greater competition for employment, but male porters still seem to make the minimum wage while the situation is unclear for female porters.

Unskilled migrant workers

Unskilled workers are involved in a wide variety of activities depending on the sector and site of work, ranging from quarrying, stone-breaking, running machines at chemical and clothing factories, carrying loads, cleaning, etc. Unskilled formal sector workers are unaffected by the season and, therefore, suffer less seasonal variation. However, in recent years climatic conditions such as cloudbursts have resulted in natural disasters that have claimed the lives of many migrant labourers.

Himachali unskilled informal sector workers and migrant unskilled informal sector workers tend to have lower incomes than others and were found to have the poorest dietary diversity and lowest levels of food intake. Malnutrition and anaemia were found to be common among children (81 percent and 67 percent respectively)[22] when migrant unskilled informal sector workers migrated with their families.

When only the men migrate, it is common to send cash remittances back (on a monthly or annual basis) into their rural economy (such remittances are often critical for the survival of the householder to repay old debts). However, remittance levels were found to be lowest among the unskilled workers. Typically, a worker earning Rs. 4000 per month may remit up to 50 percent.

Skilled migrant workers

Skilled migrant workers were primarily involved in skilled construction work such as carpentry and masonry. The specialized skills of these workers provide them with higher incomes, and competition from other workers is less for these subgroups.

Accommodation is a major expense for all migrants since they are located in urban areas where rents are high, but skilled migrant workers are the only subgroup that does not try to minimize this expense. Therefore they usually have better housing facilities compared to other subgroups. Unlike other subgroups, skilled migrant workers were also able to maintain some savings and had some access to formal credit from banks. This served as a coping mechanism for them as they were then able to borrow money or use their savings when income fell short.

3.5 Pastoralist Tribal Households

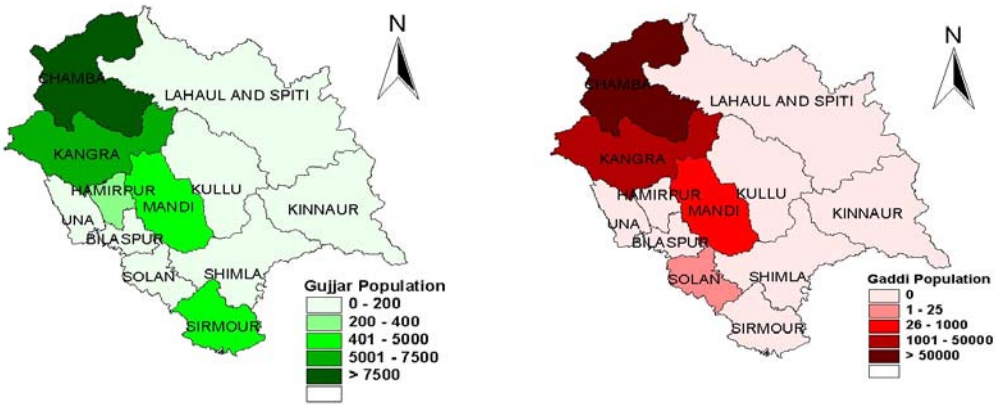
A number of pockets in HP are considered remote and undeveloped, such as the alpine mountainous areas and Sirmour in the southwest. The majority of the population in such areas combine some cultivation with extensive livestock rearing (with the latter generally dominant), due to the availability of pastures and forests. A significant proportion of the population is made up of tribal communities such as *Gujjars* (involved in buffalo herding) and *Gaddis* (shepherding).[23] These communities have historically been nomadic, with seasonal movements based on the availability of pastures. Pastoralist population sizes are notoriously difficult to estimate, but the Department of Tribal Development in HP estimates that there are approximately 150,000 *Gaddis* and 43,000 *Gujjars.*[24]

[22] Source: NFHS II

[23] Other significant tribal communities include Kinners, Jads (of Tibetan ancestry), Lahaulis, Pangwalass, Swangla and Labana (Shashi 1995). For administrative purposes, only Kinnaur, Lahaul and Spiti and parts of Chamba district are ascribed with tribal status.

[24] There is a widespread concern that this figure is an under-representation of the actual population due to a substantial proportion who have not yet received formal tribal status.

Map 3.5.1: Himachal Pradesh: Distribution of *Gujjar* and *Gaddi* Population



***Gujjar* Buffalo Herders**

There are roughly 100 *Gujjar* clans in HP. Despite their ancient history, Gujjars are popularly considered as outsiders in HP and therefore have weak claims to property rights and land titles. For the purposes of livelihood analysis, the *Gujjars* are further sub-divided into nomads and settled, land titled agro-pastoralists. The *Gujjars'* nomadic livelihoods are more opportunistic than those of the established migratory movements of the *Gaddis*, and correspondingly land access rights are problematic and frequently contested.

For settled *Gujjars* practicing subsistence agriculture, produce may meet basic household needs for about six months (for a family of eight). Milk sales (from an average of four to six buffalo) can provide additional earnings of approximately Rs. 2000 per month. Additionally, in recent years young men from Gujjar families have tried to find employment as daily wage labourers in nearby villages and towns. If successful, they can bring in up to Rs. 1500/ month (for 15 days work, which is the standard). Food expenses ranges from Rs. 1000 to Rs. 2000/ month depending on their stock of grains. Fodder purchase costs Rs. 2000/annum and clothing expenses, schooling, health and veterinary costs could amount to more than Rs. 2000. This income is used for both food and fodder related expenditures. Settled *Gujjars* find it hard to maintain large livestock holdings and have reduced their holdings from 15 to 30 buffalos to between 4 and 10 buffalos. Nearby forests are used for fodder (some *Gujjars* have been given land next to forests, likely the patch of forest that has served as their 'home location' and was registered under their names). Instead of going to distant places, settled *Gujjars* use local forests for smaller livestock.

Nomadic or ghumantu *Gujjars* are based in two different locations during the course of a year (plus, on their migratory route), and accordingly, have developed a complex arrangement that caters to their nomadic lives. *Gujjars* move along metalled roads, water streams, forests, pastures and agricultural fields. When choosing where to stop, *Gujjars* consider whether or not there is sufficient water available, a market nearby (to sell milk produce and fetch fodder), and are also careful that their cattle do not stray onto the lands of local farmers and zamindars. The only cash income source that nomadic *Gujjars* have is from the sale of milk and khoa, a milk concentrate made by heating milk over a long period on a slow flame. Milk is sold at Rs. 10 to 15 per kg. while khoa fetches between Rs. 40 to 80 per kg. A lack of fixed price and poor bargaining positions account for the large variation on these products. Nomadic *Gujjars* are highly food insecure during transhumance movements, particularly in summer and monsoon (June till September). They eat nutritionally poor, bland diets during this entire

period.

Gujjars primarily use forest land as grazing area for livestock. Forest laws require permits for letting livestock graze in the protected (but not reserved) category of forests. Earlier, the permits were easy to obtain and *Gujjars* had to pay as little as Rs. 10 every six months for each head of cattle. Forest officials complain that, in practice, both *Gaddis* and *Gujjars* typically under subscribe and take far fewer permits than the cattle they own. Also, forest departments have consistently protested the grazing rights, stating that the livestock greatly undermine the carrying capacity of forests, that pastoralists also let their animals loose in restricted territories and that they have occupied several patches of forest lands illegitimately and use them for setting up homesteads and for agriculture. On the other hand, *Gujjars* complain that the forest department has stopped giving new permits for their cattle, that even lower officials harass them and require periodic bribes, and forest laws being governed by the centre (and not only by the state laws) do not permit them to bargain with the state politicians for land titles to practice settled agriculture in the land they have occupied for decades.[25]

Gujjars, especially the nomads, have difficulty gaining access to welfare provisions and public services due to their migratory nature and lack of proper land access. Therefore, social support networks play a key role both for livelihood protection and food security (sharing of fodder and food) for both groups of *Gujjars*.

***Gaddi* Shepherds**

The *Gaddis* are a semi-nomadic and part agriculturalist tribal group. A large proportion of them are mainly settled and hire labour to maintain their flocks. They are Hindus with tribal status and are relatively better assimilated in the HP socio-cultural milieu compared to the *Gujjars*. As recognized citizens of the state, they can possess land titles and hold government jobs. However, the *Gaddis* are distinguished by the fact that they continue to derive a large part of their income from sheep and goat rearing, and they even migrate when necessary. Income from a sheep flock is generated by selling wool, selling lambs and rams, charges received for sheep folding, and value added to stock by new lambs. The price of wool is, however, reported to have fallen significantly in recent years (with a government assured minimum price rarely applied) and this has put pressure on one of their main sources of income. At the same time the *Gaddis* increasingly prefer employment in public and private sectors to traditional livelihoods.

Settled households were found to be more or less food secure with reasonable dietary diversity (including reasonable quantities of leafy vegetables and dairy). Flockless and flock-poor (with 50 sheep or less, and who may be shepherd employees) tend to be the most vulnerable to food insecurity. Those that are flockless and flock-poor can generate income from shepherding. *Gaddis* who are employed as shepherds by flock owners have low annual earnings (about Rs. 15,000 per year) as compared to flock owners (Rs. 20,000 to 40,000).

3.6 Summing up

Despite the steady economic growth and low prevalence of rural poverty commonly associated with HP, the study draws attention to the varying degrees of food insecurity and vulnerability among different livelihood groups. These include: (i) subsistence farming

[25] Unlike the nomadic and migratory graziers, the settled farmers' population all over the state enjoy rights of animal grazing in local forests and village commons. Although forest grazing is the rule, stall-feeding of milch cattle is quite common.

households; (ii) marginal commercial farming households; (iii) agricultural labouring households; (iv) non-farm migrant workers; and (v) tribal pastoralists.

Subsistence farming households, characterised by both dependence on rain-fed agriculture and access to very small land holdings, were found to be highly vulnerable to food insecurity. Whereas under favourable conditions, a minimum land size of one ha. can provide sufficient food for a household, the study found that most subsistence farming households produce sufficient grain for only four to five months of the year. Differentiated analysis within this livelihood group reveals an intensification of vulnerabilities for those households found in remote rural areas where there are fewer opportunities for short-term employment on commercial farms, as well as those that may belong to lower castes and/or be female headed.

Marginal commercial farmers were found to be somewhat less vulnerable due to the higher returns for production. However, land fragmentation appears to have intensified vulnerability to climatic and market-based shocks for this livelihood group. Moreover, traditional reliance on livestock for smoothing expenditures on consumption and investments in factors of production appears to be undermined by diminishing access to common property resources.

The most chronically food insecure of the livelihood groups identified and analysed are the primarily labouring households (either of HP origin or economic migrants, farm or non-farm labour). As a result of progressive historical land reforms, the proportion of agricultural labouring households in HP is low compared to other Indian states. However, the study has drawn attention to the fact that both intra-state land fragmentation and increasing economic migration into the state by unemployed labourers is leading to a steady increase in population for this group. Migrants in general tend to be poorer than labourers from the state, but for both groups the chronic nature of their poverty results in multiple dimensions of deprivation beyond income, and while there is seasonal exacerbation of vulnerability, food insecurity exists throughout the year. The study also emphasizes that the tribal *Gujjar* pastoralists' restricted access to pasture, public services and welfare provision have exacerbated their food security. A summary of key factors and trends for each group is in Annex 2.

4. Policies and Programmes for Reducing Food Insecurity and Vulnerability

4.1 Outline of State-wide Welfare Policies and Programmes

There are centrally sponsored programmes in HP that focus on poverty and child nutrition such as the National Rural Employment Guarantee Scheme (NREGS) and the Integrated Child Development Scheme (ICDS).

The NREGS is a legal commitment to guarantee 100 days of employment per year for every rural household in which adults are willing to do manual labour at the minimum wage. Critics of the NREGS have pointed out that such schemes do not address the root causes of rural poverty because wages are too low to lift households from poverty, and do not address the difficulties in generating a productive and sustainable infrastructure that responds to the priorities of the rural poor. Nevertheless, NREGS can be seen as a progressive initiative to empower and organize rural labourers, protect them from food insecurity and strengthen their bargaining power.

ICDS, the largest programme of its kind in the world, targets the most vulnerable groups including children up to six years of age, pregnant women and nursing mothers belonging to

the poorest of the poor families and living in disadvantaged areas including backward rural areas, tribal areas and urban slums. Beneficiaries are identified by surveying the community and identifying the families that live below the poverty line. The objectives of the scheme are:

- to improve the nutrition and health of pre-school children in the age zero to six years;
- to lay the foundation for the proper psychological development of the child;
- to reduce the incidence of mortality, morbidity, malnutrition and school drop-outs;
- to achieve effective coordination of policy and implementation amongst the various departments to promote child development; and
- to give mothers the skills to look after the normal health and nutritional needs of the child through proper nutrition and health education.

ICDS provides a package of services that consists of supplementary nutrition, immunization, health check-up, referral services, non-formal pre-school education, and nutrition and health education. The programme provides an integrated approach for delivering basic services through community-based Anganwadi workers and helpers, supportive community structures and womens' groups through the Anganwadi Centre, the health system and in the community. Besides this, the Centre is a meeting place where womens' and mothers' groups can come together to promote awareness and joint action for child development and womens' empowerment.

Some members of government and many academics are concerned that the scheme does not pay enough attention to child feeding practices, education and counselling for mothers, and that service delivery is not sufficiently focused on children below age three (M.S. Swaminathan Research Foundation and WFP, 2001).

Other important centrally sponsored social protection initiatives (anti-poverty programmes) include the *Targeted Public Distribution System* (TPDS),[26] *Swarnjayanti Gram Swarozgar Yojana*[27] (SGSY) and the *Mid Day Meal Scheme* (MDM). Since it is obviously a food commodity based intervention, TPDS is often considered a key initiative in promoting food security. However, reviews have highlighted numerous implementation challenges including corruption, non-availability of rationed foodstuffs and problems faced by the poor in accessing BPL entitlement cards. Critics of India's long standing grain procurement and distribution systems have also raised concerns regarding poor cost efficiency and long-term market distortion.

Research shows that the effectiveness of implementation varies enormously across and within states on the basis of geographical and socio-economic differences. Problems include beneficiary selection (inclusion and exclusion errors) and neglecting human development outcomes and logistical problems (access and timing of resource distribution). Moreover, many different agencies are involved in the delivery of anti-poverty programmes with blurred responsibilities complicating coordination, accountability and transparency. This undermines the ability to review critically the overall cumulative contribution of the schemes.

[26] Public Hearings organized in 2002 by the Right to Food Campaign in the KBK districts highlighted the multiple challenges faced by poor and food insecure households in accessing TPDS commodities.
[27] Micro enterprise promotion for the poor, designed to lift families above the poverty line after three years. Programme provides training and a credit-matching subsidy via private banks.

4.2 Food Insecurity and Vulnerability: Strategic Implications

The study makes it clear that there are many causes of food insecurity and vulnerability in the region. One clear cause is the increased fragmentation of land. The fragmentation has made farming households more vulnerable to weather-induced or market-based shocks and many farming households have difficulty maintaining sufficient food production with only a marginal piece of land. However, households with access to proper irrigation seem to be better off in terms of coping with marginal land areas. The fragmentation has also led to an increase in both agricultural and non-farm labourers putting a downward pressure on wages and thereby increasing the vulnerability of these livelihoods. Other causes are limited or no access to welfare provisions and public services, diminishing access to common property resources, weak infrastructure, which makes access to distant markets difficult and lack of accessible credit institutions.

While immediate action should be taken wherever required to guarantee minimum levels of welfare as a fundamental human right, there is no fast track to guarantee lasting food security for all. One of the key strengths of the strategic framework to poverty reduction associated with HP in recent decades has been that social welfare is seen as a component (not a panacea) of a multi-sectoral approach that must address land ownership and livelihood promotion, as well as the protection of vulnerable groups.

To ensure livelihood security and thereby the eradication of extreme poverty, vulnerability, food insecurity and hunger on a sustainable basis, a complementary two track strategy is required. One track involves growth led *livelihood promotion* by generating livelihood opportunities that are accessible to the poor, and which strengthen their incomes and productivity. The other track involves the *protection of livelihoods* to reduce the vulnerabilities of poor people and tackle the pervasive fear of uncertainty associated with food insecurity. This track involves enhanced direct access to social protection and ensuring immediate access to food for all.

Livelihood Promotion: With agricultural activities so central to rural livelihoods, concrete measures to raise productivity and accelerate diversification are central to livelihood promotion strategies. Interventions can include rural infrastructure development (roads, water and irrigation, power, etc.), skills training and private enterprise and market support services (farm-based, agro-processing and non-farm), natural resource management and environmental conservation, regulatory framework for food safety and quality, improved access to enhanced social services (education, health, etc.).

Livelihood Protection: Interventions can include ensuring the there is adequate provision of social security and social protection for both organized and unorganized sectors, as well as other vulnerable categories (vulnerable children, the elderly, the disabled, etc.); targeted nutrition programmes for the extreme poor, labour intensive public works policies, school meals and gardens, targeted conditional cash transfers and subsidies. Such programmes alone cannot be expected to reduce poverty, food insecurity and vulnerability on a sustainable basis, but together they can have an effect.

Operationalizing such a twin track strategy to eradicate successfully extreme poverty and hunger will necessitate the following cross-cutting components:

People-centred focus: The Government of HP is committed to improving the efficiency and

effectiveness of its service provision, thereby reducing the food insecurity and vulnerability of the poor. It is committed to prioritizing the principles of decentralization and community participation to build local institutions and capabilities, strengthen legal rights, enhance inclusive access to resources, and empower women and other specific marginalized and vulnerable groups.

Ensuring optimum impact of scarce public resources: Target areas and communities with a particularly high incidence of poverty and hunger with focused policies and investments to support dynamic and pro-poor market development and facilitate enterprise diversification.

Strengthening markets to favour the poor: Accelerating access towards open and fair trading systems, including labour markets, at all levels with special attention to improving market access and information and minimizing trade distorting interventions but with caution and only where there is sufficient evidence to suggest that this will enhance poverty reduction. A strong civil society is essential to ensure effective engagement in the formulation, implementation and monitoring of pro-poor policies.

Commitment to time-bound outcomes: Setting time bound targets by the main state level development partners which can be monitored for poverty reduction, agreeing on coordinated action, and mobilizing resources (public, private and community based) accordingly.

Policies are required to address worrying factors and trends such as land fragmentation, market instability, undeveloped opportunities for irrigation, and increasingly restricted access to common property rights, lack of workers protection in the informal sector and persistant implementation bottlenecks for public welfare provision (TPDS and ICDS, etc.). Such factors and trends will benefit from further specialized studies to ensure they are explored in more depth and in partnership with vulnerable households themselves, in order to enhance the effectiveness of progressive policies and programmes designed to reverse negativities. However, on the basis of the robust findings generated by the study, and the constructive processes of stakeholder consultation arising from initial dissemination and dialogue, it is possible to make a number of indicative recommendations regarding policy priorities for public action.

4.3 Priority Areas for Public Intervention

The study identified specific priority areas of intervention. Promoting policy focus on the overall food security impact of both agricultural development and the development of non-agricultural sectors on the livelihoods of specific poor and vulnerable groups are important to reduce vulnerability in HP.

This section of the report captures the main issues raised and provides further detail regarding policy priorities emerging from the process of stakeholder dialogue and exchange associated with this study. Understanding the specific nature and relative degree of vulnerability associated with different livelihood groups can facilitate more rational prioritization and sequencing of policy initiatives and encourage debate where trade offs may be inevitable between accelerating short-term growth per capita and longer-term, more sustainable and equitable investments in human development for pro-poor growth.

Greater investment in dry land technology

- Much of the gross crop area depends on rain. Technologies to better exploit existing rainfall (watershed development and conservation, etc.) and enhanced application of regenerative technologies to ensure agricultural growth are both required. Ferro-cementing storage tanks are already being piloted in several villages and could be further promoted.
- Regenerative technologies hold enormous promise for improved productivity, efficiency and sustainability for resource-poor farmers in low potential areas by conserving existing nutrients and moisture, etc. as well as introducing new elements such as nitrogen fixing crops, agro-forestry and water harvesting, etc.
- Opportunities to ensure targeted subsidies should be harnessed. Private sector expertise (e.g. in the technical research and delivery of services) should also be promoted in order to support government extension delivery.

Adaptive agricultural research

- Greater investment in adaptive agricultural research is required in collaboration with subsistence farming households and pastoralists (coordinated within a comprehensive watershed development strategy).
- Policies designed to ensure access to quality seed by vulnerable farming households should be prioritized.
- Enhanced productivity and livelihood security require public investment and policy regulation involving the private sector and farmers.

Watershed development and irrigation

- Evaluations of water conservation technologies indicate a potential productivity increase in excess of 30 to 50 percent where it is effectively combined with improved cropping technologies. Watershed development has the potential to facilitate opportunities for enhanced local governance and community participation, as has been demonstrated in other Indian states.
- The anti-poverty impact of irrigation can be intensified by creating the conditions to include the poor. This necessitates a multi-sectoral approach including equitable access to land, pro-poor market development (opportunities at low transaction costs), extension support and affordable financial services, etc.
- Where viable, introducing or enhancing irrigation systems can significantly boost the income of both subsistence and marginal commercial farmers where planning, operation and management structures are effective and other relevant constraints (access to inputs, financial services, markets, etc.) are simultaneously addressed.
- A pilot project will have to explore public support for subsistence and marginal commercial farmers to adopt higher-cost drip and sprinkler irrigation technologies to facilitate a shift towards higher value crop production.

Joint forest management and promotion of non-timber forest products (NTFPs)

- Strengthen commitment to ensure optimum implementation of recent legislation aiming to devolve forest management and benefit sharing to rural communities, including pastoralists, and their traditional and elected local representatives. Accelerate investments in reforestation, social forestry, etc.

- Ensure that local communities derive tangible benefits from forestry policies, and explore the extent to which women (and other marginalized groups) need to be included as key players in such initiatives.

Development of financial services

- Promote and accelerate the outreach of micro-finance markets and the diversity of financial products available to suit the specific requirements of different livelihood groups (recognizing the considerable heterogeneity that exists among the poor).
- Ensure the conditions for micro-finance, such as greater attention to building adequate capacity (private and public), an appropriate regulatory environment, including insurance provisions, etc., are met. Clarity is required within the state government regarding a joined-up, multi-sectoral strategy and coordination of key institutional mandates to promote financial service provision for the poor.
- Undertake a systematic and high quality review of state wide experience to date regarding Self Help Groups' commercial bank linkage programmes operating over the past decade, and scale up effective initiatives where appropriate.
- Possibilities for introducing micro-insurance should also be explored (including the introduction of cost effective commercial insurance to protect farmers from the risks associated with globalization).

Diversification through horticultural development and animal husbandry

- Ongoing strengthening of policies and programmes to promote horticultural and livestock production (also floriculture and bee-keeping where appropriate), with necessary levels of investment including effective policy and technology support, business development and financial services provision, market development (including large scale investment in infrastructure), the active promotion of agro-processing, etc.
- Information and communication technologies have a key role to play in developing rural enterprises and helping small producers gain access to information on prices, innovative production methods and market trends. Further work needs to be done to review progressive innovations in various states of India and to appraise their relevance for different livelihood groups in the context of HP. Clarify institutional mandates.
- Experience in HP to date has confirmed that food security need not be compromised by a gradual shift towards diversified, high value crops by vulnerable subsistence farmers as long as they have sufficient support to ensure effective market access and risk management, thereby enhancing livelihood security on a sustainable basis.

Promotion of small-scale industries and micro enterprises

- In conjunction with ongoing food security and vulnerability monitoring, policymakers need to ensure that different sectoral departments work towards a clearer articulation of a joined-up strategic approach to promote small and medium-sized enterprises (SMEs) and measure actual outcomes. Mechanisms must be in place for demand responsive and livelihood/market sensitive provisions of vocational training and business development services.
- A possible special task force on small industries could be considered to ensure that stakeholders are better organized into a common strategic framework for enterprise

development. Building a qualified team of expertise within the public sector (to partner with the private sector) is a critical requirement.
- Increase commitment to implement emerging national policy frameworks for enhancing conditions of employment in the non-farm unorganized sector.

Supporting migration strategies

- Migration can be an effective strategy only when combined with alternative economic activities such as labour-intense agricultural diversification, expanding agro (and non-farm) industrial and tertiary sectors, etc.
- A higher level of industrial growth linkages combined with market development can help to improve the human development outcomes of migration.

Strengthening anti-poverty programmes for enhanced social protection

- There has been too little attention paid to the adverse livelihood and vulnerability impact of ill health, disability and premature death given the significant loss of income and significant expenses frequently incurred by already impoverished households.
- Explore the areas where livelihood related dynamics overlap with social and inter-generational inequities such as relate to gender, childhood, older people and disabled people.
- Review the accessibility, effectiveness and impact of major programmes such as TPDS, ICDS and MDM and ensure proper targeting.

Strengthening the institutional setup

- Establish ongoing food security monitoring systems to track the impact of better market access and risk management, to identify actual and potential risks faced by different livelihood groups in this respect, and to learn more about the risk management strategies available and how these might be supported or enlarged.
- Develop the potential for greater synergy, particularly regarding: (i) the possible roles that self help groups (SHGs) might play as community and gender empowerment catalysts; and (ii) the urgent requirement to ensure greater responsibility, accountability, and thereby institutional strengthening of PRIs, in the local level coordination of both APP and broader development initiatives. Use initiatives to support the engagement of citizens and civil society organizations such as SHGs in processes of public expenditure tracking and assessments of service delivery, and in enhancing the effectiveness of existing policies and programmes. The livelihood categories identified within this study can provide an important entry point for disaggregated analysis.
- Intensify efforts to develop higher levels of commitment and capacity at the state level for poverty monitoring and programme evaluation.

An overview of potential policy and programme priorities as they relate to different livelihood groups is provided in Annex 3.

4.4 Continued Support to Strengthen Food Insecurity and Vulnerability Analysis

The central aim of this study has been to support the development of a framework for the implementation of FIVIMS in HP. On the basis of available and pre-existing data, the state

has reasonable grounds to believe that the incidence of income poverty is considerably lower than the national average. However, the analysis emerging from FIVIMS has enabled more disaggregated and critical analysis of the relative food insecurity and vulnerability faced by various livelihood groups within the state and the various factors that will need to be addressed in order to enhance the poverty impact of state-wide policies and programmes.

Besides monitoring the general indicators for food insecurity and vulnerability issues, such as population below poverty line, number of underweight children, etc., the study identified specific indicators related to monitoring the vulnerability of specific livelihood groups. The indicators include the number of people within each vulnerable livelihood group and indicators on the specific causes of food insecurity and vulnerability for these groups. Examples of such indicators are size of landholdings, access to public services or seasonal shocks such as climatic shocks. Other indicators, more specific to particular groups, include wage rates and prices of particular produce or quality of soil, for example.

Much of the existing data is already available, although further study on quality, frequency and levels of disaggregation is required as a result of the findings of this study. In addition to disaggregation by various livelihood groups, it is important to ensure a break down at district level of key FIVIMS indicators to promote decentralized awareness, analysis and accountability to the greatest extent.

The integration of food insecurity and vulnerability analyses into ongoing policy development and poverty monitoring efforts is a key challenge for the government. As with other Indian states, information flows through various sectors and levels, tends to be unidirectional and often bypasses concerned technical departments, passing directly from districts to state government. Departmental monitoring is generally restricted to data regarding specific programme outputs and related physical achievements and expenditures.

Further to extensive discussions regarding the compatibility of FIVIMS objectives with existing data sets, the indicators presented in Table 4.4.1 have initially been selected by the government of India's national FIVIMS counterpart as strategically significant for the initiation of FIVIMS activities in India.

In addition, potential food insecurity and vulnerability indicators (presented in Table 4.4.2) have been identified specifically for each of the five livelihood groups, as a result of stakeholder discussions about the study findings.

Table 4.4.1: List of Indicators Selected for Initiating FIVIMS Activities in India

No.	**INDICATOR**	**SOURCE AND DATA AVAILABILITY**
1.	Population below poverty line (rural)	Planning Commission/State Governments/number of BPL families
2.	(a) Population below poverty line (urban), and (b)Number of slum populations living in them	Planning Commission/ Ministry of Urban Affairs and Employment/number of BPL families
3.	Number of landless agricultural labourers	Ministry of Agriculture/ State Government/number of BPL agricultural labourers
4.	Number of households with	Ministry of Agriculture/ State Government/number

	less than one ha. of rain-fed farm land	of BPL marginal farmers
5.	Children born with birth weight less than 2.5 Kg.	Department of Women & Child Development (only for ICDS blocks)/measured by AWCs
6.	Under weight (percentage of children age 1 to 5 years according to weight for age)	Department of WCD/NNMB/measured by AWCs
7.	Wasting (percentage of children age 1 to 5 years according to height for age)	NNMB/measured by AWCs
8.	Stunting (percentage of children age 1 to 5 years according to weight for height)	NNMB/measured by AWCs
9.	Chronic energy deficiency (Percentage of children age 6 months to 60 months)	NNMB/measured by AWCs (percentage of grade 3 and 4 children)
10.	IMR (number of infant deaths per thousand births)	RGI/some information available from WCD Dept. GP should also be entrusted with registration of birth and death.
11.	U5 MR	RGI (S.R.S.)/National Family Health Survey/should be measured by W&CD Dept.
12.	Access to fair price shop within 5 KM	Department of Food Supplies and Consumer Welfare/number of fair price shops (existing and functioning). Also PDS/AY and AAY allotments and number of beneficiaries plus number of families who have not accessed entitlements
13.	Annual variation in open market prices of wheat, rice, coarse cereals and key vegetables	Department of Consumer Affairs/current market price per Kg.
14.	Number of old infirm and indigent	Ministry of Social Justice and Empowerment/OAP, ODP, WP, EFP, SSN (number of pension holders), number of destitute in need of pension
15.	Number of poor female-headed households	Female-headed BPL household information
16.	Number of people from primitive tribes/various ethnic groups	ST/SC Development Dept/ST plus SC population with disaggregated details for BPL, access to health facilities, access to food supplies/PDS/AY/AAY, etc.
17.	Vulnerability to natural calamities	Information collected by Revenue Department on natural calamities
18.	Body mass index	W&CD through Anganwadi Centres
19.	Rainfall	Information collected by Revenue Department

Table 4.4.2: Key FIVIMS Indicators Identified During HP Study For Specific Livelihood Groups

	Subsistence Farming Households (SFHs)
1	Number of Subsistence Farmers: Should be included in census under existing category 'cultivators.'

2	Availability of Irrigation facilities: Key factor to productivity, with implications for subsidized planning where technically feasible. To be monitored by Department of Rural Development or Agriculture.
3	Size of Landholding: Crucial relationship to productivity/vulnerability and readiness to make progressive investments.
4	Quality of Land: Terrain, soil, sunshine hours, moisture retention, etc. are key factors determining productivity and opportunities for diversification. Data already exists but needs to be more systematically monitored and analysed for different areas.
5	Under-employment: Under-employment and unemployment is disguised in existing statistics. Promotion of opportunities for surplus labour to be productively engaged in the non-farm sector should be targeted in certain areas.
6	Climatic Shocks: Occurrence needs to be recorded along with communities most at risk and disaster management capabilities.
7	Infrastructure: Access to various support services by different livelihood groups. Existing evidence suggests that the poorest farmers are less likely to access extension workers and veterinary agents than better off farmers. Poor connectivity is often a key factor.
	Marginal Commercial Farming Households (MCFHs)
1	Number of Commercial Farmers: Census methodology should be more helpful in terms of generating data on different sub-groups of commercial farmers to support more effective targeting of policies and programmes.
2	Area Under Commercial Crops (ha.): New areas with potential for commercial development need to be monitored – estimated at present that 120,000 ha. of cultivatable public wasteland exists.
3	Productivity of Commercial Crops: Increase in productivity is ultimately of even more significance than the area under cultivation as it better captures the livelihood impact. Trends should be closely monitored and analysed in order to identify the produce with the highest returns.
4	Weather Shocks: Requirement to grade the degree of vulnerability to climatic shocks and also to ensure that farmers are able to access readily such information. An appropriate 'degree system' could be developed.
5	Irrigated Lands Area (ha.): A crucial indicator for monitoring opportunities towards improved productivity.
6	Market Conditions: Market prices and dynamics for key products should be closely monitored (both in terms of farm gate and retail prices) and appropriate policy development undertaken on the basis of analysis.
7	Farm Mechanization: The significance of this data would be to assess the potential case for trade offs between enhanced productivity and greater labour intensity for employment generation. An appropriate 'degree system' could be developed.
	Agricultural Labouring Households (ALHs)
1	Number of Farm Workers: Currently poor data availability, but robust information is an essential requirement in order to enhance policy effectiveness.
2	Farm Fragmentation: Increasing fragmentation has an adverse effect on commercial viability, livelihood sustainability, and food security.
3	Wage Rate: Trends should be closely tracked (on a district by district basis, and gender disaggregated, and related to those for cost of living) in view of their significance as vulnerability/food security indicators.
4	Area Under Production of Commercial Crops: (a) area being shifted to commercial cultivation from subsistence; (b) wasteland being made cultivatable. Trend analysis

	would provide information regarding availability of employment across the state. Potential for bringing new areas under commercial agriculture needs also to be assessed
5	Farm Mechanization: Less dependence on labour may enhance productivity and competitiveness while exacerbating poverty of landless labourers. Dynamics should be monitored closely to inform policy making.
6	Distribution of TPDS: Trends in off take and ability to access benefits by different groups should be carefully monitored and constraints examined in detail.
	Migratory Labouring Households (non farm) (MLHs)[28]
1	Level of Remittances: Good indicator for earning capacity.
2	Urban Price Indices: For essential food products in different parts of the state at different times (seasonal variation) – key to monitoring food insecurity. Should include rental accommodation prices in urban areas because it is the second largest expenditure for many migrants and also relates strongly to affordability of health and hygiene.
3	Seasonal Variation in PDS Intake: Needs to be monitored closely and potential constraints to access addressed.
4	Urban Water and Sanitation Service Provision: To be focused on slums and worker colonies.
5	Independent Surveys of Migrant Labour Sub-Groups (quantification and trends): Particularly required for large state and private construction projects. Current systems of data collection are inadequate as only labour directly employed by state/companies is monitored, despite the fact that sub-contraction is widely practiced.
6	Nutrition Levels for Women and Children: Anaemia and malnutrition are pervasive among women and children employed in the unorganized sector. The condition of migrant workers upon entering the state would be valuable.
7	School Enrollment of Out of State Children: As a proportion of total migration rates.
	Pastoralist Tribal Households (PTHs)
1	Number of Pastoralists: Existing census data is weak in terms of reliability, but basic information on populations, location and incomes is essential for effective policymaking.
2	Settlement Status and Location of Settlement: Trend analysis is particularly crucial. It is important to know both the population that has settled, and the population that would potentially be interested in settling. Identification of opportunities for settlement need to reflect analysis of governance issues and services and amenities, not just land availability.
3	Migratory Routes: Further study is required to record routine patterns of migration for different communities and to identify opportunities for enhanced livelihood promotion and protection through targeted service provision.
4	Number of Forest Permits: Pastoralists commonly graze their livestock with outdated permits inadequate for actual possession. Accuracy is essential to ensure effective and responsible forest management for all stakeholders.
5	Livestock Population: Important to enhance veterinary planning and grazing management strategies.
6	Seasonal Shocks: Climatic conditions (at both high and low altitudes) can have a major impact on pastoral livelihoods and monitoring trends and patterns can play a key role in policy development.

[28] It is recognised that this group, particularly those members of it who come from outside the state, raises a particular challenge for data collection and monitoring.

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Annex 1: Key data collection efforts in Himachal Pradesh

National Sample Survey (NSS): The NSS is a nation-wide, large-scale, continuous survey operation that began in 1950 and is conducted in the form of successive rounds on various socio-economic aspects. It was established to address nationwide data gaps for socio-economic planning and policy making. In March 1970, the NSS was reorganised and all aspects of its work were brought under a single Government organization, namely the NSSO under the overall direction of a governing council to impart objectivity and autonomy in the matter of collection, processing and publication of the NSS data.

Below Poverty Line (BPL) Survey: State governments conduct their own surveys to identify those families living below the BPL in rural areas. The main objective of the BPL survey is to generate a list of eligible poor families who can then be assisted under various anti-poverty programmes. In 2002, a revised detailed methodology of score-based ranking on the basis of 13 indicators was recommended for identifying the rural poor. Households can then be classified into poor and non poor based on the total score. It should be noted that the total number of BPL families for a given state should not exceed by more than 10 percent the number of poor estimated by the Planning Commission on the basis of NSS data. The 13 indicators are:

- land ownership and size of operational holding
- type of house
- average availability of normal wear clothing per person
- food security
- sanitation
- ownership of consumer durables
- literacy status
- status of household labour
- means of livelihood
- status of children and whether going to school
- type of debt
- reason for migration
- preference for assistance

A new survey of BPL families (2006) has recently been completed in Himachal Pradesh, but the results are not yet available.

Atlas of Food Insecurity: The Food Insecurity Atlas of Rural India (2001) is a joint initiative of the M.S. Swaminathan Research Foundation (MSSRF) and the United Nations World Food Programme (WFP). The goals of this exercise are to identify the food insecure states in India, both in the short and long term, and to suggest an action plan that can help the country to become substantially food secure by the year 2007, which marks the 60th anniversary of India's independence.

HP State Human Development Report (SHDR): Human development has been defined as the ‘process of enlarging people’s choices,’ (UNDP 1990) and the concept is intended to focus attention on key dimensions of human rights, particularly as they relate to health care, food security, water, education, environment and culture. As a result, Human Development Reports seek to analyse composite indicators that go beyond income-based measures.

Drawing on existing data, the Human Development Index (HDI), Gender Development Index (GDI), Gender Empowerment Measure (GEM) and Human Poverty Index (HPI) have helped in highlighting the need to remove human deprivation. It should be noted that SHDR does not collect any data itself, but relies on data from other sources.

National Family Health Survey: The 2005-06 National Family Health Survey (NFHS-3) is the third in a series of national surveys; earlier NFHS surveys were carried out in 1992-93 (NFHS-1) and 1998-99 (NFHS-2). All three surveys were conducted under the stewardship of the Ministry of Health and Family Welfare, Government of India, with the International Institute for Population Sciences, Mumbai, serving as the nodal agency. NFHS-3, like NFHS-1 and NFHS-2, is a household survey, which will provide estimates of indicators of population, health, and nutrition by background characteristics at the national and state levels.

Each successive round of the NFHS has had two specific goals: a) to provide essential data on health and family welfare needed by the Ministry of Health and Family Welfare and other agencies for policy and programme purposes; and b) to provide information on important emerging health and family welfare issues.

NFHS-3 also provides information on several new and emerging issues including:

- perinatal mortality, male involvement in family welfare, adolescent reproductive health, high-risk sexual behaviour, family life education, safe injections, tuberculosis and malaria;
- family welfare and health conditions among slum and non-slum dwellers in eight cities (Chennai, Delhi, Hyderabad, Indore, Kolkata, Meerut, Mumbai and Nagpur); and
- HIV prevalence for adult women and men at the national level, for Uttar Pradesh, and for five high HIV prevalence states, namely, Andhra Pradesh, Karnataka, Maharashtra, Manipur, and Tamil Nadu.

Annex 2: Summary of Key Factors and Trends Underlying Food Insecurity and Vulnerability of Different Livelihood Groups in HP

Livelihood Group	Main Factors and Trends Identified by the Study
Subsistence Farming Households (SFHs)	• Farming households are overly dependent on rain fed agriculture and unable to shift to more lucrative and diversified commercial cultivation as a result of disadvantages such as poor quality land, absence of irrigation, relative isolation, mountainous terrain, etc. • For non-irrigated land, stakeholders agreed that one hectare of land is the cut off level below which a subsistence farmer will not be able to meet basic household requirements. Most households in this group produce grain sufficient to meet needs for only four to five months of the year. • For such households, opportunities for livelihood diversification are crucial and where reliable secondary income strategies cannot be identified, the probability of vulnerability and chronic food insecurity is high. • The most vulnerable households in this category tend to be found in lowland and alpine areas (where there are fewer opportunities to work on commercial farms), although low castes and women in all areas experience specific vulnerabilities as a result of social disadvantage. • Significant livelihood shocks include low rainfall and sickness and the death of a family member. • Transitory seasonal food insecurity is experienced particularly by households in alpine areas between November and April.
Marginal Commercial Farming Households (MCFHs)	• While generally better off than SFHs in terms of assets, capabilities and social indicators, the characteristically small land holding of MCFHs (average 0.5 ha.) is a major factor underlying vulnerability to risks and shocks. • Diversification, including vegetable cultivation along with fruit cultivation, is increasingly practised as a risk management strategy, although households cultivating only vegetables were found to be more food insecure than those with orchards. • Secondary income derived from livestock is increasingly difficult to obtain, due to declining availability of CPRs (grazing land). • The absence of pro-small farmer marketing channels is a major factor restricting income. • Land fragmentation is viewed as a key threat by farmers, many of who see little prospect as farmers for their children. • Climatic shocks can devastate fruit-based livelihoods, particularly where multi-annual.
Agricultural Labouring Households (ALHs)	• ALH is defined as those with at least 50 percent of total household income derived from wage paid manual labour in agricultural activities. • HP can be considered an exceptional Indian state in that the proportion of landless ALHs is significantly lower than is generally the case (due to a progressive land reform policy

	commitment dating back half a century). However, the proportion of ALHs may be increasingly rapidly as land fragmentation threatens the viability of many MCFHs and SFHs who turn to labour as an alternative livelihood strategy. • Migrant ALHs in particular tend to receive lower wages (and worse conditions) than local workers, and their vulnerability is further exacerbated by their inability to access basic welfare entitlements. Nepali make up more than half of total hired farm workers. • As a whole (along with MLHs – below), ALHs constitute one of the poorest and most vulnerable and food insecure groups in HP. Informal inter-household support plays a key role in social risk management but nutritional status is often compromised as a result of both poor dietary diversity and unsanitary housing conditions (including unsafe water). • Seasonal vulnerability and transitory food insecurity can occur during certain times of the year (these will vary for workers in different areas on different crops).
Migratory Labouring Households (non-farm) (MLHs)	• Along with ALHs, and while having considerable diversity as a group, MLHs constitute one of the poorest and most vulnerable and food insecure groups in HP. Anaemia and malnutrition are known to be highly prevalent among women and children. • Living conditions are often very poor. A lack of access to safe water and sanitation are major causes of ill health and malnutrition. • Key factors underpinning the severity of vulnerability and food insecurity include whether workers are considered skilled, whether they are in the formal or informal sector and whether they are from outside HP (in which case they may be paid less, have fewer alternative assets available, have restricted access to public services and welfare provision, etc.). Unskilled, informal sector, non-HP workers are therefore the most disadvantaged. • Exploitative relations with sub-contractors pose a major problem for many MLHs. Workers are not protected by existing rights-based legislation (much of which may need to be revisited and reformed). • Seasonal vulnerability and transitory food insecurity are common during the harsh winter months (January to March).
Pastoralist Tribal Households (PTHs)	• Of the *Gaddis* and the *Gujjars* (buffalo herders) involved in the study, the latter were found to be generally more vulnerable and food insecure. However, lower caste *Gaddis* (without flocks of their own or marginal flocks) may also be vulnerable as a result of social discrimination. • The key factor underlying Gujjar livelihood and food insecurity involves their weak claims to property rights (they are considered by many as outsiders) as a result of opportunistic migration patterns. Pasture access rights are problematic and frequently contested. • Transitory food insecurity (particularly poor dietary diversity)

	may be associated with the lean season and during long periods of migration. • Access to public services and welfare provision is poor.

Annex 3: Overview of Policy and Programme Priorities for Specific Livelihood Groups

Livelihood Group	Livelihood Promotion	Livelihood Protection
Subsistence Farming Households (SFHs)	Productivity of land could be enhanced considerably. Scope exists for expanded watershed development and provision of irrigation, with significant community involvement and management. Irrigation opens up opportunities for diversification of crops and commercialization for greater incomes and food security Fertilizer consumption is well below national average (farmyard manure is favoured). Closer analysis of specific constraints faced by different categories of farmers required (generally as a result of a risk averse outlook due to small land holdings and rainfall dependency). Strategies for exploring both diversification (particularly livestock rearing) and the commercial potential of agriculture could be more actively promoted with subsistence farmers.	Health infrastructure is good and medicines generally available. TPDS, FFW, ICDS and Mid-day meals operate reasonably well in lowland areas. Elsewhere, a critical and systematic review of the effectiveness vis-à-vis the most vulnerable livelihood groups, is required. Alternative livelihoods need to be identified in partnership with food insecure households cultivating opium in Chuhar and Manikaran valley.
Marginal Commercial Farming Households (MCFHs)	Marketing of produce by MCFHs continues to be a key challenge, as they lack bargaining power. Marketing, packaging, transporting and producer organization initiatives through extension services are therefore required. The dissemination of price information would be a significant resource for small farmers, and reduce the potential for exploitation by intermediaries. MCFHs are concerned with the opening of domestic markets to international competition. Specialist analysis and support is required for example to promote improved quality and branding of local products, thereby enhancing global competitiveness. Strengthening rural infrastructure (construction and maintenance) continues to be a key	Fragmentation of land leads to increased vulnerability and risk aversion. Participatory and consultative state-wide land policy analysis is recommended to identify a consensus for specific reform priorities targeting various livelihood groups. Farmers also at risk from possible climatic change (higher temperatures in recent years have reduced productivity over a multi-annual period and increased pest incidence). Identification of target groups for investment in irrigation is therefore a priority. Potential and opportunities for development of agricultural insurance markets (along with other financial services) need to

	priority for market development (particularly in more remote and highland areas), despite the scale of investment in this to date. Diversification (e.g. through planting orchards along with vegetables, agro-processing initiatives, apiculture, mushroom cultivation, etc.) should be promoted aggressively.	be systematically reviewed in support of farmers risk management to protect existing assets. Likewise, careful assessment of the impact of global markets on local fruit markets and marginal farmers should be undertaken with a view to appropriate policy development
Agricultural Labouring Households (ALHs)	Measures to promote livelihoods of MCFHs (above) and to expand commercial farming, can also be expected to have a positive impact on ALHs, although attention needs to be directed at opportunities for complementary and specialized skills training to enhance the productivity and add the value of farm labour. For subsistence labourers, SHG initiatives have proven to be a potential opportunity to increase their household income. Surveillance of the landless population should be ongoing and the feasibility and impact of targeted land reform policies reassessed.	Facilitating access of poor ALHs to CPRs and forests should be a priority, with problems clearly identified through participatory monitoring and action taken to ensure that vulnerabilities are not multiplied. A systematic (and participatory) review of existing social protection policies and programmes (TPDS and BPL, NREGS, SGSY, ICDS, etc.) vis-à-vis awareness and access to benefits for different categories of poor and vulnerable households, and impact on food security status (and seasonal variations), should be a state government priority. Existing legislation and regulatory

Migratory Labouring Households (non farm) (MLHs)	MLHs (including those from outside the state) should be more aware of rights to access schools for their children (DoE has declared that 'No one living or working in HP will remain illiterate.') Department of Labour and Employment needs to restructure and reform in response to the major shift from agriculture to secondary and tertiary sectors. Currently, data is gathered only for migrants working with the government. Skills training and micro-enterprise development opportunities (including financial services provision in urban areas) should be a key focus.	frameworks aimed to protect basic rights in the unorganised sector (e.g. their vulnerability to exploitation by contractors) should be critically reviewed and recommendations for enhanced effectiveness acted upon. Currently, the Interstate Migrant Workmen Act 1979 applies only to formal public sector workers. Child protection should be a key priority. Care should be taken to ensure that workers' health does not suffer because of the increased reliance on chemical inputs. Urgent attention to slum housing conditions (particularly in urban areas) should be considered a priority. The welfare of migrant labourers (and their families) should not be neglected, as they are often particularly vulnerable and food insecure, and unable to claim basic entitlements as a result of their status. The rights of migrant households to access basic services and attain minimum levels of welfare must be recognised.
Pastoralist Tribal Households (PTHs)	Settled pastoralists have often effectively managed to derive the core of their income from cultivation. However, the emerging generation appears increasingly disinterested in continuing traditional migratory patterns. Policy dialogue with various pastoralist sub-groups is recommended to explore settlement options, and to design specific packages of support that would be most effective Experience with practicing traditional medicines and veterinary methods should be researched extensively in a	A thorough review of seasonal and migratory related vulnerability and food insecurity patterns should be undertaken and appropriate social protection measures developed to target situations as required (e.g. food or cash based transfers made available along traditional migratory routes). Monitoring nutritional status of pastoralist women and children needs to be ensured and ICDC interventions adapted

	participatory manner and documented so that it can be disseminated in support of livestock production across the state. Care should be taken to ensure that forestry department officials do not inadvertently discriminate against migratory grazers, while allowing permits to settled grazers for accessing common property. The effectiveness and appropriateness of extension services targeted at pastoralists should be reviewed rigorously and appropriate action taken, particularly in support of diversification into crop cultivation.	appropriately for cultural and livelihood sensitivity. Enhanced nutritional awareness and identification of opportunities to enhance dietary diversity should be prioritized. Measures to ensure enhanced public representation of socially discriminated groups such as Gujjars and lower caste Gaddis should be explored

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