



**Ministry of Agricultural Development (MOAD)**

**NEPAL**

**Food and Nutrition Security Plan of Action  
(FNSP)**

**A National Programme for Food and Nutrition Security**

April 2013

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## List of Acronyms and abbreviations

ADS	Agricultural Development Strategy	GMP	Good Management Practice
ADO	Agricultural Development Office	GoN	Government of Nepal
APSF	Animal protein sourced food	HACCP	Hazard Analysis and Critical Control Points
AGDP	Agricultural Gross Domestic Product	ICT	Information and communication technology
		IEC	Information, Education, Communication
AI	Artificial Insemination	IFAD	International Fund for Agricultural Development
		LFUG	Leasehold Forest User Group
AMI	Anthropometric Indicator	LSC	Livestock Service Centre
BMI	Body Mass Index	MAP	Medicinal and Aromatic Plant
BPL	Below poverty line	MDG	Millennium Development Goal
CA	Conservation area	MFI	Micro-finance Institution
CADIC	Central Agriculture Development Implementation Committee		
CBN	Cost of basic needs	mt	Million tons
CBS	Central Bureau of Statistics	MoFALD	Ministry of Federal Affairs and Local Development
		MoAD	Ministry of Agriculture Development
CFUG	Community Forestry User Group	MoHP	Ministry of Health and Population
CF	Community Forest	MSNP	Multi-sector Nutrition Plan
CI	Common Indicator	NARC	National Agriculture Research Council
CLA	Community Livestock Assistant	NFC	Nepal Food Corporation
CBO	Community Based Organization	NGO	Non-government Organisation
CP-MAS	Central Poverty Monitoring & Analysis System		
		HLNNF	High Level National Nutrition and Food Security Steering Committee
DADC	District Agricultural Development Committee	NRB	Nepal Rastra Bank
DoA	Department of Agriculture	NRI	National Research Institute
DCGC	Deposit & Credit Guarantee Corporation	NeKSA	The Nepal Food Security Monitoring System
DDC	District Development Committee	P	
		NTPF	Non-timber Forest Product
DFTQC	Department of Food Technology and Quality Control		
DLS	Department of Livestock Services	NPC	National Planning Commission
		NLSS	Nepal Living Standards Survey
DRSP	Demand Response Service Providers	PAF	Poverty Alleviation Fund
DP-MAS	District Poverty Monitoring and Analysis System	PPP	Public Private Partnership
ELF	Experienced Lead Farmers	RARS	Regional Agricultural Research Station
FAO	Food and Agriculture Organisation	SAARC	South Asian Association for Regional Corporation
FBA	Food Based Approach	SI	Specific Indicator
FBDG	Food based dietary guidelines	SRI	System of Rice Intensification
FCHV	Female Community Health Volunteer	TEPC	Trade and Export Promotion Centre
FIVMS	Food Insecurity and Vulnerability Mapping System	TYIP	Three Year Interim Plan
FNSSC	Food and Nutrition Security Steering Committee	TWG	Technical Working Group
FNSP	Food and Nutrition Security Plan	UNICEF	United Nations Children's Fund
FtF	Farmer to farmer programme	VAHW	Village Animal Health Worker
FFS	Farmer Field School	VDC	Village Development Committee
FQS	Food Quality and Safety	VMRN	Village Multipurpose Resource Nursery
FDD	Fisheries Development Directorate	WFP	World Food Programme
NAFSP	National Agriculture and Food Security Project	WHW	Women's Health Worker
GAP	Good Agricultural Practice	WUA	Water Users' Association
GESI	Gender and Social Inclusion	GEED	Gender Equity and Environmental Division

## 1. Introduction

The government of Nepal (GoN), with technical support from FAO, has formulated this Food and Nutrition Security Plan (FNSP) that constitutes a chapter in the Agricultural Development Strategy (ADS) for the decade 2013-23. The FNSP also complements the Multi-sector Nutrition Plan for Accelerating the Reduction of Maternal and Child Under-nutrition in Nepal (MSNP). The FNSP complies with the National Planning Commission's (NPC) Three Year Interim Plan (2007-/10), its Three Year Plan (2010-13), the Ministry of Health and Populations National Nutrition Policy and Strategy 2004, and the Health Sector Strategy. The FNSP is intended to serve as the Governments' standard document for food security interventions during 2013-22 for vulnerable populations. A series of M&E indicators, all currently in use, is also recorded to track progress.

Both the FNSP and the ADS have a vision to ensure national food and nutrition security with a specific focus on the agricultural sector as the main vehicle that can deliver it, as well as the main vehicle for economic growth and balance of payments of the Nepalese economy as a whole. ADS's vision statement is *"A competitive, sustainable and inclusive agricultural sector that contributes to economic growth, improved livelihoods, and food and nutrition security."* In addition, the FNSP aims to address severe malnutrition among some of the most vulnerable population.

A team of 14 national experts were tasked to develop the FNSP over a period of six months. The national team covered the following technical fields: human nutrition; field crops; horticulture; livestock and veterinary (two experts who produced a combined report); forestry; fisheries; food quality and safety; rural finance and insurance; gender and social inclusion; and legislation. Nine sub-sector reports have been produced. The Agricultural Insurance and Finance component has now been incorporated in the ADS and left out from the FNSP. The FNSP is organized in two volumes: the Main Report with summaries of the sub-sector reports; and the full sub-sector reports bound as the second volume.

Six of the 9 sub-sector reports summarized in this main report rely heavily for the delivery of their outputs on improved extension (farm advisory) services, and to a lesser extent research to back up extension services. These seven sub-sectors are: human nutrition, field crops, horticulture, livestock, forestry and fisheries. By "improved" reference is made to quality of advice, responsiveness to clients, wider geographical coverage, enhanced communications and networking, and speed of delivery. The sub-sector reports do not, and are not required to, specify how these improved extension services will be delivered because it is a cross-cutting issue that needs to be addressed separately. The envisaged resources for extension services for each of the components are organised under capacity building activities, which the producer groups may wish to access from different sources.

Work on the FNSP began in January 2012 with a validation workshop chaired by the Secretary of the Ministry of Agricultural Development (MoAD) and attended by a wide range of stakeholders including local NGOs and representatives of most of the international donor community. The national team held consultations with other stakeholders in five sub-regions representing diverse agro-ecological zones as follows: Jumla district in the Mid-western Mountains, also known as Karnali sub-

region; Sankhuwasabha district in the Eastern Mountains; Rukum district in the Mid-Western Hills; Kailali district in Far-Western Terai; and Siraha district in Central Terai. These widely dispersed districts were selected as representative of most agricultural conditions in Nepal. The purpose of these consultations was to review past and on-going experiences and lessons learned in rural development. These stakeholders included community organizations, households of different socio-economic backgrounds and castes, farmer organizations and individuals, NGOs, private traders and service providers, and finally but not least, local government that will have increased responsibility to deliver the FNSP. This review and consultation process forms the basis for formulating the various elements of the FNSP.

The team also met with international donor organizations and staff of projects supported by them including the following: Global Agriculture and Food Security Project (GAFSP) managed by the World Bank; Farmer-to-Farmer programme (FtF) supported by USAID; Food and Nutrition Security Information Systems supported by WFP and EU; Demand Response Service Providers (DRSP) supported by the Swiss Agency for Development and Cooperation (SDC); and various farm advisory training components within projects supported by IFAD.

In addition to consultations with key national and international partners at central and district levels, UNICEF is the lead contributor to the nutrition component, while WFP contributed to the monitoring framework of the FNSP. The FNSP is, therefore, a collaboration among national and international partners.

There are some aspects of food and nutrition insecurity that this report will not be addressing, which are covered in the ADS including the following: (1) weak markets and market infrastructure in rural areas for agricultural products are a big constraint on FNS; (2) the social safety net is an important issue that was to have been part of this report but discussions with government and partners have not reached a definitive stage yet (the ADS does not cover social safety nets either); (3) information infrastructure and ICT which is important in the promotion of improved local governance; (4) power infrastructure, important for adding value to locally produced agricultural products and in improving its nutritional value; (5) seed security and relevant institutions; and (6) the issue of fertilizer subsidy.

### **1.1. Links between ADS and FNSP**

The Agricultural Development Strategy (ADS) under the leadership of the Ministry of Agricultural Development (MoAD) with participation from ADB, IFAD, EU, FAO, SDC, JICA, USAID, DANIDA, WFP, WB, DfID, AusAID and UN Women has been in the process of developing a detailed Agricultural Strategy, Policy Options and a Plan of Action. Most of the areas covered by the ADS is of direct relevance and consequence to food security in Nepal and hence the synergies with the FNSP. No attempt has been made to replicate what has already been covered in the ADS, which include the following:

- Agricultural policy and strategy taking a 20 year vision for the development of the sector,
- Land management and property rights issues, including land ownership/management security,
- Reform of the main national institutions such as NARC, Extension, decentralised decision making processes and the involvement of several stakeholders (the public sector, private sector, NGOs, CBOs, farmer organisations and others) in the decision making processes,

- Fertiliser trade and pricing policies – one of the long-running government policies with direct impact on food security,
- Value chain development and strategic crop focus building on the country's comparative advantage and promotion of commercial agriculture targeting domestic and international markets,
- Capacity and institution building,
- Seed security and development,
- Large and medium-scale irrigation infrastructure,
- Rural infrastructure, access roads, community centres and others,
- Agricultural insurance and finance among others.

The FNSP instead focuses on targeting the poorest households as defined by the Poverty Alleviation Fund (PAF). The targeting is necessary to ensure that the poorest households benefit from national level programmes and policies as stipulated in the ADS. It is in this sense that the FNSP is directly linked with the ADS.

## 1.2. Programme Summary

The development objective of the FNSP is to reduce hunger, malnutrition and poverty among the poorest households by improving sustainable agricultural-based livelihoods. The FNSP is organised in 9 components, primarily targeting the poorest households in the country. Table 1.i. presents the latest poverty figures (head count below poverty line) by agro-ecological zones, development regions and urban-rural. Furthermore, the PAF, using the food poverty line has further defined the poor in 4 categories namely, the hardcore poor, ultra poor, medium poor and non poor. The three categories of the PAF definition roughly translates to about half of the population of the poor estimated in Table 1.i. below.

Table 1.i. Poverty in Nepal, 2011.

	Total Population in 000s	Poverty Rate (HC) %	Poor Population in 000s
Urban	4,524	15.46	699
Rural	21,971	27.43	6,027
Eastern	5,812	21.44	1,246
Central	9,657	21.69	2,095
Western	4,927	22.25	1,096
Midwestern	3,547	31.68	1,124
Farwestern	2,553	45.61	1,164
Mountain	1,782	42.27	753
Hill	11,394	24.32	2,771
Terai	13,319	23.44	3,122
<b>Total</b>	<b>26,495</b>		<b>6,646</b>

Source: Nepal Living Standards Survey (NLSS) III, 2011.

The target households are resource poor and access to markets for agricultural inputs and farm produce are hindered by the size of the individual household's assets and operations. The Poverty Alleviation Fund (PAF) categorisation of households has been used to define and target households,



targeting mainly the *hard core poor, ultra poor* and *medium poor*. The productive components of the FNSP has envisaged group formation of 20-25 households by providing a one-off support for critical inputs and capacity building. The groups are also provided with capacity building in sustainable production technologies, group dynamics and marketing through farmer field school and other proven extension service delivery methods. In line with the PAF, the inputs provided are for groups and not individuals and individual group members are required to repay for the inputs they receive at harvest and access the group fund once again in the following season, hence creating a group revolving fund. It is hoped that the producer groups will have sufficient economies of scale to have adequate access to markets. The groups receiving support through the PAF are currently registered with the PAF but the FNSP seeks to identify a sustainable legal basis for the groups, which may have similar status to cooperatives.

Table 1.ii. presents a list of the components with estimated costs by year. A 5-year investment plan has been envisaged with a thorough review of the programme in the 4<sup>th</sup> year to plan for the expansion of the programme for an additional 10 years. The benefit streams from the five-year programme are expected to accrue over, at least, 10 year period, which is similar to the duration envisaged in the ADS. The productive components are designed to reduce malnutrition and lift target households out of extreme poverty, hence results-based principles have been applied. The resource allocation among the nine components are based on opportunities and potential for nutrition and poverty impacts.

At national level the FNSP shall be coordinated by the National Food and Nutrition Security Steering Committee (FNSSP) under the auspices of the National Planning Commission (NPC). The FNSP formulation process has made strong arguments to combine food security and nutrition under one steering committee at national level. The Ministry of Agriculture Development (MOAD) and the PAF shall implement the FNSP using the latter's established and tested targeting and delivery system with direct involvement of the central and decentralised offices in target districts. Therefore, no additional and parallel organisations have been envisaged for the FNSP implementation and coordination. Existing government institutions shall be strengthened, where necessary, to implement the FNSP.

*Rural finance and agricultural insurance* component has been prepared and attached as *Annex 10* in this report but not considered as part of the initial five-year investment plan. This is simply to allow more time for the development of the rural finance and agricultural insurance following the implementation of the proposed FNSP five year investment plan, which envisages the development of producer groups and strong foundations for value chains in agriculture. The analysis presented in Annex 10 shall be revisited following producer group formation as a result of the FNSP first-five year implementation, where demand for the mentioned services will also be thoroughly assessed.

**Table 1.ii. List of FNSP Components and Summary Costs by Year.**



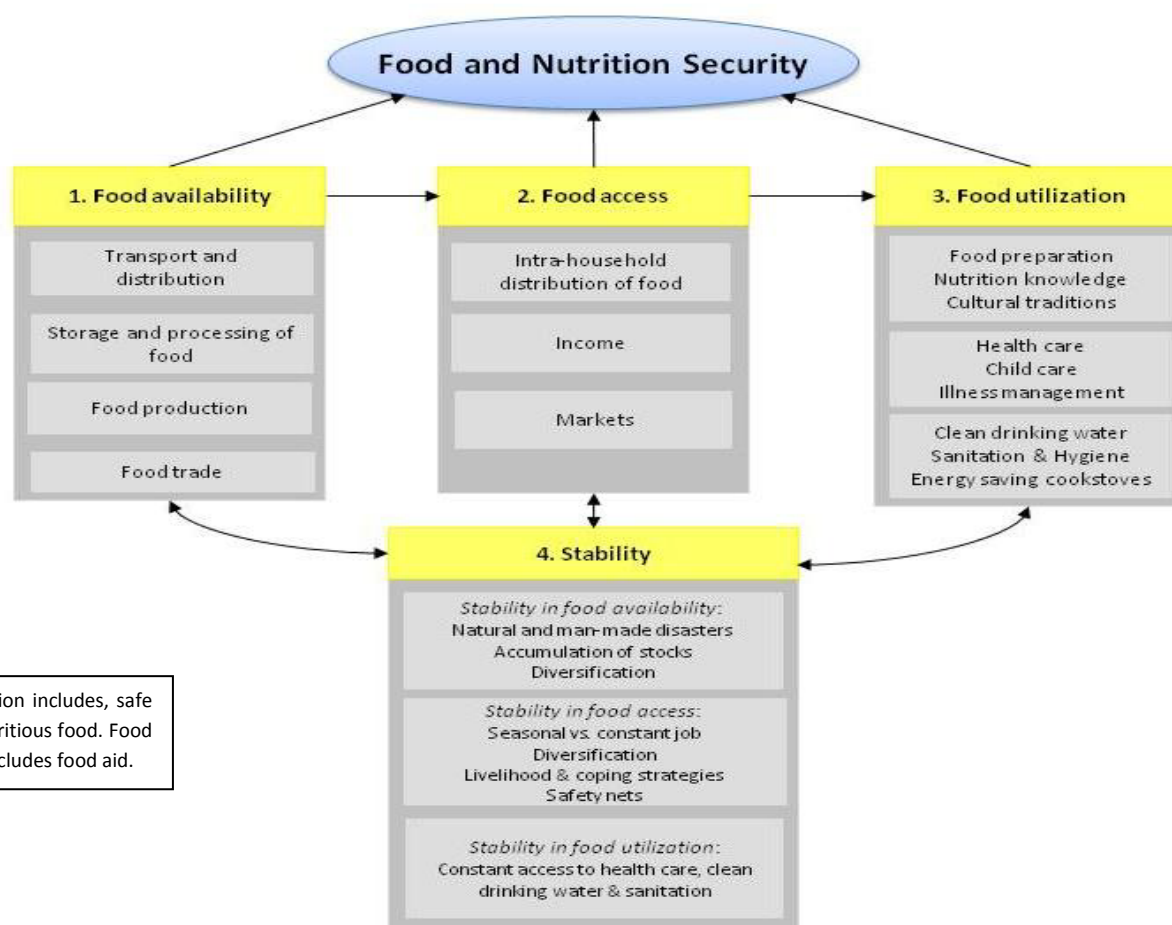
No.	Components	US\$ 1000s					Total
		Yr-1	Yr-2	Yr-3	Yr-4	Yr-5	
1-	Agriculture Crops	3,869	5,142	5,875	897	598	16,380
2-	Fisheries	1,370	2,541	4,018	2,298	1,376	11,603
3-	Food Quality and Safety	985	2,062	635	453	361	4,496
4-	Forestry	3,963	4,154	4,244	886	616	13,863
5-	Gender Equity and Social Inclusion (GESI)	227	682	682	910	910	3,411
6-	Horticulture	2,087	3,405	3,939	969	543	10,943
7-	Nutrition	1,812	1,942	2,349	2,124	456	8,683
8-	Legislation (Right to food, food security)	369	327	247	-		943
9-	Livesock	3,709	5,262	6,241	978	54	16,244
<b>Sub-Total</b>		<b>18,391</b>	<b>25,518</b>	<b>28,229</b>	<b>9,514</b>	<b>4,914</b>	<b>86,566</b>
National Coordination and Monitoring, 5%.		920	1,276	1,411	476	246	4,328
<b>Total Component Cost</b>		<b>19,311</b>	<b>26,793</b>	<b>29,641</b>	<b>9,990</b>	<b>5,160</b>	<b>90,894</b>

## 2. Food insecurity challenges and opportunities

### 2.1. Situation Analysis

Food and nutrition security have three basic components, namely food availability, food access, food utilization, plus stability which is common to all three as shown in Figure 1 below:

Figure 1: The Four Dimensions of Food and Nutrition Security



Production includes, safe and nutritious food. Food trade includes food aid.

## 2.2. Poverty and Food Insecurity

The Central Bureau of Statistics (CBS) has characterised poverty in 2012 in Nepal as follows<sup>1</sup>:

- The poverty rate is much lower in urban areas (15%) than in rural areas (27%);
- There is high variation in poverty rates among the 12 analytical domains used by CBS which are based on overlays of agro-ecological, development regions, and the urban-rural divide;
- Seasonal poverty is highest in April-May and lowest in the October-January;
- Poverty increases with household size;
- Poverty increases with children under seven years of age;
- Female headed households have slightly lower poverty rates;
- Dalits bear a much higher burden of poverty compared to non-Dalits;
- Households headed by agricultural wage workers are poorest while those headed by professional wage-earners are the least poor;
- Poverty falls drastically for households with more than one hectare of agricultural land (*at current average yield and productivity levels – italics added by us to original CBS text*).

## 2.3. Availability

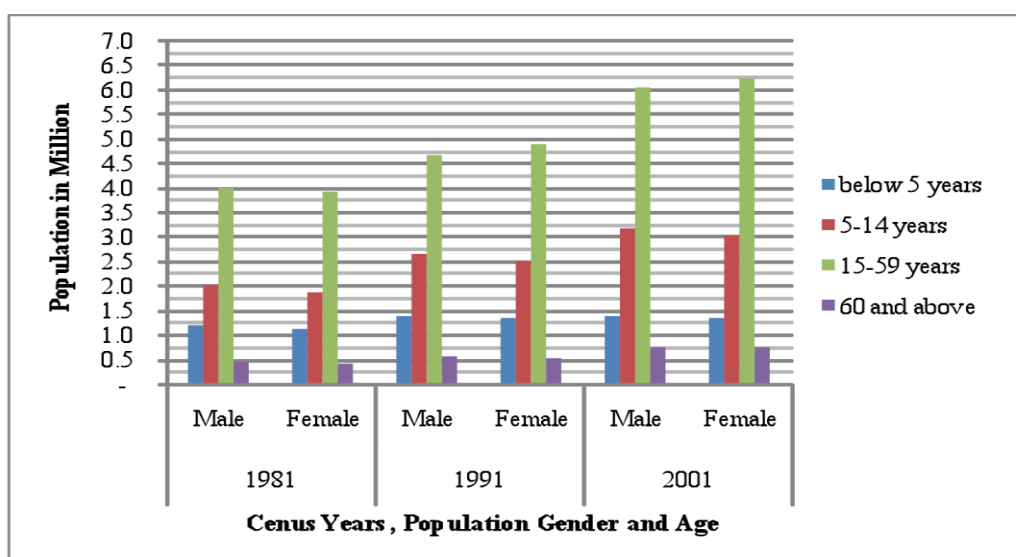
Estimates generally show a decrease of people in hunger during periods of increased national production because of assumed constant distribution of food nationally. This emphasizes only the benefits of policies and programs focused on food availability. Therefore, this review is on food availability due to food production, and other factors like the food storage and processing, transportation and distribution, and food trade. The regional food balance and threats to food production are also discussed.

Nepal's population was estimated 26.6 million at June 2011, with a growth rate of 1.42% annually during 2001-2011. At this rate, the population is likely to reach 33 million by 2021. As is shown in Figure 2 below, the dependency ratio is very high, and the proportion of female to male is also high. Though now rather out of date, these ratios are unlikely to have changed much. Both the high population rate and the dependency ratio have implications for the FNSP, as will be discussed.

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<sup>1</sup> Please see section 2.4.4 for the definition of poverty in Nepal.

**Figure 2: Growth in Population by Gender, and Age Groups 1981-2001**



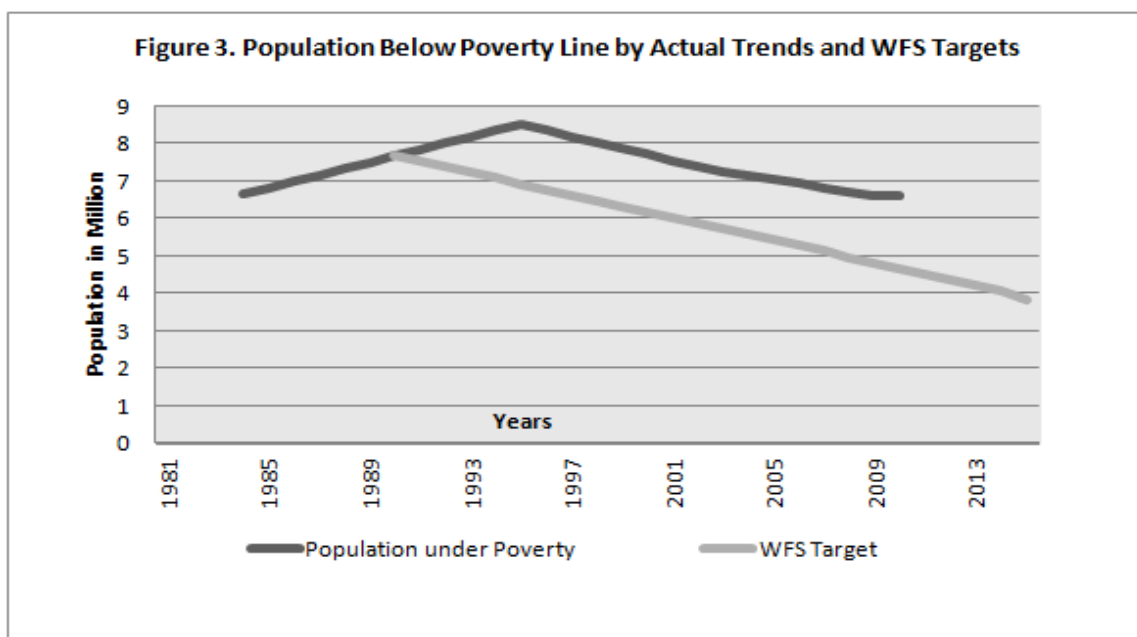
Nepal was self-sufficient in food up to 1990 when population increase outpaced food production. During the following decade substantial efforts were made to restore national food self-sufficiency and that was achieved again in 1999. But this pressure has reduced the resilience of Nepal's agriculture and, following adverse weather conditions and natural disasters, national food production has been insufficient to meet the needs of the population since 2005. Population and cereal production since 1985 have both more than doubled and is set to double again by 2040. The population annual growth rate is falling slowly, and over the last decade population growth rate seems to have been lower than the cereal growth rate as indicated in table 1 below.

**Table 1. Average Annual Growth rate % for Population and Cereals in Nepal.**

Years	Cereals	Population
1981-90	5.3	2.4
1991-00	2.3	2.4
2001-2011	1.7	1.4

Source: FAO and WB 2010.

The FNSP has its origins in GoN's commitment to targets set by the World Food Summit (WFS), the Millennium Development Goals (MDGs) and a guarantee given in Nepal's Interim Constitution that its people have a sovereign *right to food*. However, though seemingly in contradiction to what is said in the paragraph above, these targets and the actual trend line may not converge by 2015 as Figure 3 seems to indicate.



The medium term outlook for food availability is good because cereal yields are the lowest in the region and potential for increase is large as will be discussed later in this report, and in detail in the agriculture sub-sector report.

The prevalence of food and nutrition insecurity varies substantially across the fifteen sub-regions of the country as measured by the hunger index. The highest prevalence of hunger is in the Far- and Mid-Western Hill and Mountain regions where the indices show an “extremely alarming” situation. The majority of the 15 sub-regions fall within WFP’s “alarming” category. The best performing sub-regions, Central and Western Hills and Eastern Terai are still classified by WFP as in a “serious” food insecurity situation. Overall the situation is fragile even when some sub-regions are in food surplus. See Table 1.i.

Production of cereal crops in 2011 was just over 9.5 million tonnes compared to 8.6 million ton last year which, being more than double the 1984/85 level, has more or less kept pace with increasing demand from an increasing population, though in some recent years it has lagged behind. Average yields of rice, maize and wheat at 3.31, 2.50 and 2.41 tons/ha respectively, still have huge potential for increase and, as mentioned already, are the lowest in the region.

The 2011/12 cereal balance was a surplus of about 886,300 tons, equivalent to over 17% of total requirement. But in recent history Nepal’s cereal balance has more often been in deficit. For example in 2009/10 Nepal imported 350,000 tons of food grains, and its average food grain imports for the five years before 2009/10 was 250,000 tons annually.

The livestock sector’s contribution to national AGDP was estimated at about 26% in 2011 compared with over 31% in 2001/2. Over half of this comes from milk, and 42% from meat, with eggs and wool making up the remaining 5%. Buffalo contributes 71% in milk production and 61% in meat production.

Currently animal protein sourced food (APSF) in the Nepalese diet is only about 13% (of which 7% from milk, 6% from meat, and 1% from eggs). This is very low considering that about 30% of APSF is needed for optimal nutrition. UNICEF has reported that 46 % of children aged 6-59 months and 35% of women of reproductive age are suffering from anaemia, largely due to insufficient APSF. Demand for APSF is increasing by 8% to 10% annually as per capita income increases. But as current local production of APSF is insufficient to meet demand, imports of dairy, meat and eggs are rising, currently amounting to NRs 5.7 bn/yr. The potential to meet APSF demand domestically is well within reach, as the sub-sector report on Livestock makes clear.

Availability of fish for food has increased by 900% from 225 gms/capita/yr in 1980 to 1.95 kg/capita/yr in 2011 with supply growing at over 6% annually. In 2009/10 fish contributed about 2.7% to AGDP. Demand for fish exceeds supply by a wide margin. More than 60% of the present consumption is imported from India alone and the demand is increasing quite rapidly. Fish are imported from 18 countries. 5,185t, equivalent to NRs.232 million of fish and fish products were imported in 2010/11. At the same time export potential for trout, in which Nepal has a regional comparative advantage, is high. There is no major domestic marketing problem. Fish can be sold locally with only the existing limited transport/cold chain. A good market network exists in the country for surplus production.

Again, the potential to meet this continuing rising demand for fish products from domestic resources is within short-term reach, as Component 2 on Fisheries also shows.

## **2.4. Access**

### **2.4.1. Access and Production**

Rising production may not have much impact on people's *access* to food, and does not take into account the quality of food accessed or consumed. A strictly calorie-based approach is incompatible with the definition of food security. The stress on safe and nutritious food, as well as the final goal to ensure an active and healthy life calls for a broader analysis of people's diet. Even temporary periods of hunger can be debilitating to long term human growth and development. We may further distinguish *acute* from *chronic* hunger: the first situation occurs when insufficient intake of food is temporarily caused by an external shock, whereas the latter indicates a shortage of food on a persistent basis. Therefore, the discussion in the rest of this section focuses on various aspects of poverty as the major determinant of access of people to foods.

Food and nutrition access is the ability of a household to obtain enough food of adequate nutritional quality to meet its minimum nutrient needs. This ability may be constrained by financial, social or educational barriers. These constraints can affect home farm production, food stocks and purchasing power. In these conditions, household members may do one or more of the following: (1) sell livestock (as a result of this, as already mentioned, livestock's contribution to AGDP has fallen during the last decade, from 31% in 2001/2 to 26% in 2010); (2) migrate in search of work (in recent years migration has increased dramatically and most rural families now have one or more members who migrate at some time during the year); or apply for external food assistance.

Although the percentage of the population that is classified by WFP as food insecure has fallen slightly from 16% (about 4.5 million people) in early 2010 to about 15% in early 2012 as a result of recent good cereal harvests, the trends in livestock's contribution to AGDP and in outmigration

indicate an increasingly fragile situation. 1.8 million people, about 6% of the population, were receiving staple food supplements in 2012.

Other poverty indicators seem to show that access to food is improving. The percentage of households classified as poor on the basis of consumption figures that include access to food has reduced from 41.8% to 25.6% during 1995/96 to 2010/11.

The Nepal Food Corporation (NFC) is a government agency that distributes food where availability or access is insecure. NFC's original purpose was to alleviate famines and temporary food shortages, following the 1972 famine in Karnali region. In recent years NFC has operated 2 percent of the rice surplus in the country, roughly 25 000 MT, procuring rice and paddy from market and farmers at competitive prices. The NFC also operates some 33 000 Mt of buffer stock, 7 000 MT of the SAARC regional stock and any food aid channeled through the government. In addition to rice, the NFC also operates in meat market with a view to stabilize prices.

The determining factor for the NFC geographic targeting is mainly road access, while household targeting is the discretion of District Food Committee. The NFC subsidizes 100% of transportation and storage costs. A price differential of up to 10% from purchase price is the discretion of NFC management, price beyond this has to be decided by the NFC board. The board members include the MOAD, Ministry of Home Affairs, Ministry of Commerce, Supplies and Transportation, Ministry of Finance, civil society and political parties. NFC is active in 30 districts mainly in the Far- and Mid-Western Hills and Mountains. The NFC also holds small national food buffer stocks, currently 15,000t. It is beyond the scope of the FNSP to adequately assess the efficacy of the NFC against alternatives as well as various direct and indirect effects of the market operations on expectations, behaviour and crowding out the private sector in the market place. However, such a study of the NFC is necessary with specific policy recommendations, reserve governance, staple food price policy and food safety nets, which the FNSP does not endeavour to do.

#### **2.4.2. Access and Farm Size**

Farm size has an obvious direct correlation with access to food and with FNS. 75% of farm holdings are less than 1 ha and 50% are less than 0.5 ha. Land holdings are particularly small in the Far- and Mid-West, and Central and Western Hills, which are also areas of greatest food insecurity. But, as mentioned above, crop yields are the lowest in the region and, as the sub-sector report on agriculture shows, have large potential for increase.

**Table 2: Yields (tons/ha) of main cereal crops, 2011/12**

<b>Cereal Crops</b>	<b>Yield (tons/ha)</b>
Average	2.48
Rice	3.31
Maize	2.50
Wheat	2.41
Barley	1.24
Millet	1.12

Source: MoAD 2011

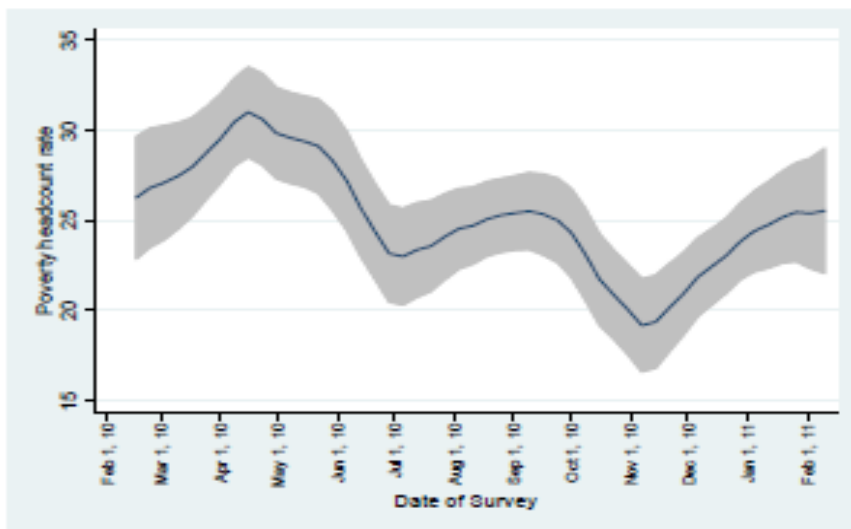
At current average yields and nutrient requirements based on the Nepalese diet, a farm household in the Mountain region needs 0.64 ha of land to subsist, 0.52 ha in the Hills, and 0.42 ha in the Terai. An increase in cereal yields will obviously mean that more small farmers can achieve subsistence level or above. But such an increase will also mean that more land can be used for livestock production on each farm, and this would lower the risk of food and nutrition insecurity. The livestock sub-sector report, Annex 9, shows how yields of animal products can be increased.

### 2.4.3. Access and Stability

Access by vulnerable people to food is also affected by some underlying stability factors of which the following need special mention: a) the pattern of seasonality related to agricultural practices; b) transport bottlenecks; and c) the rise in food prices relative to real wage rates.

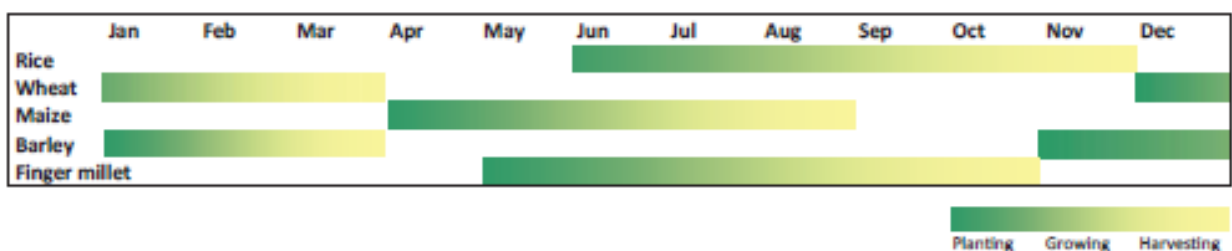
a) Seasonality: Variations in the incidence of poverty, and inadequacy of foods by month, are substantial. For example, the head count of poverty varies from 17% to 34% during the months of November to April as shown in Figures 4 (a) and (b) below. Such variations are partly because of seasonality in the production of cereal grains as shown in the cropping pattern in the next figure (b). Such variations would be further amplified in the case of extreme drought and rain, failure of markets to deliver inputs, natural disasters, etc. Thus, another task for agriculture is to develop calendars of crops, livestock and aquaculture, in the face of climate change, to stabilize the supply of foods across all months (refer to sub-sector reports on agriculture, horticulture, livestock, fishery and forestry for details).

Figure 4 (a): Seasonal Poverty and Cropping Patterns



Source: CBS; NLSS, (2010/11) Poverty in Nepal

Figure 4 (b): Seasonal Poverty and Cropping Patterns





Covering the main season crops only.

Source: National Planning Commission, Food Security Atlas of Nepal

b) Seasonal variations in poverty are also due to transport bottlenecks, as well as food reserves in public godowns and in traders' stocks.

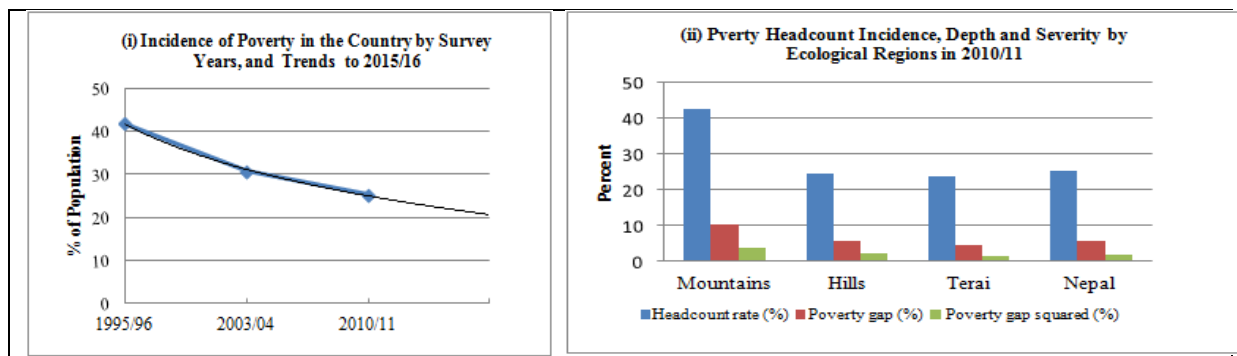
c) Real wage rates: While the overall CPI for urban areas rose by 9.6% annually, the prices for food and beverages rose by 14.1% annually during the past decade, while nominal wages declined compared to food prices. Thus, real incomes for salary and wage earners have declined. Inflation in consumer prices of cereals and pulses has been high and volatile.

#### 2.4.4. Access by Socio-Economic Classes and Locations

The estimation of poverty in NLSS III is based on a cost of basic needs approach (CBN). The overall poverty line is obtained by aggregating the food and the non-food poverty lines. The food basket of the poverty line is constructed by estimating how much the poor spend to reach a minimum caloric requirement of 2,220 Kcal per day. The aggregate poverty line, based on 2010/11 prices, has been estimated at Rs19,261 per head per year; the food poverty line is Rs11,929 and the non-food poverty line Rs7,332. Changes in the incidence of poverty during 1995/96- 2010/11 and its trend projections to 2015/16 are provided in Figure 5 (i) below, and the incidence of poverty by ecological regions are provided in Figure 5 (ii). According to the figure in panel (i), the incidence of poverty has reduced from 41.8% to 25.2% during 1995/96 to 2010/11. If the trend continues, the incidence of poverty is likely to remain around 24% even by the year 2015/16. If the trend in the incidence of poverty does not fall, then the government needs to design an effective plan of action, for which recommendations are provided in Chapters 5 and 6 below.

Figure 5 (ii) provides a description of poverty by ecological regions that can be linked with the regional food balances discussed in the previous section. Though the country has an average incidence of poverty of 25.2 %, the incidence of poverty in the mountain regions is as high as 42%, whereas the average incidence of poverty in the hills and the Terai is around 24%. This figure also illustrates the depth of poverty (poverty gap) and severity of poverty (squared poverty gap) by ecological regions and for the country. According to these figures, the depth of poverty is highest in the mountains at about 10% and the degree of inequality among the poor people in the mountains is also highest at nearly 4%.

**Figure 5: Trends in the Incidence of Poverty in the Country during 1995/96-2010/11, and the Poverty Gap and Squared Gap by Ecological Regions in 2010/11**



Source: NLSS data sets

#### **2.4.5. Access in Remote Areas**

The Government continues to implement agriculture programmes aimed at increasing production and productivity in remote areas by developing appropriate agriculture technologies based on comparative advantages and extension including: (a) stepping-up output of minor cereals and beans; (b) intensifying agricultural infrastructure development; (c) supplying subsidized inputs like fertilizers; (d) procurement of locally produced grains to support local markets; (e) the storage of imports at national, regional, and district service centres; and (f) supply of food to inaccessible areas by NFC, as explained earlier.

### **2.5. Utilization**

#### **2.5.1. Definition**

The term *under-nourishment* defines insufficient food intake to continuously meet dietary energy requirements; it is commonly used to describe people whose diet does not provide adequate calories, protein for growth and maintenance, and micronutrients; or they are unable to fully utilize the food they eat due to illness. Ensuring adequate *nutrition* refers to a diet's quality. A diet rich in proteins, essential fatty acids, and micronutrients has been proven to improve birth weight, growth, and cognitive development while leading to lower levels of child mortality. While it is argued that at least 51 different nutrients are needed in adequate amounts by human beings, there are 19 essential micronutrients for physical and mental development, immune system functioning and various metabolic processes. Most development programmes have focused on three micronutrients, lack of which have devastating consequences for many: vitamin A, iron, and iodine. There are potentially many more people who do not have an adequate amount of other essential micronutrients such as vitamin B12, zinc and folate. In view of these, the section below deals with trends in child anthropometry, women's BMI and some micronutrients.

Food utilization is a process involving the selection, preparation and food distribution among household members. This distribution can be influenced by the level of general understanding of nutrition, as well as gender, age and culture. For example, it is customary in Nepal for women to eat after men, which in practice often means that women go hungry; similarly it is customary for male children to be favoured in what they eat. Thus a household can be food and nutritionally secure overall, yet adolescent girls and pregnant and nursing women in the same household can display symptoms of malnutrition that impact not only on them but their children.

The sub-sector report on Human Nutrition (Annex7) shows that household food consumption behaviour (i.e. utilization) is a major contributor to food and nutrition insecurity and is second only to the problem of access. It cites evidence from the Terai region that has some of the highest malnourishment indicators yet has an overall food surplus. It also finds that, overall, the greatest challenge is the lack of knowledge among the population on nutritional values of locally available foods and their role in health and nutrition. The component explains how this challenge can be addressed.

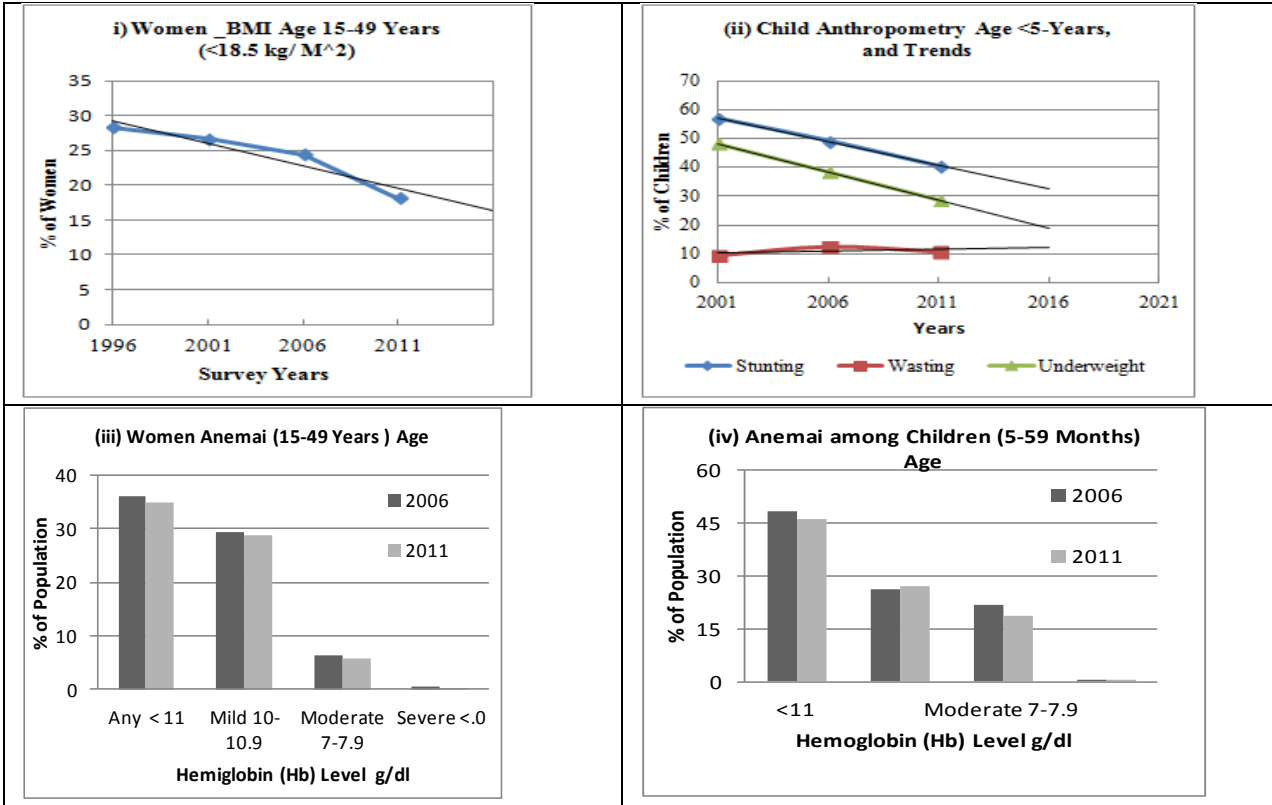
#### **2.5.2. Utilization of Food and Nutritional Outcomes**

Nutritional outcomes for women are generally measured by trends in body mass index (BMI) in the reproductive age group (15-49 years) and specifically by the level of haemoglobin (Hb) in their blood. Likewise, the nutritional outcome among children below five years of age (or 6-59 months) is generally measured by child anthropometry such as under-weight, stunting and wasting, and

specifically by the level of Hb. Figure 6 below presents these indicators as: (i) BMI of women 15-49 years of age during 1996-2011, and trend projections for 2016; (ii) child anthropometry (below 5 years of age) during 2001-2011, and trend projections to 2016; (iii) level of anaemia for women by mild, moderate, severe or any category in 2006 and 2011; and (iv) the level of anaemia among children by mild, moderate, severe or any category in 2006 and 2011.

According to these figures, the most severe manifestations of under-nutrition are underweight children (about 40% incidence), child stunting (about 30% incidence), low BMI of women at (20% incidence), and anaemia - which is nearly 35% among women and as high as nearly 50% among children. In general, the anthropometry and anaemia levels indicate the urgent needs to increase the consumption of good diets and creation of environments for the absorption of food nutrition in the human body.

**Figure 6: Trends in Malnutrition**



Source: Nepal Demographic and Health Survey Reports for 2006 and 2011.

Under-nutrition has become a major problem in the country and is aggravated by food insecurity and poverty along with other underlying causes of malnutrition. It has been considered as one of the determinants of development, so much so that improvements in the nutritional status alone would increase the national incomes by approximately 2-3%. In addition to the deficit in total energy intake, there are six major problems affecting the nutritional status of the population in Nepal, as follows: (1) high prevalence of low birth weight babies, mainly due to poor maternal nutrition; (2) childhood under-nutrition indicated by stunting; (3) chronic energy deficiency among mothers; (4) vitamin A deficiency leading to night-blindness in pregnant women; (5) iron deficiency anaemia among women and children who lack of dietary diversities; and (6) iodine deficiency disorders. In addition, lack of optimum dietary habits leads to many other non-communicable diseases.

The UNICEF model suggests the following relationship between policy options and causes of malnutrition: (a) Improved food intake: steady improvement in availability of and access to food throughout the year, vitamin A and iron supplementation programmes, iodine fortification for direct targeting; (b) Lowered infection rate: steady decline in diarrheal diseases, measles; (c) Improved immunization coverage preventing pneumonia and other infections; (d) Improved water supply and hygienic behaviour; and (e) Improved educational and economic status are the basic causes that enable the population to improve its maternal and child care practices.

**2.6. Regional Food Balances**

Food balances by regions are important because there is generally food deficit in remote regions such as the mountains and hills where access in winter months is difficult. As highlighted earlier, much of the operations of the Nepal Food Corporation (NFC) are related to the supply of food to the mountains and hills either from the surplus production in the Terai or through the import of foods. The MOAD computes the food balance by regions using the five cereal grains (paddy, maize, millet, wheat and barley), and the norms for annual requirements such as Mountains 191 kg/ capita, Hills 201 kg/capita, and Terai 181 kg/ capita. In this context, the regional food balance, based on edible food production and food requirements, are presented in Figure 7 below as follows: (i) Mountains (ii) Hills (iii) Terai and (iv) national aggregate.

**Figure 7: Edible Cereals grains Production and Requirements by Regions and for the Country**



3. Source: Based on MOAD Dataset on Food Balance

According to Figure 7 (i) above, the mountain region had a food grain deficit of nearly 0.2 mt in 2000/01, but production steadily increased and there was food balance by the year 2010/11. Likewise, Figure 7 (ii) shows that the hills region had a food deficit of about 0.5 mt in 2000/01 and again food production steadily rose until it too had food balance by year 2010/11. In the case of the Terai Figure 7 (iii), food production has a positive balance of 0.5 mt. But the figure 7 (iv) shows that the country as a whole has maintained a knife edge balance in food grains supply even though there was some surplus production in the year 2010/11. The above implies that the problem of food grains in the country is more one of internal transport, distribution and marketing of food grains rather than the overall capacity to produce. Of course, the country is frequently deficient in edible food grains production, which is related to the many threats to production as addressed below.

## **2.7. Threats to production**

The main threats to production relate to the degradation of natural resources such as land, water, biodiversity, dependence on rain-fed agriculture, poor management of irrigation, lack of quality seeds/ breeds, lack of fertilizers/ feeds, crop/ animal diseases, insects, pests and viral attacks, lack of transport, poor post-harvest handling/ processing facility, lack of competitive/ efficient markets, inadequate standards, low volume of exports, and volatility of prices of farm inputs and outputs. This is particularly chronic in the mountain regions. Likewise, policies related to rural and agricultural financing, high rate of interest, fluctuation of exchange rates, and custom duties on inputs/ outputs are also frequent problems.

The threats to food production and households' access to it vary by climatic regions. In the mountain regions the major threats to production are climatic changes, unstable water springs and stream flow, decline in pastureland and out-migration of labour force. In addition, people's access to food is adversely affected by lack of transport facility and development of markets. Traditionally, rice consumption was very limited or non-existent in the mountain districts, which has been introduced in the diet through different programmes over the recent past. This may have had some impact on local food production and demand for locally produced food items.

In the hills region, similar major threats to production are related to declining water sources, increasing landslides, rapid decline in soil fertility and outmigration of labour force. In addition, the Dalit and ethnic communities have only limited access to agricultural resources.

In the Terai region, the main threats to production include increasing intensity of flooding, alluvial river deposits, river erosion, decline in soil fertility and insufficient supply of fertilizer, trans-border crop and livestock diseases, shifting land use from agriculture to urban development, and slow growth of agricultural productivity compared to the adjoining state of India. In addition, indigenous Terai communities lack access to agricultural resources. Urbanisation and increasing pressure on land for housing purposes have also limited the amount of land available for crop production, particularly in the Hills and Terai regions.

## **2.8. Grain Reserves**

The food grains reserve and storage capacity in the public sector such as the Nepal Food Corporation (NFC) is limited to about 33,000 MT at its peak. NFC also provides transport subsidy for food grains to 30 districts in the mountain region. This transport subsidy for lorry and air transport varies by district depending on practical road access. It appears that the NFC has low quality storage facilities, insufficient funds for timely food procurement, an inefficient transport system in mountain and hill

regions, inadequate monitoring, and vulnerability to market forces. Additionally, the SAARC regional grain reserve of 200,000t, to which Nepal's contribution is limited to 7,000t, is yet to be fully operational.

It was beyond the scope of the FNSP to assess the various modalities for grain reserve, including the current system implemented by NFC. In view of the poor transportation and communication networks in Nepal as well as the seasonal inaccessibility of some areas, it is important to conduct a detailed assessment and devise well-informed policy on grain reserve management, which has been suggested in Annex 8, Legislation and Policy.

## **2.9. Cross-cutting issues, challenges and opportunities**

### **2.9.1. Gender Equality and Social and Geographic Inclusion (GESI)**

The challenges and opportunities for GESI are based on establishing mechanisms at the policy, planning and implementation levels to ensure that GESI is mainstreamed within FNSP, specifically as follows:

- Capacity building in the Gender Equity and Environmental Division (GEED) under the Ministry of Agriculture Development (MoAD) for farming and implementing agriculture policies, plans and programmes from GESI perspectives;
- collection and dissemination of national level GESI-based statistics at MoAD/GEED as part of the monitoring and evaluation system, providing feed-back for adjusting plans and policies;
- establishment of GESI units at district level with responsibilities for planning including budgeting, implementation and monitoring and evaluation/auditing of agricultural programs from a GESI perspective;
- improved participation of men and women farmers from all social groups in agricultural development programmes implemented at district, sub-district and community levels;
- making the reformulated PPP agricultural extension service GESI responsive;
- improved access for farmers (from all gender, caste and socio-economic groups in all regions and sub-regions) to means of farm production (land, credit, inputs such as seeds, fertilizers, improved technologies and markets);
- mainstreaming GESI into agricultural research and technology development in all geographical regions.

### **2.9.2. Environmental sustainability**

The agriculture, livestock, forestry and fisheries reports each propose action plans that duly recognize the importance of environmental sustainability. The agriculture sub-sector report proposes increased emphasis on traditional crops as part of a mixed farming system that is more resilient to agro-ecological shocks; and on improved irrigation that can, apart from increasing yields of cereal and cash crops, produce more fodder and crop residues that can support more livestock in the farming system. Annex 9. livestock, makes recommendations on how improved animal genetics and veterinary services can respond to this increased availability of animal feed. And Annex 4. Forestry, in particular makes recommendations on how farming and agro-forestry livelihoods can be sustained within a largely forestry or conservation area environment. Annex 2. Fisheries, shows how sustainable livelihoods can be improved on natural water bodies, as well as new impoundments primarily designed for hydro-electricity or irrigation.

### **2.9.3. Research**

The ADS has made detailed proposals for the restructuring and decentralisation of the Nepal Agriculture Research Council (NARC) to become more directly and locally responsive to the research needs of farmers, agro-enterprises and local government. This would be a good strategy in any country but it has special application in Nepal with its vast variation in agro-ecological conditions. Decentralization will facilitate a response to the specific wishes of the DDCs and VDCs, and to the needs of different types of farmers (subsistence, semi-commercial, and commercial), cooperatives and agro-enterprises (small, medium, and large), and specific agro-ecological areas in the Terai, hills, and mountains. Decentralized research also links well with the strategy on privatization of the extension services (where axiomatically privatization means decentralization).

Under the proposed strategy NARC will not implement any research projects and programmes. Rather, it will formulate agricultural research policies, maintain international linkages, set national standards, and assure quality outputs and outcomes through monitoring and evaluation.

Basic research, long term strategic research, applied research and adaptive research, some of which will be private (CBOs and NGOs for example) in line with part-privatization of extension services, will be the responsibility of National Research Institutes (NRIs) and agro-ecologically based Regional Agricultural Research Stations (RARS). Collaborative and action research will be under the responsibility of local (e.g. provincial/state) research centres and only action research will be managed at village level. Provincial and local level research activities will be managed and monitored according to NARC standards. Central and provincial level research centres will provide back up to local level stakeholders like community based centres, cooperatives, agro-enterprises, and local government. The size of NARC headquarters will be small, and civil service staff numbers in research will not increase although sub-contracting of private research may increase overall staff numbers from time to time. Investment in public research institutions will be reoriented towards public goods such as reducing poverty, food and nutrition security, food safety, bio safety, mitigating effect of climate change, environment and biodiversity conservation.

The proposed ADS strategy also envisages specific initiatives for integration and strengthening of the research, extension and education triangle. NRIs and RARSs will collaborate with post-graduate education according to subject matter. Extension services, partially privatized, will link to local research centres so that collaborative and action research is promulgated amongst the local community.

### **2.9.4. Extension**

Reform and improved outreach of the extension services is one of the national programmes in ADS. This section discusses salient features of some successful approaches that have been tested on a relatively smaller scale in Nepal and elsewhere. The challenges and opportunities for extension are based on the following principles: (1) numbers of staff in the public sector should be appropriately balanced, but (2) after capacity building and reorientation they should administer, target, monitor and evaluate an expanded service that relies on (3) participation of contracted front-line private sector extension operators; they should adopt a pro-poor, pro-marginal groups, pro-remote dwellers, and pro-FNS approach as part of a decentralized PPP extension system directed and administered largely by local government, technically supported by relevant line ministries.

Key elements in this approach are:



- Targeting by type of farmer (subsistence, mainly subsistence with some marketable surplus, and commercial), by commodity, by market (domestic or international), and by agro-ecological area (e.g. Terai, hills, mountains);
- Devolution to the lowest administrative level with option to decide whether such level is the district, the VDC or the municipality, based on resources and capabilities;
- Major involvement by time-bound contract of private sector, cooperatives, international NGOs, community based organizations (CBOs), individual resource persons, universities and training institutions into various forms of public-private partnerships (PPPs).
- Establishment and capacity building of a network of mainly private contracted village extension workers.

Seven of the 9 sub-sector reports summarized in this report rely heavily for the delivery of their outputs on improved extension (and research) services. These sub-components are: human nutrition, agriculture, horticulture, livestock, forestry, fisheries, and rural finance and insurance. “Improved” refers to quality of advice, responsiveness to clients, wider geographical coverage, enhanced communications and networking, and speed of delivery. As mentioned earlier, the ADS has addressed the extension service delivery issues adequately and the FNSP does not attempt to replicate this here.

Three ways in which extension services can be delivered are discussed: two of them are well established and proven in Nepal; the third is proven outside Nepal and could be piloted as a complementary add-on to the first two. These are (1) Government, (2) Demand Response Service Providers (DRSP) and Farmer-to-Farmer (FtF), and (3) Vouchers (or Coupons). The recommended strategy is a combination of all three:

- (1) **Government.** In line with the Local Self Governance Act 1999, political, institutional, fiscal and financial power, and authority for planning and management responsibilities have been devolved to local level. As a result the government extension service is well organized down to district level, and extension functions have been devolved to the DDCs. But the extension system has been operating under two ministries, namely the MOAD and MoLD with most of the power and authorities including recruitment, transfer and career development activities for the extension staff and allocation of budget being controlled by MoAD. Thus any support for an improved extension system should redress this imbalance in favour of MoLD. However, in some districts DDCs have started to allocate some of their budget to the district extension service.

Currently the extension system, except in a few cases, does not extend effectively to village level, and overall is estimated to reach only between 10% and 15% of farm households in terms of front line delivery of advice to farmers. Indeed, as an arm of government it has wider responsibilities than just advice to farmers, and even though that is nominally its most important task, in practice it is eroded by more intrusive tasks. Monitoring, crisis management, statistics, district development and other committees, and administration are some examples. Even if extension officers have adequate transport (though that is rarely the case) some of these other tasks are often more comfortable for the average extension worker than trying to reach distant and disadvantaged groups. Finally, they have the potential, though not yet the trained capacity or experience, to form partnership contracts with private advisers.

- (2) **Demand Response Service Providers (DRSP) and Farmer-to-Farmer (FtF)** are ways of contracting private advisers to support a decentralized extension system, and have been supported and piloted by a group of donors. Commercial and large farmers in the more advanced farming areas such as Chitwan and Ilam are already contracting well qualified professionals or even paying informal fees, in cash or in kind, to government extension officers. For the large majority of farmers who aspire to rely on government extension services but rarely actually receive them, MoAD now formally regards DRSP as effective and largely proven, at least in the regions and districts where it has been tried, including Western (Palpa district), Karnali (Jajarkot), Far-West (Kalikot), and Mid-west (Dailekh and Achham), Central-East (Ramechhap, Okhaldhunga, and Khotang) and others, a total of eight districts. MoAD notes that DRSP works well with another of its strategies, Farmer Field Schools. It notes also that it is an effective way of employing retired but valuably experienced government extension officers, and of promoting two other proven initiatives called “farmer-to-farmer” advisers, and Experienced Lead Farmers. Although MoAD approves of these initiatives, there are still issues on procurement procedures that the Food Security Donor Group would like to progress regarding how DRSP works with VDCs and in accordance with the Local Self Governance Act and with the Ministry of Federal Office and Local Government.

Swiss Development Cooperation, a lead donor and practitioner for DRSP, estimates that DRSP can reach perhaps 25% of farmers in the foreseeable future. Much of the investment and effort is focused on building capacity in MoAD’s extension service and other agencies to contract, monitor, target and manage the private advisers. While this is a rational and efficiently geared use of MoAD extension workers’ time, it does mean that they spend less time doing front line advisory work. Thus it would be misleading to add 25% to 10-15% and conclude that DRSP plus MoAD extension can reach 40% of farmers; the figure is likely to be closer to 30%, possibly as much as 35%. What then is the solution for the large majority of farm families for whom there seems no real prospect of being impacted by extension services under FNSP, particularly when the recommended plan is to put much more emphasis on extension than at present, and at the same time to target the more remote and disadvantaged farmers and rural families?

- (3) **Vouchers** to support private extension services have been used successfully in just such situations but not yet in Nepal, at least not for extension services. The use of vouchers was debated in an ADS Policy Options Workshop on 16 September 2012, not only for extension but also for fertilizer, and was generally approved. Although vouchers have been recently successful in similar circumstances in Albania, Estonia, Kosovo and Tanzania and elsewhere, they would have to be piloted in one or two districts in Nepal first to ensure that local adjustments to the model can be made before further expansion.

The model is envisaged as follows:

A voucher for extension services is a piece of paper with a nominal value printed on one side that is deemed to be the value of a day’s advice by one private adviser, plus daily subsistence allowance including transport, plus a percentage for administration costs. They can also be divided into half days, and be ranked in value for senior, standard and junior levels. On the other side of the paper is self-monitoring information that denotes, for example: location, name and nature of the producer group; dates of issue, validity, service delivery, and redemption; names of the issuing officer in local government, the line ministry officer, and the selected private technical adviser.

The development objectives for the use of vouchers, in order of importance, are as follows:

- a) Administration by local government with only technical advice provided by the MoAD or other line ministry. The vouchers would empower local government who would target them and who would be financially compensated for administering them. GoN has recently instructed VDCs and DDCs to allocate at least 15% of the total block grant to the agricultural development. They should now be further instructed to allocate a substantial part of this to extension, or MoAD could allocate part of the block grant in the form of vouchers for extension.
- b) Empowerment of producer groups, farmer field schools, and individual farmers. A producer group or farmer in possession of a voucher is unequivocally empowered because it is they that ultimately make the choice of adviser, and it is they that drive the whole system from the bottom up. Moreover, it becomes obvious to an individual farmer that his/her voucher pooled with the producer group is more effective than using a single voucher only for him- or herself; thus the cohesion and empowerment of the group is strengthened by vouchers. This further strengthening of producer groups, already good and with a sound base in Nepal, is critical to achieve the sort of level of outreach that will underpin the success of the FNSP and the ADS.
- c) Monitoring and evaluation is helped by the voucher system and to an extent they are self-monitoring. It greatly reduces administration time by extension staff. IFAD, which supports the ADS, has an internal requirement for projects that no programme could be deemed successful until the beneficiaries said so. Vouchers would not measure impact or outcomes, for which normal M&E would be required, but would provide a clear initial guide on where, how and on whom the vouchers had been spent.
- d) As temporary assistance in managing change, to introduce farmers and producer groups to the value of hiring private advisers, and as a vehicle to apply subsidy.
- e) To reduce or eliminate fraud and corruption in a free market where farmer choice rules.
- f) To approach in the space of a few years the proper budgetary amount that should be spent on agricultural and other extension, i.e. about 2% of AGDP.
- g) It would support DRSP and FtF, but unlike DRSP and FtF would drive the system from the bottom up, not from the top down.

Vouchers would be 100% subsidized for the first few years, i.e. it would be an investment cost, hopefully supported by donors. Added to this there would be training and capacity building of local government and line ministries in how to administer the voucher system so that they support DRSP, FtF, ELFs, farmer's facilitators and FFSs. Subsidy can be gradually withdrawn by asking beneficiaries to pay for an increasing percentage of the face value of the vouchers, say from Year 4. Groups that need to be specially targeted can continue to receive subsidy at varying rates over specified periods.

Thus a voucher is not just a different way of paying for a private advisory service; it is a useful and adjustable administration tool that assists targeting, monitoring, and applies varying levels of subsidy.

### **2.9.5. Institutions, policies and legislation**

The overall direction of the evolution of institutional policies is to devolve support to agriculture and rural development, and thus FNSP, to the local governments, to create a mechanism for the peoples' right to food, and to make it effective under law, but much remains to be done in this direction.

At the institutional apex, Government has established the High Level National Nutrition and Food Security Steering Committee (HL NNFSSC) under the NPC and chaired by the Prime Minister and in his absence by the Vice Chairperson, with responsibility to coordinate the policy and the implementation of food and nutrition activities across different ministries.

There is also a Nutrition and Food Security Coordination Committee (NFSCC) chaired by a NPC Member. This committee meets more frequently than the HL NNFSSC, and includes officers of five key ministries: Health and Population (MoHP), Education (MOE), Agriculture Development (MoAD), Federal Affairs and Local Development (MOFA), and Ministry of Local Development (MOLD), in addition to development partners and others.

The line ministries are responsible, through local government, for coordinating food and nutrition security in sectoral programmes, for mobilization of resources and implementation through their regional and district networks, and for carrying out monitoring and evaluation of the implementation process. At least seven ministries are involved, namely: agriculture, commerce, health, poverty and cooperatives, local development, forestry, education, as well as the Poverty Alleviation Fund (PAF) which is independent of any line Ministry.

More specifically, the National Planning Commission (NPC) will be tasked with integrating sectoral plans where they involve more than one Ministry. This will mean an amendment of the National Planning Commission Formation and Operation Order, 2067 (2010) by stipulating that: (1) NPC has primary responsibility to integrate sector plans and budgets of one Ministry that have an impact on the programmes of another sector and will report to Parliament accordingly, and; (2) NPC should verify that 5 year plans are compatible with long-term strategic policies and plans adopted by Government; and that one year plans and budget allocation are compatible with the five year plans.

There are two separate platforms for the donor community and development partners: the National Nutrition Group (NNG) and the National Food Security Working Group (NFSWG). They meet once a month to exchange information and to enhance coordination. Some key ministries and their related departments dealing with food and nutrition security are as in the table below, but this is not an exhaustive list. In the context of FNSP, the specific TORs for such agencies will be listed in Chapter 8: Implementation Arrangements.

Institutional responsibilities can be summarized as follows:

**Table 3: Principal Institutions Involved in Food and Nutrition Security at the National Level**

1. National Planning Commission Secretariat	High-Level National Nutrition and Food Security Steering Committee
	National Food Security Steering Committee
	Central Bureau of Statistics
2. Ministry of Agriculture Development	Department of Food Technology and Quality Control
	Department of Agriculture (also includes fishery)
	Department of Livestock Services

	Nepal Agric. Research council (NARC)
	National Seed Board (NSB), National Seed Company
	Agricultural Input Company Limited(AICL)
3. Ministry of Commerce and Supplies	Nepal Food Corporation
	Department of Commerce
4. Ministry of Environment, Science and Technology	Department of Hydrology and Meteorology.
5. Ministry of Forests and Soil Conservation	Department of Forests and Department of Soil Conservation and Watershed Management
6. Prime Minister's Office	Poverty Alleviation Fund
7. Ministry of Federal Affairs and Local Development	Programmes for Food for Work, etc; and Safety Nets
8. Ministry of Women, Child and Social Welfare	Women's Development Department
	Local Bodies: District Development Committee, Municipality, Village Development Committee
	Social Welfare Council
9. Ministry of Health and Populations	Department of Health Services
10. Ministry of Home Affairs	Chief District Officers (Disaster-related activities, co-ordinations, and semi-judicial activities)

On the legislative front, food sovereignty has been laid down in the interim constitution. But FNS policy, related legislation and institutions are lacking. Opportunities exist to strengthen coordination and service delivery at all levels: inter-agency issues; instruments such as Policies (the Government has yet to issue a national food security policy, and likewise a national nutrition policy), an Act, and Regulations; and the constitutional Right to Food needs to be enacted in law.

### **2.9.6. Food and nutrition security information system**

The Nepal Food Security Monitoring System (NeKSAP) collects, analyzes and presents information on household food security, emerging crises, markets and nutrition from across the country. NeKSAP was initially established by the World Food Programme, but is currently being institutionalized by the GoN in collaboration with MoAD and the NPC.

As part of the ongoing food security monitoring activities, NeKSAP produces quarterly Food Security Bulletins, Child Nutrition Bulletins, Crop Situation Updates, Market Watch Updates, and Early Warning information. These reports are disseminated to GoN and throughout the donor and development community in order to provide critical information on food security and on rural livelihood conditions. The primary field-level data that are collected are the current principal source

of factual information on food security in the country. In addition, NeKSAP undertakes emergency needs assessments, produces Food for Thought papers, and conducts thematic and sector specific studies.

According to the Interagency Committee on Human Nutrition Research, the population is grouped into five categories as a means to establish normal nutritional requirements throughout the life cycle, as follows: (1) maternal nutrition; (2) infant and child nutrition (0-12 years) including low birth weight infants; (3) adolescent nutrition (13-18 years); (4) adult nutrition (19-65 years); and (5) nutrition of the elderly (65 years or above). GoN generally uses the aggregate grouping of below 5-years, 5-14 years, 15-59 years, and 60 years or above, which need to be borne in mind while conducting life-cycle nutrition assessment.

Nepal does not have the recommended dietary allowances (RDA) to suit its local production conditions and people’s food consumption habits. GoN generally adopts RDAs from the Indian National Institute of Nutrition. Annex 8 envisages support to the establishment of RDA, building on on-going efforts in the Department of Food Technology and Quality Control (DFTQC).

The main information requirements to monitor food security and design well-informed and appropriate policies and programmes in support of food security objectives are as follows: a) reliable production; b) marketing and price statistics at the sub-district level; c) list of households who are below poverty line (BPL); d) list of vulnerable people within the family of at least the BPL households. In short, a village level statistical system is needed.

The information systems about FNS that exist include: a) Population Census Data 2011, but these are not published at the VDC level; b) VDC’s village profiles as per the LSGA Act; c) some records of the Governments’ safety-net payments to the elderly, widowed women, and scheduled communities made through the VDC; d) Small Area Estimates (SAE) are also available based on the data from the NLSS (and perhaps) NDHS. The main gaps, challenges and opportunities are presented in Table 4 below.

Opportunities exist for creating an effective food security information system in the country including the following: a) Central Poverty Monitoring and Analysis System (CP-MAS) and District Poverty Monitoring and Analysis System (DP-MAS) which GoN is now trying to create. CP-MAS and DP MAS are currently being implemented on a pilot basis in three districts of Jumla, Dang and Jhapa. More importantly, GoN has made a policy decision to use the Poverty Alleviation Fund (PAF) for distribution of BPL certificates to households in over 40 districts.

There are opportunities to strengthen the FNS information systems including the National Food and Agriculture Statistics System, and WFP/EU efforts in developing a food security information systems, as summarized in the table below.

**Table 4: FNS Information System – Problems, Challenges and Opportunities**

Problems	Challenges	Opportunities
1. Lack of adequate attention to food security at the national level;	1. Creating a regular inter-ministerial body to plan, implement, monitor and lobby for food security and poverty	1. Food and nutrition security programs can be streamlined by building on the work of: (1) NPCS Poverty Monitoring Division, (2) CBS Branch Statistical Offices (3)

<p>2. Lack of forecasts for crop and livestock production in the country, especially in remote areas;</p> <p>3. Lack of district / community levels statistics on food situations;</p> <p>4. Lack of local governments and inter-agency coordination and synergy for food security activities.</p> <p>5. Lack of integration between data from different aspects of FNS, nutrition, production, availability and access as well as markets.</p> <p>6. Lack of Dietary Diversity Index and food consumption information for nutrition monitoring.</p> <p>7. Lack of an appropriate and representative meteorological information system.</p>	<p>reduction activities;</p> <p>2. Fuller implementation of the Local Self Governance Act with explicit incorporations of food security dimensions in it;</p> <p>3. Making the District Food Management Committee a resourceful and regularly functioning body;</p> <p>4. Developing an early warning mechanism about food security based on agric-meteorology, GIS, market prices, food stocks, and blockades.</p> <p>5. Different institutions are responsible for collection, tabulation and dissemination of data and lack mechanisms to share and coordinate their activities.</p> <p>6. Baseline nutrition monitoring and integration of regular nutrition surveys and food diversity index with food security information system.</p> <p>7. Weather stations by agro-ecological zones have to be established, which may be costly to sustain.</p>	<p>DHM hydro-meteorological data (4) DFTQC food inspection offices (5) DOA/DLS food marketing situations, plant/ animal quarantine offices, (7) NFC food depots, (8) District Food Management Committee (9) Custom Offices, (10) Chamber offices, (11) Department of Health Services supported Demographic and Health Survey, and (12) WFP operations.</p> <p>2. Opportunities exist to formulate national food security policies by drawing from the NPC Three Year Plan MDG Targets, Agricultural Policy, Biodiversity Action Plan, and Trade Policy.</p> <p>3. The Food and Nutrition Security Committees at central level, under NPC and the district level FNSC that have been envisaged are good opportunities to coordinate and share food and nutrition data and coordinate activities.</p> <p>4. Increased interest by government and donors to support targeted nutrition programmes.</p> <p>5. Significant interest from the government and its international partners to invest in agro-meteorological information systems.</p>
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## 2.10. Summary of Food and Nutrition Insecurity Challenges and Opportunities

**Table 5: Problems, Challenges and Opportunities in Food Availability, Access and Utilizations**

Components	Problem	Challenges	Opportunities
<b>Availability</b>	<p>1. Uncertainty about food distribution in the areas without access of roads due to high cost of transportation;</p> <p>2. Lower productivity of food crops, and decline in traditional foods;</p> <p>3. Lack of information on the status and availability projection on various nutritionally important food crops.</p>	<p>1. Developing crop and livestock patterns to bridge food supplies from lean season to harvest season;</p> <p>2. Increasing productivity of agriculture, and non-agriculture sectors in rural areas;</p> <p>3. The agricultural statistics heavily focus on major food crops, which may not</p>	<p>1. Fuller implementation of APP/ ADS offers opportunities to increase food grains production and / or income from high value agribusiness;</p> <p>2. Increase in peoples' access to information, market and technology for value-additions could be used to</p>



	<ol style="list-style-type: none"> <li>4. Lack of adequate storage, processing and conservation facilities in rural areas/ with small producers.</li> <li>5. Decline in availability of food through public distribution and generally less investment in food security projects.</li> <li>6. Insufficient extension services and inadequate skills of farmers, particularly in disadvantaged areas.</li> <li>7. Insufficient and lack of timely availability of quality seeds, fertilisers and other inputs in the right quality.</li> </ol>	<p>always include small but nutritionally important crops.</p> <ol style="list-style-type: none"> <li>4. Striking a balance between achieving self-reliance in food and dependence on imports;</li> <li>5. Solving difficulties of food standards, quarantine, and tariffs on food trade with the neighbouring countries</li> </ol>	<p>increase food availability;</p> <ol style="list-style-type: none"> <li>3. Improved coordination of various govt. and internationally financed projects may improve the information base.</li> <li>4. Increase in remittance earnings by people could be channelled to increase food security;</li> <li>5. Increasing integration with neighbouring economies, which have faster economic growth and apply biotechnology in agriculture, offers possibilities of food import in case of shortages;</li> </ol>
<b>Access</b>	<ol style="list-style-type: none"> <li>1. About 35% of the national population feel they have inadequate access to food;</li> <li>2. Prevalence of discrimination in the food distribution by gender, age and caste.</li> </ol>	<ol style="list-style-type: none"> <li>1. Increasing the income sources of the vulnerable groups/ areas;</li> <li>2. Having effective programmes for vulnerable women, children and the elderly;</li> <li>3. Developing transport and market mechanisms in hinterlands;</li> <li>4. Development of local traditional foods (from crop, livestock, forest and water bodies);</li> </ol>	<ol style="list-style-type: none"> <li>1. NPC's emphasis on poverty reduction as the principal goal provides an opportunity to emphasize food security of vulnerable households.</li> <li>2. Possibilities exist to utilize the 'peace dividend' emanating from the Comprehensive Peace Agreement and Constituent Assembly Elections for increasing food security.</li> <li>3. By making markets available for low-volume high-value goods, family incomes can be substantially increased. Such incremental incomes would increase people's access to food.</li> <li>4. By sustainably managing and utilizing forest-based timber and non-timber products, opportunities exist to further support groups at food security risk such as poor, indigenous and caste/ ethnic people.</li> <li>5. Role of markets in the</li> </ol>

			distribution of foods has expanded due to faster development of road and transports.
<b>Utilization</b>	<ol style="list-style-type: none"> <li>1. Uncertainty about safety and quality of available foods, and low level of awareness about food and nutrition among producers and consumers. – high levels of food adulteration in both domestically produced and imported food;</li> <li>2. Weak monitoring of food markets, their regulations and enforcements;</li> <li>3. Low level of safe drinking water, sanitation, electrification and high prevalence of worms and infections causing low absorption of foods</li> <li>4. Low preference for and lack of appreciation for the nutrition value of indigenous food items – this is particularly the case in the mountain areas.</li> <li>5. Lack of harmonisation of nutrition standards and guidelines with international norms;</li> <li>6. Lack of ethnic and agro-ecological specific dietary guidelines.</li> </ol>	<ol style="list-style-type: none"> <li>1. Integrating the food quality and safety issues with domestic and external trades;</li> <li>2. Bringing about improvements in the feeding habits;</li> <li>3. Developing dietary patterns for food and nutrition of different population groups/ occupations/ regions based on local and cheap sources;</li> <li>4. Extending the reach of facilities which help in proper utilization of foods such as water supply, health, cooking and keeping qualities;</li> <li>5. Development of dietary and nutrition guidelines and norms conforming with international standards and local conditions may not always be feasible.</li> </ol>	<ol style="list-style-type: none"> <li>1. Plenty of possibilities to produce/ consume balanced and nutritious foods by utilizing the biodiversity;</li> <li>2. Availability of agricultural post-harvest handling technologies even in smaller units and its rapid disseminations on the back of fast growing transportations and electrifications activities has increased the opportunities for food milling efficiency, quality and safety;</li> <li>3. Compliance with WTO on food standards (Codex, OIE, GAP/ GVP, GMP, HACCP) provide opportunity to raise national food standards;</li> <li>4. Opportunities exist to integrate the food, nutrition and health issues with rapidly unfolding education and extension services.</li> <li>5. Significant interest in support from international partners in this regard.</li> </ol>
<b>Rapid response</b>	<ol style="list-style-type: none"> <li>1. Lack of transport by road access to the headquarters of many districts;</li> <li>2. Unsuitability of dirt/ fair weather roads due to floods/ landslides for food delivery during famines;</li> <li>3. Lack of telecommunications, media coverage and in remote areas;</li> <li>4. Weak institutions in the districts and divisions responsibility for food delivery and rescue</li> </ol>	<ol style="list-style-type: none"> <li>1. Creation of food reserves in strategic places for meeting emergencies;</li> <li>2. Developing codes for a mechanism to pool the institutional strength of the Government agencies (administrative, developmental and security related), Chambers, NGOs and Community organizations for response to emergencies;</li> </ol>	<ol style="list-style-type: none"> <li>1. Central Disaster Relief Committee and District Disaster Relief Committees provide opportunities to address food emergencies;</li> <li>2. SAARC regional food reserves provide a window as buffer in cases of high magnitude of food emergencies.</li> </ol>

### 3. National food and nutrition security policies and programmes

#### 3.1. Existing national policies relevant to food security

The existing national FNS programme is NPC's three year plan 2010/11 to 2012/13. The proposals in this report are designed to follow on from this plan starting 2013. Its main policies are in the following categories:

- Agriculture and livestock based production and productivity;
- Climate change adaptation technologies;
- Targeting of vulnerable families through group formation, access to nutritious and fortified foods, food grains distribution, food coupons and food credit cards, "fair price" shops
- Management of food crises;
- Preparation of a national food and nutrition security plan;
- Improving eating and drinking habits through education and awareness programmes.

#### 3.2. Food security related programmes/projects

The following programmes are part of the current TYIP:

- Study and dissemination of the nutritive value of traditional local foods;
- Promotion of crops for climate change adaptations including drought tolerance, and resilience to flooding or water-logged conditions, resistance to pests and diseases;
- Animal breeding improvements;
- Multi-Sector Nutrition Plan (MSNP);
- Food Safety and Quality improvement programmes include: (1) promotion of good practices; (2) effective implementation of Meat Inspection Act and Regulations (managed by DoLS); (3) regulation of import of inputs for production; and (4) consumer education on food safety and quality;
- Programmes for targeted groups that are vulnerable to food and nutrition insecurity in: (1) agriculture and animal husbandry; (2) fisheries; (3) marketing; and (4) processing and transport;
- Studies on policy analysis and research; identification of social safety-nets for providing food and nutrition security; monitoring and evaluation;
- Nutrition programmes as follows: (1) community nutrition management programme; (2) supplementary micro-nutrient rich food distribution programme for children in remote and deprived regions; (3) programme of flour fortification with iron, folate and other micro-nutrient fortification;
- Nutrition education in schools through a review of curricula;
- Nutrition programmes coordinated by DDCs by organizing district nutrition steering committees involving the multi-sector nutrition-related agencies;
- A food and nutrition surveillance system for the effective monitoring and evaluation of the nutrition related programmes.

Recent improvements in some of the indicators seem to indicate that the TYP and earlier programmes are having their intended effect. For example, according to the Nepal Demographic Health Survey and other surveys, the indicators for women's BMI, women's anaemia, child anaemia, child stunting, child wasting, and children underweight seem to be falling but remain unfavourable.

## 4. Strategic food security interventions

### 4.1. Availability

#### 4.1.1. Production

Key interventions considered under the FNSP to increase production and productivity of **agriculture field crops**, particularly cereals, pulses and oilseeds, are as follows:

(1) Increased availability of and access to improved seeds of all crops, mainly through promotion of local seed growers, and including hybrid maize and rice seeds for some agro-ecological areas in the Terai and Hill regions where these are currently missing, and improved rice varieties for the Terai. The ADS addresses research for location specific variety development, variety maintenance, decentralised seed production, research on climate resilient varieties, which have not been considered in this document.

(2) More responsive, wider reaching and more tightly focused extension services targeted mainly on producer groups and based largely on PPPs with private extension workers and supported by research that is more location-focused and more responsive to local needs; an improved extension service would be based on the existing proven DRSP and FtF models and probably (depending on successful piloting) vouchers for extension services.

(3) Improvement of small-scale irrigation. This includes:

- a) expanding the irrigated area through completing surface schemes already started, repair of damaged surface systems, construction of new tube wells, repair of damaged tube wells, and the development of non-conventional irrigation and the introduction of more efficient water application systems;
- b) increasing the irrigable area on existing schemes through increasing irrigation efficiency, expanding the command area, improved water allocation and crop planning, the construction of permanent headworks and improving main canals, and the construction of shallow tubewells;
- c) focus on water management in irrigation systems and at farm level through capacity building in the Ministry of Irrigation and/or the MoAD;
- d) transfer of irrigation management to Water Users' Associations;
- e) funding of operation and maintenance at least in part by irrigators through better definition and charging of irrigation service fees;
- f) the introduction of an Irrigation and Water Resources Management framework.

(4) Small –scale farm mechanisation – Improvements in farm implements and tools have been envisaged through training and improved design.

Key interventions considered in this programme in support of increased production and productivity of **horticulture**, which collectively are almost entirely dependent on improved extension as described above, as well as more accessible rural finance, are as follows:

(1) improving home-gardens, especially through irrigation, for year round production of vegetables and spices;

- (2) establishing village multipurpose resource nurseries (VMRN) and home gardens;
- (3) supporting market development for surplus production from home garden to generate income;
- (4) supporting farmers in accessible areas to produce and market sub-tropical and temperate fruit, vegetables and spices;
- (5) enabling producer groups to be part of an organized value-chain.

Key interventions considered to increase production and productivity of **livestock**, which again collectively are almost entirely dependent on improved extension as described above, as well as more accessible rural finance and insurance, are as follows:

- (1) Increased production and productivity through animal breeding management;
- (2) Backyard piggery and poultry production and productivity;
- (3) Increase in dairy production and productivity;
- (4) Increase in production and productivity of fodder and pasture; and
- (5) diseases and pest control through increased veterinary service coverage including AI.

Key interventions considered to increase production and productivity of livelihoods in **forestry** areas, which are pro-poor and focused on diverse ethnic groups, and which again collectively are almost entirely dependent on improved extension as described above are as follows:

- (1) Cultivation of NTFP/MAPs with fruit trees in mountain areas;
- (2) Agro-forestry model with lapsi, chiuri, jackfruit, and amla in community forestry in the mid-hills;
- (3) Forage development with livestock keeping in leasehold forest;
- (4) Jackfruit, drumsticks and asparagus farming in community forestry in Terai; and
- (5) vegetable farming with appropriate tree species in public lands in Terai.

The main interventions required to increase production and productivity of **fisheries**, which again collectively are almost entirely dependent on improved extension as described above, as well as more accessible rural finance, are as follows:

- (1) Community-based integrated fish/ fingerlings in water bodies in mid-/far western Terai;
- (2) Intensification of pond fish culture in private land in Terai;
- (3) Homestead aquaculture in Terai and Hill regions;
- (4) Utilization of dead arms of rivers for aquaculture through fishers' communities;
- (5) Enhanced fish production in lakes by community in-cage fish culture, and its replications in irrigation barrages and hydro-power reservoirs, community ponds and household ponds.

#### **4.1.2. Trade and market interventions**

Agricultural trade and marketing issues are adequately addressed in the ADS and the FNSP does not attempt to replicate what has already been covered. Food quality and safety issues related to trade have been addressed in the FNSP, at least partially, as follows:

- (1) A comprehensive policy on food safety that embraces the entire value-chain including the producers, consumers, regulations food business operators, exporters and importers;
- (2) A modern Food Act (with directives, guidelines and standards) that is prescriptive, and creates an enabling environment conducive to the development of marketing and trade of agricultural products as well as ensures that all foodstuffs sold meet acceptable standards, prevents and punishes food adulteration, and promotes food traceability.
- (3) The proposed Food Act includes the following: (a) formation of an independent Food Authority with authority to issue standards, quality and its enforcement; (b) stipulation that DFTQC/ Food Authority is authorized to issue SPS and TBT standards for local and exported goods; (c) authority to issue SPS standards by a simplified procedure in case SPS standards refer to the Codex Alimentarius and the like;
- (4) Formulate, adopt and implement FSQ standards as per SPS standards, and set their numerical goals;
- (5) Adopt legislation on the accreditation of standards certification bodies;
- (6) Adopt legislation on the accreditation of national laboratories for FSQ certification, including: (a) establishing a Nepali accreditation body, and (b) joining ILAC and APLAC to establish recognition of Nepali accreditation body;
- (7) Installation of preventive or proactive approaches in the whole food chain such as GAP, GMP and HACCP;
- (8) Internationally accredited laboratories for contaminant testing;
- (9) Trained personnel and awareness including producers, processors, food handlers and traders, policy makers, regulators, food inspectors, and consumers, for health protection and promotion of trade;
- (10) Standards for food additives, food colour, preservatives, vitamins and nutritional supplements, food contaminants, pesticide residues, aflatoxin, heavy metals, radioactivity, microbiology, and food labeling; and
- (11) Harmonization with Codex standards of food products.

Other marketing interventions will be addressed by ADS, not specifically by FNSP.

The current grain reserve is small in relation to national requirement. It has already been mentioned that the NFC also holds small national food buffer stocks, currently 15,000t, and that SAARC regional stocks are modest at 4,000t. As in any other country, cereal prices also vary during the year and are lowest just after harvest and highest during the lean months of February/March and July/August.

Storage facilities, enabling farmers to store their produce immediately after the harvest, at farm/group level may be considered. Heavy state intervention in this area may not always be beneficial, private initiatives need to be encouraged where appropriate.

#### **4.2. Access**

The formation of producer groups, targeting the extremely poor households to increase economies of scale, facilitate access to markets and cushion consumption and production troughs and peaks.

**GESI** interventions are mostly mainstreamed in all other components of the FNSP to ensure that the poorest and heavily discriminated households have access to the programme interventions. GESI issues and recommendations are also separately mentioned to ensure positive discrimination and access of the most vulnerable and food insecure strata of the society to necessary services.

**Micro-finance.** The ADS has adequately addressed the micro-finance and agricultural insurance issues, which have not been repeated here.

Despite rapid expansion of the formal financial sector during the last two decades, access to financial services from the formal sector has reached 30% and the remaining 70% are dependent on the informal sector of financial services such as money lenders, self-help groups, and community based organizations. Rural finance could play an important role in poverty alleviation and food security by promoting agricultural, livestock, fishery and other rural micro enterprises. Rural financial services could be made available to all households including the poor and marginalized that are at higher risk of food and nutrition insecurity by expansion of microfinance services to remote & rural areas. In the past decade, micro-finance has been recognized as a particularly effective development intervention for three basic reasons:

- The services provided can be targeted specifically at the poor and the poorest of the poor.
- They can make a significant contribution to the socio-economic status of the targeted community.
- The institutions that deliver these services can develop, within a few years, into sustainable organizations with steadily growing outreach.

There is still a scarcity of MFIs especially in the hilly remote districts of Mid Western and Far Western Development Regions (although a survey to re-address this is now in progress), and enhancing access to financial services in rural and remote areas is a big challenge. In particular, the financial sector of Nepal has yet to bring a significant number of poor and disadvantaged groups under its services. Government has imposed provisions on commercial banks, development banks and finance companies to have minimum level portfolios in agriculture and deprived sectors but this is not sufficient to fill the demand-supply gap. However, there is a large scope for financial coverage to improve standards of living of deprived people through deepening of financial services in accessible areas and expansion of services in remote areas.

The FNSP envisages the provision of grant as group productive asset build up to ensure that the poorest of the households develop sustainable livelihoods. The micro-finance is, therefore, mainstreamed in all of the productive components, e.g. livestock, agriculture, horticulture, forestry and fisheries, by providing grants to groups, which is to remain part of the group assets as a revolving fund- building on the successful approach adopted by the PAF.



## 4.3. Utilization

### 4.3.1. Nutrition education, and food processing and preservation

Key interventions focus on improved quality of **nutrition**, as follows:

Output 1: Dissemination of FBDGs for improving awareness of locally available food and its role in improving human nutritional status and health outcomes. Activities for Output 1 are: (1) training of FNSSC and other concerned staff at district, VDC and community levels (2) adapt FBDGs in consultation with TWG to make them suitable to local needs and availability of food and cultural practices; (3) develop training manuals and IEC materials; (4) develop master ToT at central level for core trainers group identified by TWG.

Output 2: Improved dietary behaviour at household level. Activity for Output 2 is: counselling in marketing of local foods by FCHVs, farmer leaders, COs and FNSSC members directed at households, particularly adolescent girls and women.

Output 3: Availability of nutritious family snacks at community level contributing to improved nutrition status of the local population. Activities for Output 3 are: (1) research on availability of local foods naturally rich in nutrients and preferred processed products; (2) develop models for processed food products; (3) demonstrate the product and conduct community acceptability tests; (4) develop training package for small scale processing of the identified products; (5) identify households interested in starting small scale food processing; and (6) train interested households.

Output 4: Baseline food consumption and nutrition survey, including Dietary Diversity Index by representative regions and ethnic groups.

## 4.4. Cross-cutting issues

### 4.4.1. Environmental sustainability

Once again, it would be largely for the extension services to deliver and incorporate environmentally sustainable messages into their technical agronomic or livestock husbandry messages. These would include: mixed farming as opposed to mono-crops; a mix of traditional cereals with cash cereal crops such as maize and rice; catchment protection as an integral part of investment in irrigation; IPM as opposed to excessive use of agro-chemical control of pests and diseases. All this would be backed up by local research into which environmental sustainability would have been mainstreamed.

### 4.4.2. Institutional capacity building

**Extension** The delivery of the major part of the FNSP depends on reformed extension services with a much greater reach than at present, well backed-up by research, largely involving private extensionists contracted under PPP arrangements, and covering the sub-sectors of human nutrition, agriculture, horticulture, livestock, fisheries, forestry, micro-finance, GESI, and food quality and safety.

The required capacity building of government established staff is a substantial task and requires major reorientation towards administration, targeting, responding to expressed demand, liaison with DDCs and VDCs, contract management, monitoring and evaluation, as well as technical supervision. As part of the

**Research.** The reformed extension services need to be closely linked with and supported by research that is more responsive at local level in the sub-sectors agriculture, horticulture, livestock, fisheries, and forestry.

#### **4.4.3. Food security information system**

The Nepal Food Security Monitoring System (NeKSAP) collects, analyzes and presents information on household food security, emerging crises, markets and nutrition from across Nepal. NeKSAP was initially established by the World Food Programme but is currently being institutionalized by the GoN in collaboration with MoAD and the NPC. It would be highly recommended to integrate food consumption surveys and Dietary Diversity Index with NeKSAP. The food and nutrition security information system has not been addressed in the FNSP, which may be included at a later stage pending the decision of the government of Nepal to integrate several information systems and institutionalise project-based information systems.

## **5. Experiences and Lessons Learned**

### **5.1. Programme development objectives**

Despite recent encouraging improvements, rates of chronic malnutrition in Nepal remain high: prevalence of stunting is over 40% among children below 5 y.o; 29% are underweight; 18% of women have a Body Mass Index below normal; and over 40% of Nepalese as a whole are undernourished. There are large regional variations: in the Mid- and Far-West Hills and mountains chronic malnutrition affects between 50% and 70% of the population.

The development objective of the FNSP is to improve the nutrition status and ensure food and livelihood security for some of the poorest and most vulnerable households in Nepal. The programme intends to enhance sustainable agricultural-based livelihoods by forming producer groups and building group productive assets to increase economies of scale in production and marketing, and introduce improved production and processing technologies. The programme adopts a rights-based approach, which is enshrined in the constitution of Nepal. Building on the highly successful approach adopted by PAF, the FNSP shall provide grants to groups, which shall remain the group revolving fund for productive activities.

The FNSP programme is organised in 9 components, and the proposed activities, outputs and implementation modalities are based on past experiences in the country. The following section presents a brief summary of each component, while details are presented in the relevant Annexes.

### **5.2. Summary of programme components**

#### **5.2.1. Component 1: Agriculture Field Crops (USD 16.4 Million)**

The main **objective** of this component is to improve production and productivity of the main food crops per unit of land, which is the main constraints affecting household nutrition and food security. More specifically the component intends to: (1) Increase food grain crop yields mainly through double cropping and improved seeds and other inputs; (2) deliver improved extension and research services through public-private partnerships; (3) focus on producer groups at VDC level; (4) small-scale irrigation improvement and expansion.

#### **Main Outputs and Activities:**

Output 1: expansion of area under intensification and double cropping of rice, intercropping of indigenous food crops, and increased area under pulses and oilseeds. Activities are: (1) improved quality and area covered by private extension through DRSP and FtF, supported and monitored by MoAD extension service, together with a pilot voucher scheme in the early years of the programme, and wider application of vouchers for extension services in later years if successful; (2) small scale irrigation improvement.

Output 2: increased access to improved seeds, particularly hybrid maize varieties, pulses, buckwheat and indigenous cereals. Activities are: (1) promotion of local seed growers supported by extension, research and rural finance; (2) dissemination of improved seed supported by enhanced extension service.

Output 3: improvement of small-scale irrigation (for crops ). Activities are: (1) improved management, irrigation intensity, and area covered; (2) strengthen Water Users' Associations

The **implementation** modalities for the component envisages producer group formation and providing technical training and a one-off input provision to build group assets. Building on the PAF implementation modalities, the group assets shall remain within the group as a revolving fund. No additional institution has been envisaged to coordinate and implement the component but rather to strengthen existing MOAD institutions at central level for coordination and district level for implementation together with other institutions at the district administration (DDC and VDC among others) using the PAF modalities for implementation.

### **5.2.2. Component 2: Fisheries (USD 11.6 Million)**

The overall **Objectives** of the fisheries component is to improve income and nutrition status of extremely poor households by improving the production, productivity and post harvest management in aquaculture. More specifically the component intends to: (1) introduce improved aquaculture technologies adapted to different regions and socio-economic groups; (2) increase choice of fish species; (3) improve carp genetics; (4) improve access to quality fish seed; (5) improve feeding management for carp and trout; (6) reduce cost of trout feed; (7) improve fish disease control; (8) improve quality and reach of fishery extension service supported by better fishery research.

**Lessons Learned and Reflected in Component 6 Design:** (1) Current group approach should be transformed into formal producer groups; (2) Projects encompassing social, economic, agro-ecological and institutional aspects successfully developed a model for marginal homestead pond aquaculture integrated with livestock and horticulture. (3) "Pocket package" programme is promising for aquaculture through farmers' group in training, extension, inputs, credit, and value-chains; (4) "One village one product" is successful in trout farming. (5) Mobilization of landless/marginal households in community aquaculture is promising for income and nutritional security; (6) Over 20 proven models are identified in the full report of which five priority models are shown below under Outputs and Activities.

The fisheries component envisages five major outputs and activities, all through producer groups to increase economies of scale in production and marketing:

1. Community-based integrated fish/ fingerlings development in water bodies in mid-/far western terai;
2. Intensification of pond fish culture in terai;

3. Homestead aquaculture in terai and hill area;
4. Utilization of dead arms of rivers for aquaculture through fishers' communities; and
5. Enhanced fish production in Sraphu lake by community in-cage fish culture, and its replications in irrigation barrages and hydro-power reservoirs.

In addition, the component envisages the development of fishery breeding policy and improved fishery extension delivery system, in particular through DRSP and farmer field schools. The Directorate of Fisheries Development of the MoAD shall coordinate and implement the envisaged activities at central and district levels, respectively. The component is expected to benefit some 21,000 households (nearly 125,000 people.)

### **5.2.3. Component 3: Food Quality and Safety (USD 4.5 Million)**

The overall **objectives** of the component is to ensure food safety in Nepal. More specifically the component intends to (1) protect consumers against various kinds of hazards present in foods, requiring new laboratories, equipping a regulatory agency, a diet survey, and a database; (2) ensure preventive or pro-active food quality and safety management system in the entire food chain, requiring a GAP scheme for producers, codes of practice (GMP, GHP, HACCP) for processors and traders, development of an inspectorate, and a database; (3) promote agro-food trade by establishing efficient and effective food control system, requiring a strengthened inspectorate, a new laboratory system, updated legislation/regulations, and harmonized standards.

**Lessons learned and reflected in component design** are mainly through the negative experiences of not having FQS measures in place. They include: (1) cholera and widespread other food-borne diseases; (2) extreme difficulty in exporting fresh food products, and in guarding against sub-standard food imports; (3) a steady shift in national and international public perception of Nepal's food products from being pure and unadulterated from a clean environment towards being contaminated with pesticides and infectious diseases.

Component 3 Outputs and Activities include:

1. A comprehensive policy on food safety that embraces the entire value-chain including producers, consumers, regulations food business operators, exporters and importers;
2. Enact a modern Food Act (with directives, guidelines and standards) that is prescriptive rather than reactive, and creates an enabling environment conducive to the development of marketing and trade of agricultural products as well as ensures that all foodstuffs sold meet acceptable standards, prevent and punish food adulteration, and promote food traceability. The new Food Act should include the following:
  - (a) The formation of an independent Food Authority with authority to issue standards, quality and its enforcement;
  - (b) The stipulation that DFTQC/ Food Authority is authorized to issue SPS standards for local and exported goods;
  - (c) The authority to issue SPS standards by a simplified procedure in case SPS standards refer to the Codex Alimentarius and the like;
3. Formulate, adopt and implement FSQ standards as per SPS standards, and set their numerical goals;
4. Adopt legislation on the accreditation of standards certification bodies;
5. Adopt legislation on the accreditation of national laboratories for FSQ certification: (a) Establish a Nepal accreditation body, and (b) Join ILAC to establish recognition of Nepali accreditation body;

6. installation of preventive or proactive approaches in the whole food chain such as GAP, GMP and HACCP;
7. Internationally accredited laboratories for contaminant testing;
8. Trained personnel and awareness including producers, processors, food handlers and traders, policy makers, regulators, food inspectors, and consumers, for health protection and promotion of trade;
9. Standards for food additives, food colour, preservatives, vitamins and nutritional supplements, food contaminants, pesticide residues, aflatoxin, heavy metals, radioactivity, microbiology, and food labelling; and
10. Harmonization with Codex standards for fats and oils, and milk products.

The Department of Food Technology and Quality Control in close collaboration with crop production department of MOAD shall be the main implementing agency. The FQS programme will benefit all the people in the country.

#### **5.2.4. Component 4: Forestry (USD 13.8 Million)**

The main **objective** of the forestry component is to develop alternative livelihoods for some of the poorest and food insecure households living in and near the forests with significant impact on malnutrition. More specifically the component intends to: (1) facilitate the cultivation and processing of high value medicinal plants and food crops in forest areas (under different forest management regimes and on private holdings), e.g. pineapple, ginger, lapsi, chiuri, jackfruit, and fodder crops for livestock; (2) introduce sustainable agricultural practices such as conservation agriculture, water harvesting for vegetable production, wetland management for aquatic products, and agro-forestry; and (3) introduce sustainable development practices in the forest buffer zones, where 30%- 50% of revenue from protected areas must, by law, be used for development.

The main opportunities, lessons learned and reflected in forestry component design include: (1) forest lands are underutilized; (2) productivity could be substantially increased through the development of subsistence based forestry into competitive, agriculture friendly and inclusive forest management practices, and a community based approach to natural resource management and livelihoods improvement; (3) wild food forest products are largely unreported because they are not a source of government revenue; (4) FNS has been a new and low priority area of forestry sector organizations, and are deemed as livelihood activity; (5) benefits of forestry livelihoods for environmental sustainability remain to be appreciated; (6) uses of medicinal and aromatic plants (MAPs) and NTFPs are not sustainably managed but can be with effective extension services;

The main **activities** under this component include:

1. cultivation of NTFP/MAPs with fruit trees in mountain;
2. agro-forestry model with lapsi, chiuri, jackfruit, amla in mid-hills under different management regimes and private lands;
3. forage development with livestock keeping in leasehold forest;
4. jackfruit, drumsticks and asparagus farming in CF in Terai; and
5. tree plantations with vegetable farming in public lands in Terai.

These activities are pro-poor and focused on diverse ethnic groups.

The Department of Forests, Ministry of Forest and Soil Conservation, is expected to coordinate the envisaged activities under this component and implementation will be driven largely by local government using the PAF model. Capacity building and other extension service deliver is envisaged

through DRSP and other proven farmer group-based models. Initially the component envisages to target over 2,100 groups or more than 48,000 households (240,000 people).

#### **5.2.5. Component 5. Gender Equity and Social Inclusion (GESI) (USD 3.4 Million)**

The main objective of the component is to ensure that the FNSP and other similar programmes in the target areas predominantly benefits those that have traditionally been discriminated against, including women, the aged, ethnic minorities and other groups.

**Lessons Learned and Reflected in Component 9 Design:** (1) legislation relevant to GESI is in place, but institutional capacity needs to be improved; (2) progress is being made on awareness of their rights by women and men, but they also need to be made aware of their duties; (3) mainstreaming GESI in local government is challenging; (4) a punishment and reward system based on effective monitoring and evaluation is a promising way forward.

**Outputs and Activities:** The FNSP components have mainstreamed GESI in all the components, outputs and activities. This component envisages outputs and activities that are cross-cutting and fall outside the FNSP components and expected to benefit other sectors as well. The main outputs and related activities under this component include:

1. systems development including social mapping, advocacy, social mobilisation, ensuring adequate representation in development processes in target districts;
2. development of training material, advocacy and other policy framework;
3. capacity building in GESI for various stakeholders at national, district, village and community levels.

The envisaged activities of this component will be implemented through sub-contracting to specialised civil society organisations under the overall coordination of the NPC and MOAD. This component is expected to benefit about one million people with a total cost of about US\$3.4 million over a five year period.

#### **5.2.6. Component 6. Horticulture (USD 10.9 Million)**

The main objectives of this component is to increase the availability of diverse and nutritious food at household level for domestic consumption as well as marketing, and hence improve household nutrition status. The component is expected to improve household nutrition and income through the production of fruits and vegetables throughout the year.

Lessons learned and reflected in the component design: (1) high regional comparative agronomic advantage and competitiveness; (2) proven opportunity to plant fruit orchards in degraded forest and community forests, and availability of barren bari lands due to outmigration; (3) proven post-harvest handling to reduce physical damage (30%); and (4) government's successful "pocket and package" programmes.

**Outputs and Activities include:**

1. improving home-gardens, especially through irrigation, for year round production of vegetables and spices;
2. establishing village multipurpose resource nurseries (VMRN) and home gardens;
3. supporting market development for surplus production from home garden to generate income;

4. supporting farmers in accessible areas to produce and market sub-tropical and temperate fruit, vegetables and spices;
5. enabling producer groups to be part of an organized value-chain.

The MOAD in direct partnership with the PAF, through its central and decentralised units shall coordinate and impellent the envisaged activities in target districts. In addition, capacity building and extension service delivery to the target producer groups shall be delivered through the proven DRSP and other farmer field school methods.

This component intends to target over 630,500 households (about 2.5 million people) with a total budget of US\$ 10.9 million over five years. The Benefits are expected to accrue over the subsequent 10 years.

#### **5.2.7. Component 7. Nutrition Education and Training (USD 8.7 Million)**

The overall objectives of this component is to: (1) Increase knowledge and practices regarding the nutritional value and use of locally available food groups at the household level; (2) increase consumption of locally available diversified food commodities; and (3) improve food consumption behaviour in line with FBDGs and social and media marketing of locally available foods at household level.

Lessons learned and reflected in the component design: (1) Improved nutrition of these groups leads directly to higher rural household incomes and to better food security; (2) nutrition education programmes help to improve nutritional quality of consumed food; (3) small-scale local food processing improves access to convenience food made from local nutritious ingredients, and has been successfully supported by the Poverty Alleviation Fund (PAF) and other rural finance initiatives, and by media marketing of local food

#### **Component Outputs and Activities**

Based on principles of Food-based Approaches the following main interventions are proposed under this component adapted to various eco-zones and tailored to groups defined by age, vulnerability and physiological status:

1. A Nutrition Education Programme aiming to deliver: (a) optimum nutrition at every stage of an individual's life-cycle; (b) dietary diversification; (c) cultural and social acceptance of foods; (d) economically feasible approaches for low-income groups; and (e) use of locally available foods.
2. Small-scale local food processing entrepreneurship development at community level.
3. Social and media marketing of locally available and diversified food and post-harvest products developed from these local foods.
4. Baseline Food Consumption and Nutrition Survey, including Dietary Diversity Index by representative communities and agro-ecological zones.

The envisaged activities under this component shall be coordinated and implemented by the Department of Food Technology and Quality Control (DFTQC) and MOAD staff in coordination with CHD and MoHP. The envisaged programme is expected to initially target some 20 districts over a period of 5 years with an aggregate budget of just over US\$8 million. The returns on investment is expected over a 10 year period.



### **5.2.8. Component 8: Legislation (USD 0.94 Million)**

The main objectives of this component are to ensure right to food approaches are mainstreamed and gender, age, caste and other forms of discrimination are minimised. To achieve this the following elements need to be addressed: (1) a comprehensive policy and legislation on right-to-food; (2) a human rights perspective in existing policies and legislation; (3) strong application of existing laws including those that make discrimination in society illegal; (4) strengthened institutional framework; (5) legal preparedness to cope with the liberalization of agriculture sector; (6) address in legal and regulatory terms the vulnerability of marginal groups to food and nutrition security, including an emergency coping mechanism; and (7) ineffective food safety regulations.

Lessons learned and reflected in the component design: (1) Sectoral policies and laws are not enough to address the issues of food and nutrition insecurity; (2) Need to apply a human rights based approach to development in law; (3) Need to improve conceptual clarity; (4) Effective implementation of law; and (5) Institutions are to be reformed to meet the goal of ensuring right to food and nutrition security

The component intends to deliver the following **outputs**:

1. Food and Nutrition Policy,
2. Food and Nutrition Security Act,
3. Food and Nutrition Regulation,
4. modification and strengthening existing institutions,
5. Agriculture Insurance Act,
6. Aquatic Life Protection Act, Seed/ Plant Variety, Food Quality and Safety.

### **5.2.9. Component 9: Animal Health and Production (USD 16.2 Million)**

The main objectives of this component is to improve the nutrition and food security status of some of the most vulnerable and resource-poor households in Nepal, in particular targeting discriminated ethnic groups and women-headed households. The component intends to increase the availability, consumption and income from animal production, productivity and reduce mortality by providing capacity building and inputs in animal husbandry, developing value chain, from grass to dairy, and health coverage through village level private para-veterinarians in selected districts.

**Lessons Learned and Reflected in the component design:** (1) Improved genetics, including through artificial insemination, together with better feeding improves cattle milk yields by 7X and buffalo milk yields by 3X. Similarly, poultry meat and egg productivity is also low and can increase by up to 1.5X and 3X, again with improved genetics and feeding. A livestock breeding policy needs to be put in place so that a variety of improved breeds is available to farmers. (2) Modest improvement in the control of livestock diseases can substantially improve sustainable livestock off-takes. (3) Mixed crop and livestock farming lowers risk and increases sustainability in an increasingly fragile agro-environment. (4) Value chain development of dairy was ranked as number two priority out of 15 commodities during initial stakeholder prioritization by ADS.

The component intends to deliver the following **outputs**:

1. Develop a livestock breeding policy, support pure breeds production farms, and promote private sector and cooperatives to produce improved breeds;
2. Increase production and productivity through animal breeding management, and;
3. increased and targeted backyard piggery and poultry production and productivity;
4. Increase in dairy production and productivity through value chain development;

5. Increase in production and productivity of fodder and pasture; and
6. diseases and pest control through increased veterinary service coverage.

## 6. Summary of programme costs

Table 6. presents summary cost table for the programme over a five years by component. The costs are based on number of households who would benefit from the programme. The detailed cost tables are prepared in excel and the overall cost may be altered by changing the number of beneficiary households in each of the components. The costs assume a 10 percent of the total budget for implementation and coordination arrangements for each of the components, while 5% of the total programme budget has been envisaged for national coordination. No price or physical contingencies have been envisaged. Detailed costs in individual components are prepared in Nepali Rupees (NRs) using current market prices and converted into US Dollar using the current market exchange rate, NRs 88=1 US\$.

**Table 6. Summary Programme Costs by Component and Year.**

		US\$ 1000s					
No.	Components	Yr-1	Yr-2	Yr-3	Yr-4	Yr-5	Total
1-	Agriculture Crops	3,869	5,142	5,875	897	598	16,380
2-	Fisheries	1,370	2,541	4,018	2,298	1,376	11,603
3-	Food Quality and Safety	985	2,062	635	453	361	4,496
4-	Forestry	3,963	4,154	4,244	886	616	13,863
5-	Gender Equity and Social Inclusion (GESI)	227	682	682	910	910	3,411
6-	Horticulture	2,087	3,405	3,939	969	543	10,943
7-	Nutrition	1,812	1,942	2,349	2,124	456	8,683
8-	Legislation (Right to food, food security)	369	327	247	-		943
9-	Livesock	3,709	5,262	6,241	978	54	16,244
<b>Sub-Total</b>		<b>18,391</b>	<b>25,518</b>	<b>28,229</b>	<b>9,514</b>	<b>4,914</b>	<b>86,566</b>
National Coordination and Monitoring, 5%.		920	1,276	1,411	476	246	4,328
<b>Total Component Cost</b>		<b>19,311</b>	<b>26,793</b>	<b>29,641</b>	<b>9,990</b>	<b>5,160</b>	<b>90,894</b>

## 7. Appraisal of programme activities

### 7.1. Sustainability

Sustainability is built into this Plan in at least three ways, as follows:

First, none of the proposals foresee an increase in the civil service establishment, but rather building on existing and successful institutions and where necessary capacity building and functional reforms have been envisaged. Expenditure on capacity building and in subsidized extension services for a limited number of years is treated as an investment cost and may attract donor funding. After the investment period recurrent costs for government would be more or less the same as now.

Second, livelihoods and farming systems under the FNSP are designed to be less risky, more traditional, more resilient to climate change, and will depend mainly on improved genetics (crops and livestock) and improved management rather than on an increase in unsustainable cash inputs.

The proposals pose no environmental threat. Besides farming systems that include crops and livestock, the same approach would be taken for horticulture, fisheries and forestry.

Third, proposals for improved irrigation will, to a large extent, depend on increased dry season river flow and axiomatically this means better catchment protection and thus an improved environment in general.

Finally, the group formation and their registration as a legal entity with assets provided as a revolving fund to continuously improve productive activities of the target beneficiaries are significant elements for sustainable development. The PAF has already rolled out plans to facilitate the federation of several groups into larger entities with a view to further increase economies of scale. In addition, the groups when registered as a legal entity will have access to financial resources, e.g. rural finance and agricultural insurance.

## **7.2. Environmental aspects**

The FNSP is focused on sustainable livelihoods especially for disadvantaged groups and does not set out primarily to benefit the environment, but its proposals for FNS will benefit the environment in several ways. First, as mentioned above, improved irrigation will not work sustainably without better protected catchments and thus an improved environment. The Department of Soil Conservation and Watershed Management (DSCWM) has been supporting conservation farming, land productivity and water resource conservation, which has improved the condition of catchment. Therefore, the FNSP shall build on this experience and the DSCWM should play a technical oversight function in the process.

Second, the forestry proposals integrate sustainable livelihoods with forestry in an environmentally sensitive way.

Third, the fisheries livelihoods proposals are based on existing water bodies and pose no environmental threat.

A specific Environmental Management Plan is seen as unnecessary at this stage.

## **7.3. Social aspects**

Gender equality and social inclusion (GESI) has been mainstreamed into all nine sub-sector proposals, including legislation, to ensure gender balance and the inclusion of all socially disadvantaged groups.

# **8. Implementation arrangements and financing plan**

## **8.1. Implementation arrangements**

The FNSP envisages no new and parallel institutions to coordinate and implement the envisaged activities. The coordination and implementation heavily relies on existing institutions at all levels, including central, district and cluster levels. This is aimed to strengthen existing institutions and avoid creating parallel ones with a view to ensure sustainability and long-term development of appropriate institutions.

The implementation of the FNSP will be the responsibility mainly of devolved local government with coordination by different line Ministries and other stakeholders. The PAF modality of implementation and financial management as well as M&E system will be adopted to implement the FNSP. The following main institutions will plan prominent roles in the implementation of FNSP.

- The Poverty Alleviation Fund (PAF) is independent of any line agency, and provides capital support to the poorest for community infrastructure and income generation activities. The PAF has a good reputation and experience in targeting the most vulnerable and food insecure in remote areas. A transparent system of financial management has been established with both national and international partners providing oversight and audit support. The PAF is in the process of building close partnership with MoAD and other line ministries in its operations.
- The National Nutrition and Food Security Steering Committee (NNFSSC) under the lead of National Planning Commission (NPC) – shall coordinate all food security and nutrition issues at national level with participation from all relevant line ministries.
- Ministry of Agricultural Development (MoAD) is responsible for the delivery of technology for agricultural production, food technology, SPS issues and managing food security issues in general.
- The Ministry of Supplies and Nepal Food Corporation (NFC) are responsible for delivery of food grains with transport subsidy in remote areas.
- Ministry of Health and Populations is responsible for nutritional support programmes
- Ministry of Local Development is responsible for food for work and similar programmes in emergencies.
- The Government of Nepal is in the process of defining the exact role and responsibility of the Ministry of Poverty Alleviation and Co-operatives, which is likely to have a direct bearing on the FNSP.

The FNSP suggests the following amendments to the functions of existing institutions and mechanisms to ensure effective implementation and coordination at all levels. Some of these proposals have been discussed during the FNSP formulation process, some have already been considered as part of the overall reform process in the GoN and others are medium term plans.

1. MNSP's institutional arrangements, namely NFSSC at the NPC, DDC, Municipality and VDC levels, would be used for FNSP, with adaptations as it evolves (this is already endorsed by the NPC, and is not repeated here). In addition, these institutions will also be included in the PAF operational process;
2. Existing District Food Management Committee, District Food Security Committee, Food Security Networks/ Task Forces, GAFSP/ FtF/ INGOs/ SWC will be assimilated into the modified NFSSCS; the DDC chair will preside over the NFSSC, and the MoAD/ MoPH's agencies serve as its co-member-secretary.
3. MoAD will develop indigenous food systems, improve value-chains (i.e., products and standards), and the DoA/DLS will extend and intensify extension support to deprived households, and mobilize the community.
4. RMDC, rural development banks, commercial banks, and other financial institutions will increase lending to support rural livelihood activities.
5. MoF and NRB will guide the banking/ financial institutions to lend to small and marginal farmers to enhance their productive assets and skills.
6. MoAD will intensify its JT/ JTA services to farmers to complement PAF in technology, group formation, capacity building and technical oversight.

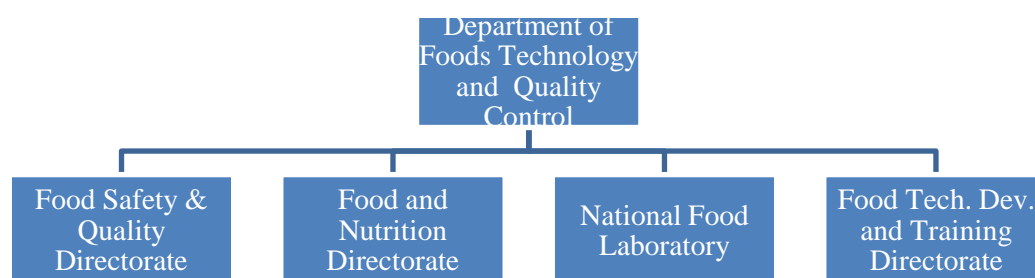
7. MoA, MoPH and Nepal Health Research Council will popularize/ localize the FBDGs for implementation by all agencies (government, chambers, civil societies and households).
8. Council of Ministers will devolve the Division Offices of Ministry of Irrigation and Ministry of Forests to operate under the DDC to coordinate the infrastructure and environmental services to targeted households.
9. The District Forestry Sector Coordination Committee shall have a prominent role in issues relating to forestry and watershed management of the FNSP.
10. PAF will work with the FNCCI-affiliated firms in industry and trade to sustain the PAF's Community/ Co-operative Organisations, and their pocket areas.
11. CBS, MoAD, MoPH and PAF will improve the data-base and information systems of the PAF-projects from its base-line, in-lines and impact evaluations to cover the productive capacity, income generation, and the food and nutrition info-system.
12. NPC/ MLD will dovetail the FNSP activities with the MDG tracking process (including the CP-MAS and DP-MAS).
13. PAF and the MoAD in coordination with other partner institutions shall build on the PAF monitoring system to monitor the envisaged FNSP activities.

### Increments in the Line-Agency Structure and Functions

The following institutional modifications have been suggested, which are already under discussion as part of the overall reform process.

1. MoAD's food security information cell will be upgraded into the "Food and Nutrition Security Division", which will not only be responsible for food security information systems but also food security coordination, policy and strategy;
2. Department of Food Technology and Quality Control will be upgraded as the "Department of Foods", and its National Nutrition Programme will be upgraded into "Nutrition Directorate" and "Food Safety Directorate" among others. The proposed structure for the DFTQC is provided in the Figure 9 below, which is currently under discussion as part of the reform process. The MoAD has already prepared detailed proposals, (similar to this) with detailed terms of references, staffing and other structural and mandate details, which is not repeated here.

**Figure 9: Proposed Structure for the DFTQC**



3. Department of Health Services will have a 'Medical Research Directorate' on activities relating to the Recommended Dietary Allowance and Nutritional Epidemiology, FBDGs, and so on;
4. MLD/ MDG Section shall build in a "People's Right-to-Food Cell".
5. Local Governments shall make a community level "Food and Nutrition Security Steering Committee" comprising the following: (i) Government: VDC Chair: President, (ii) Line agency:

Agriculture, Livestock, Health, Rangers/ Foresters, VDC: Secretary, and (iii) Community Organisations.

### **Assimilation of PAF Activities with Line Agency and Local Body**

The Poverty Alleviation Fund, chaired by the Prime Minister, has been contracting civil society, private agency and local government bodies/ line agencies as partner organisations (POs) to deliver capital grants and services using the poorest-of-the-poor-first approach. The FNSP intends to build on the success of the PAF and suggests strengthening closer collaboration and coordination with relevant line ministries and other institutions (agriculture, forestry, irrigation, health, education, social welfare, food corporation, cooperatives, chambers, etc). The PAF has a proven record of targeted transfers among the poorest households in the country. However, linkages with line ministries and technical institutions are somewhat weak. The envisaged FNSP implementation arrangement builds on the targeting and efficient transfers of productive safety nets by PAF and technical and organisational capacities of the line ministries at all levels. The PAF, MoAD and other line ministries are in the process of developing memorandum of understanding with a view to foster close working relations in line with the following proposal.

Under the proposed arrangements the following roles have been envisaged.

- The PAF in collaboration with local government, Food and Nutrition Security Committee (FNSC) shall select target area and target criteria for FNSP;
- The line ministries through their decentralised infrastructure and the FNSC shall recommend the development of appropriate income generating activities. This will also include producer group formation, technical specification of assistance provided.
- The line ministries through their decentralised infrastructure and the FNSC shall identify potential partner organisations to conduct the envisaged capacity building, service delivery and group management, including assets, group dynamics, work plan and others.
- The PAF, FNSC, VDC and DDC shall conduct periodic review of work plans, targeting criteria and achievements in each of the FNSP target areas. The same agencies shall also review and improve monitoring frameworks, household well-being rank criteria and assessment tools and methods.

### **8.2. Financial arrangements**

The current PAF mechanism will be used to manage the flow of FNSP funds as shown in Figure 10. The only changes are closer coordination and collaboration with line ministries and local government as well as the FNSC at different levels as suggested in the preceding section.

The PAF has a good track record of delivering capital grants and other services, as part of the social security initiatives, directly to hard-core poor, medium poor, and poor households and the related community services. Currently the PAF delivers the programmes by hiring partner organisation (POs) from among the DDC and NGOs, and uses the service agencies for advisory services. The FNSP suggests that technical issues should be designed and supervised by the relevant line ministries. The PAF:

- ranks and prioritizes household groups according to their well-being (viz, hard-core poor, medium poor, poor, and well-to-do), and applies the poorest-first criteria for the delivery of revolving funds for income generation;
- helps to develop the groups' financial capital, productive physical infrastructures; and

- creates social/ institutional capital to ensure progress to above the poverty line, and the achievement of food and nutrition security.

The FNSP will use PAF methodology to rapidly deliver inputs for livelihoods development, and will coordinate with the line ministries of agriculture, forestry, irrigation, health, etc., at village and community levels. The service flow mechanism of the PAF is presented in Figure 10 below.

In general the PAF speedily delivers resources to the targeted households but its system also needs to improve its coordination with line agencies for technical backstopping, programme review, and information systems, as follows:

Role/ Contribution of Line Agency in PAF Operations:

- Project area selection, facilitated by PAF,
- Recommendation for appropriate IG, enterprise development, and infrastructure development, facilitated by PO,
- Capacity development of COs, facilitated by PO,
- Periodic Review at VDC/ DDC level, preferably facilitated by VDC/DDC, line agency, or PAF

Role/ Contribution of Private Sector (Chambers of Commerce and Industries):

- Capacity development e.g., commercialization of agriculture/ agro-processing/ marketing,
- Marketing of inputs/ outputs, and
- Product information dissemination/ pocket area development

Other considerations:

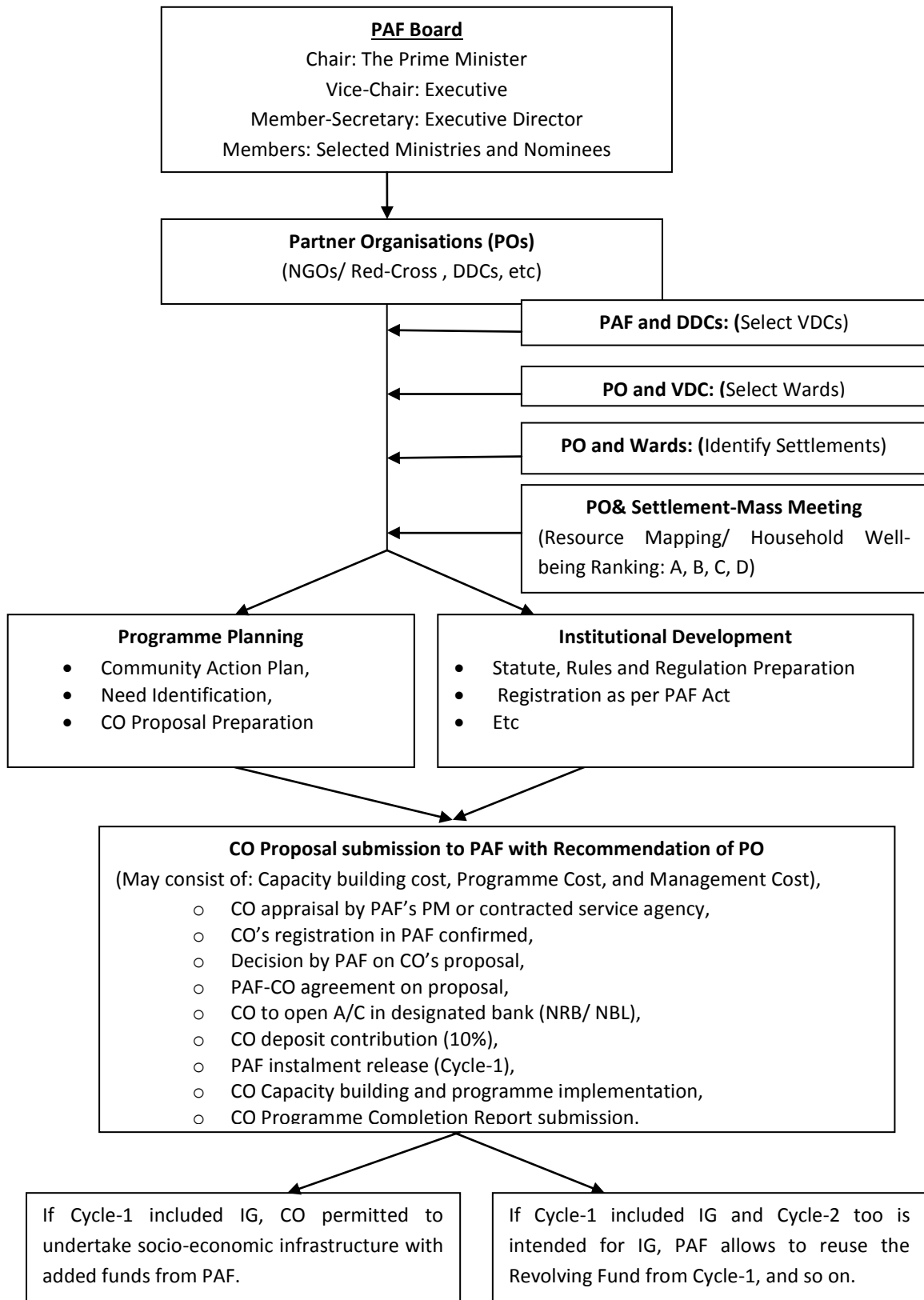
- PAF's tool for output monitoring needs to be better developed,
- Well-being ranking is contingent upon the approach adopted by facilitators,
- Simplify the Living Standards Survey (LSS) to apply in specific areas for bench-marking, in-line and post-project survey.

### **8.3. Targeting Criteria**

The PAF system of targeting districts (DDC), VDC and household shall be adopted for the FNSP. Selecting a DDC involves some 28 socio-economic indicators, and within DDCs an additional 17 indicators are used to select VDCs. The indicators are regularly collected by the Central Bureau of Statistics (CBS). The household selection criteria are also based on several socio-economic factors. The PAF criteria for targeting households is the poorest-first approach, which includes the Dalits, other indigenous groups, women headed households and other vulnerable households.



**Figure 10: PAF Programme Flow Diagram (Existing)**



## 9. Monitoring framework

At macro/national level several information sources, some of which have already been institutionalised and some remain at project basis, could lend themselves to an effective food and nutrition security information system. This, however, would require improved coordination and consolidation as well as improvements in the type and methods of data collection and utilisation. The FNSP has not attempted to make specific suggestions on the development of a food security information system, which would lend itself to regular and timely food and nutrition security monitoring in the country. Existing information sources include: (1) MoAD: Statistical Information on Agriculture; (2) DoA: Agri Marketing Information Bulletin, (3) CBS: Nepal Living Standards Survey; (4) MoHP: Nepal Demographic Health Survey; (5) NPC: CP-MAS/ DP-MAS, and MDG Tracking Reports; (6) PAF: Progress Reports; (7) NFC: Progress Reports; (8) TEPC: Trade Statistics; and (9) NRB: Economic Bulletin.

Monitoring the FNSP will be part of the PAF revised monitoring system in partnership with MoAD. Specific monitoring indicators relevant to each of the 9 components have been developed, which need to be incorporated as part of the PAF and MoAD monitoring system.

The Policy Section of MoAD may be upgraded to a Policy Monitoring and Analysis Division in which case it would be strengthened to be able to consolidate and oversee all the monitoring sub-components of FNSP. These are summarized for each of the 9 sub-sectors under Section 5 above which give a consolidated list of M&E indicators for 2013-23 for each sub-sector. These M&E indicators are derived from the existing statistical system and no new indicators have been added.