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Report No: 69117-NP

PROJECT APPRAISAL DOCUMENT

ON A

PROPOSED GRANT

IN THE AMOUNT OF US\$ \$46.5 MILLION

TO THE

GOVERNMENT OF NEPAL

FOR AN

AGRICULTURE AND FOOD SECURITY PROJECT

January 7, 2013

Sustainable Development Department  
Agriculture and Rural Development Unit  
South Asia Region

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## CURRENCY EQUIVALENTS

(Exchange Rate Effective September 27, 2012)

Currency Unit = Nepalese Rupee (NR)  
NPR 85.00 = US\$1

FISCAL YEAR  
July 16 – July 15

## ABBREVIATIONS AND ACRONYMS

AER	Agro-Ecological Region	DPSU	District Project Support Unit
AFSP	Agriculture and Food Security Project	EMF	Environmental Management Framework
BCC	Behavior Change Communication	FFS	Farmer Field School
BG	Beneficiaries Groups	FG	Farmers Group
BMI	Body Mass Index	GAFSP	Global Agriculture and Food Security Program
CDO	Chief District Officer	GDP	Gross Domestic Products
CSO	Civil Society Organizations	GEED	Gender Equity and Environment Division
CF	Community Facilitator	GoN	Government of Nepal
CIP	Country Investment Plan	GRM	Grievance Redressal Mechanism
DoA	Department of Agriculture	HIMALI	High Mountain Agribusiness and Livelihood Improvement
DFTQC	Department of Food Technology and Quality Control	HVAP	High Value Agriculture Project
DoHS	Department of Health Services	ISN	Interim Strategy Note
DLS	Department of Livestock Services	IWRMP	Irrigation and Water Resources Management Project
DADO	District Agriculture Development Office	IYCF	Infant and Young Child Feeding
DADC	District Agriculture Development Committee	LDO	Local Development Officer
DESMC	District Environment and Social Management Committee	LSIE	Livelihood and Social Inclusion Expert
DFNC	District Food and Nutrition Committee	MDGs	Millennium Development Goals
DHS	Demographic Health Survey	MNP	Micronutrient Powder
DIME	Development Impact Evaluation Initiative	MoAD	Ministry of Agriculture Development
DLSO	District Livestock Services Office	MoCPA	Ministry of Cooperative and Poverty Alleviation
DPCC	District Project Coordination Committee	MoFALD	Ministry of Federal Affairs and Local Development

MoHP	Ministry of Health and Population	PMIS	Project Management Information System
MPPWTM	Ministry of Physical Planning and Works and Transport Management	PMU	Project Management Unit
NPC	National Planning Commission	PMT	Project Management Team
		PTCC	Project Technical Coordination Committee
NARC	Nepal Agricultural Research Council	RPCC	Regional Project Coordination Committee
NLSS	Nepal Living Standard Survey	RPF	Resettlement Policy Framework
NGO	Non Governmental Organization	RPSU	Regional Project Support Unit
NTFP	Non-Timber Forest Products	SA	Social Assessment
PAF	Poverty Alleviation Fund	SE	Supervising Entity
PD	Project Director	SMF	Social Management Framework
PDO	Project Development Objective	TA	Technical Assistance
PESMC	Project Environment and Social Management Committee	USAID	United States Agency for International Development
PIP	Project Implementation Plan	VAHW	Village Animal Health Worker
		VDC	Village Development Committee

Regional Vice President:	Isabel M. Guerrero
Country Director:	Ellen A. Goldstein
Sector Director:	John Henry Stein
Sector Manager:	Simeon K. Ehui
Task Team Leader:	Animesh Shrivastava

# Agriculture and Food Security Project

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**PAD DATA SHEET**  
*Nepal*  
 Agriculture and Food Security Project  
**PROJECT APPRAISAL DOCUMENT**

*South Asia Region*  
*Agriculture and Rural Development Unit*

<b>Basic Information</b>			
Date:  Country Director:           Ellen A. Goldstein  Sector Manager/Director:   Simeon K. Ehui /John Henry Stein Project ID:                    P128905 Lending Instrument:         Grant Team Leader:                 Animesh Shrivastava	Sectors:            General agriculture (40%); Agri. Extension& Research (20%); Crops (20%); Animal Production (20%)  Themes:           Rural Development (60%); Global Food Crisis Response (20%); Nutrition and Food Security (20%)  EA Category:     B		
Does the project include any CDD component? No			
Joint IFC: No			
<b>Borrower: Government of Nepal</b>			
Responsible Agency: Ministry of Agriculture Development (MoAD)			
Contact:	Jaya Mukunda Khanal	Title:	Secretary, MoAD
Telephone No.:	00977 1 4211808	Email:	<a href="mailto:jayamkhanal@moad.gov.np">jayamkhanal@moad.gov.np</a>
<b>Project Implementation Period:</b>			
Start Date:	January 2013	End Date:	December 2017
Expected Effectiveness Date:	January 2013		
Expected Closing Date:	December 2017		
<b>Project Financing Data(US\$M)</b>			
<input type="checkbox"/>	Loan	<input checked="" type="checkbox"/>	Grant
<input type="checkbox"/>	Credit	<input type="checkbox"/>	Guarantee
<input type="checkbox"/>		<input type="checkbox"/>	Other
<b>For Loans/Credits/Others</b>			
Total Project Cost :	58.0	Total Bank Financing :	46.5
Total Co-financing :	11.5	Financing Gap :	0
<b>Financing Source</b>	<b>Amount(US\$M)</b>		
BORROWER/RECIPIENT	11.5		
IBRD			
IDA: New			
IDA: Recommitted			
Others (GAFSP)	46.5		
Financing Gap	0		
Total	58		

<b>Expected Disbursements (in USD Million)</b>									
Fiscal Year	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18			
Annual	1.5	6	11.5	11	10	6.5			
Cumulative	1.5	7.5	19	30	40	46.5			
<b>Project Development Objective(s):</b>									
The Project Development Objective is to enhance food and nutritional security in targeted communities of Nepal.									
<b>Components</b>									
<b>Component Name</b>							<b>Base Cost (USD Millions)</b>		
Component 1: Technology Development and Adaptation							7.739		
Component 2: Technology Dissemination and Adoption							26.812		
Component 3: Food and Nutritional Status Enhancement							8.940		
Component 4: Project Management							5.624		
<b>Compliance</b>									
<b>Policy</b>									
Does the project depart from the CAS in content or in other significant respects?							Yes [ ]		No [ X ]
Does the project require any exceptions from Bank policies?							Yes [ X ]		No [ ]
Have these been approved by Bank management?							Yes [ X ]		No [ ]
Is approval for any policy exception sought from the Board?							Yes [ ]		No [ X ]
Does the project meet the Regional criteria for readiness for implementation?							Yes [ X ]		No [ ]
<b>Safeguard Policies Triggered by the Project</b>							<b>Yes</b>		<b>No</b>
Environmental Assessment OP/BP 4.01							X		
Natural Habitats OP/BP 4.04							X		
Forests OP/BP 4.36							X		
Pest Management OP 4.09							X		
Physical Cultural Resources OP/BP 4.11									X
Indigenous Peoples OP/BP 4.10							X		
Involuntary Resettlement OP/BP 4.12							X		
Safety of Dams OP/BP 4.37									X
Projects on International Waters OP/BP 7.50							X		
Projects in Disputed Areas OP/BP 7.60									X
<b>Legal Covenants: None</b>									
<b>Name</b>				<b>Recurrent</b>		<b>Due Date</b>		<b>Frequency</b>	
<b>Description of Covenant</b>									

<b>Team Composition</b>					
<b>Bank Staff</b>					
<b>Name</b>	<b>Title</b>	<b>Specialization</b>	<b>Unit</b>	<b>UPI</b>	
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Sitaramachandra Machiraju	Sr Rural Development Specialist	Livelihoods	SASDA		
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Drona Raj Ghimire	Environmental Specialist	Environmental Safeguards	SASDI		
Yogesh Bom Malla	FM Analyst	Financial Management	SARFM		
Blair Edward Lapres	E T C	Monitoring & Evaluation	SASDA		
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Dikshya Dawadi Pokharel	Consultant	Operations	SASDA		
Tara Shrestha	Program Assistant		SASDO		
Venkatakrishnan Ramachandran	Program Assistant		SASDO		
<b>Non Bank Staff</b>					
<b>Name</b>	<b>Title</b>	<b>Office Phone</b>	<b>City</b>		
Benjamin O'Brien	Agriculture Specialist (FAO)		Bangkok		
Sundaramurthy Selvarajan	Economist (FAO)		Rome		
<b>Locations</b>					
<b>Country</b>	<b>First Administrative Division</b>	<b>Location</b>	<b>Planned</b>	<b>Actual</b>	<b>Comments</b>



## I. STRATEGIC CONTEXT

### A. Country Context

1. **Nepal is still emerging from a 10-year armed conflict that ended in 2006. It is currently passing through a momentous and prolonged political transition.** This transition entails two interrelated processes: promulgation of a new Constitution and the completion of the ongoing peace process. The focus on the political transition process has to some extent overshadowed issues of economic and other reforms (law and order, focus on growth and job creation, fostering a positive investment climate), with political uncertainty impacting timing and quality of public expenditure decisions. The general economic situation has improved considerably despite the difficult political environment. GDP growth rose to about 5 percent from 3.5 percent a year earlier, the second highest growth rate since the end of the conflict in 2006. Remittances, at 25-30 percent of GDP, continue to dominate the economy supporting consumption. Nepal has made good progress both in terms of poverty reduction and improvement of social indicators. The proportion of poor people has fallen substantially from 45 percent in 1995-96 to 25 percent in 2010-11. Nepal's overall Gini coefficient has simultaneously declined from 0.41 to 0.35 as poor segments of the population have been able to increase household incomes (often with the help of remittances). Nepal has also made impressive improvements towards the achievement of Millennium Development Goals (MDGs) including in the areas of primary education, gender parity and under-5 child mortality. However, relevant to the proposed operation, the nutritional status of women and children has not shown much improvement, with malnutrition and stunting affecting about half of the nation's children. Recently, the Economic Intelligence Unit of the Economist issued the *2012 Global Food Security Index* report that ranks Nepal 79<sup>th</sup> out of the 105 countries ranked.

2. **Despite the potential, development indicators in the project-targeted Mid and Far West regions of the country are significantly below the national average.** The Nepal Living Standard Survey (NLSS III, 2010) showed that 37 percent of people in the rural hills of the Mid- and Far-West regions are below the poverty line compared to the national average of 25.16 percent. Yields of major crops in the region are typically more than 25 percent below the national averages. Per capita consumption of animal products (32 litres of milk, 7.5 kg of meat and 6.4 eggs per capita per annum) is among the lowest in the world. The prevalence of hunger is also the highest in these regions with hunger indices pointing to an extremely alarming situation<sup>1</sup>. Similarly, these areas show the highest incidence of diarrhea (and yet less than a third of the children reportedly receive oral rehydration therapy). Natural disasters (especially, droughts in the mountain/hills and floods in the *Terai*), often triggered by extreme weather events, significantly impact agricultural production and livelihoods, especially in the rainfed marginal lands typically farmed by the most food insecure households. Based on exposure to climate change, poverty and adaptive capacity, Nepal ranks as the fourth most-at-risk country according to the Climate Vulnerability Index.

3. **In 2010, the Government of Nepal (GoN) led consultation with donors, civil society organizations and other stakeholders, directed the development of a Country Investment Plan (CIP) to comprehensively address agriculture and food security including issues of**

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<sup>1</sup> *The Food Security Atlas of Nepal*, Food Security Monitoring Task Force. National Planning Commission, 2010.

**availability, access and utilization.** Building on this, GoN submitted an investment proposal to the Global Agriculture and Food Security Program (GAFSP) and was competitively awarded a grant of US\$46.5 million in June 2011.<sup>2</sup> GoN has also developed, again in consultation with relevant development partners and stakeholders, a Multi-Sectoral Nutrition Plan. These coordination efforts look likely to attract more planned allocation of resources from both GoN side and development partners side (e.g., the Asian Development Bank, currently supporting the formulation of a 20-year Agricultural Development Strategy with a focus on food security; and USAID which is in the process of launching its *Feed the Future Initiative* in the Mid- and Far-West regions and has an on-going *Suaahara* Program).

## **B. Sectoral and Institutional Context**

4. **Agriculture (including crop, livestock and fisheries) is the mainstay of the rural economy but its productivity is low.** Nearly two-thirds of the country's population (66 percent) is employed in agriculture. However, agricultural productivity is one of the lowest in the South Asia region and has been virtually stagnant for over a decade. The situation is even worse in the Mid-Western and Far-Western regions where food production is barely enough to meet more than six months' demand. Thus, most people in the region are dependent on external/emergency food supply, with the World Food Program alone supplying over 25 thousand metric tons of food in 2011 reaching approximately 550,000 beneficiaries in these regions. The continued food insecurity and lack of economic opportunities has triggered out-migration of youth in search of employment opportunities as the agricultural potential of the region remains yet to be exploited.

5. **The agriculture sector faces a multiplicity of challenges that constrain its performance well below its potential.** Agriculture is typically characterized by small holder, traditional and subsistence farming; limited use of improved livestock breeds, crop varieties or modern inputs and management practices; and high susceptibility to pest and disease incidences. Problems to be addressed include: (i) low availability of good quality seed and improved breeds of livestock at the farmer level (the seed replacement ratio is 4.27 percent against GoN target of 25 percent and, moreover, seeds used by farmers are often of outdated variety, and with low purity and germination rates; given the low base, seed quality enhancement alone can lead to an estimated yield increase of 15-20 percent in case of cereals, at least 20 percent in potato, 40-50 percent in oilseeds, and over 100 percent for maize; and finally, breed improvement can produce significant gains in livestock productivity); (ii) insufficient development by the research system of "appropriate" – location and problem specific – technologies and management practices for use by farmers that tap topographic and climatic advantages or address local constraints; (iii) weak research-extension-farmer linkage; (iv) thin and inadequate extension support (even after significant enhancement in recent years, less than 15 percent of farm households are reached by the extension system; and each Agricultural Support Centre – the lowest, sub-district extension node – covers approximately 9,000 holdings, dispersed over a difficult terrain); (v) low investment in productive assets, including supplementary irrigation infrastructure to reduce rain-dependence; (vi) poorly developed market linkages; and (vii) lack of institutions and instruments for agricultural risk-bearing and risk-sharing. Budgetary and staff resources for public research

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<sup>2</sup> The World Bank has been nominated as the Supervising Entity (SE) for this grant-financed project by the GoN and the GAFSP Steering Committee. Under the terms of GAFSP grant agreement, the project will be prepared in line with the rules and procedures of the SE, with the difference that the project will be finally approved by the Regional Vice-President and not the Board.

(the Nepal Agricultural Research Council or NARC) and extension agencies (Departments of Agriculture and of Livestock Services) are stretched. Further, under a decentralized development approach, local level financing and coordination of agricultural support services is done by District Development Committees (DDCs) rather than vertically by the line departments. On the other hand, beyond GoN, there exist a number of non-governmental entities or community-based organizations that fill the gap to some extent in the provision of agricultural support services.

6. **Food availability in the project area is low and can be enhanced by closing the substantial yield gap.** In 2007/8, for instance, the hill and mountain districts of the Mid-Western and Far-Western development regions – where the project will be located – produced only 3 percent and 2 percent respectively of the national paddy production, 11 percent and 3 percent of maize production and 9 percent and 4 percent of wheat production (see Table 1 below). In these remote areas, food availability and access is largely dependent on local production. There is substantial scope to increase yield, especially through use of improved seeds and crop mixes.

**Table 1: Estimated Production of Food Crops by Development Region and Ecological Zone**

<b>Estimated Production of Food Crops for Development Region and District</b>	<b>2007/2008 Paddy (In M.Ton)</b>	<b>2007/2008 Maize (In M.Ton)</b>	<b>2007/2008 Wheat (In M.Ton)</b>	<b>2007/2008 Millet (In M.Ton)</b>	<b>2007/2008 Barley (In M.Ton)</b>
Mid-West. Mountain Districts	12611	14846	17196	8658	7449
Mid-West. Hill Districts	115578	195279	123660	15256	5588
Mid-West. Terai Districts	331927	83060	122370	160	50
<b>Mid-West. Dev. Reg.</b>	<b>460116</b>	<b>293185</b>	<b>263226</b>	<b>24074</b>	<b>13087</b>
<i>Regional Share of National Production</i>	<b>10.7%</b>	<b>15.6%</b>	<b>16.74%</b>	<b>8.27%</b>	<b>50.13%</b>
Far-West Mountain Districts	22783	18990	25782	5810	3365
Far West Hill Districts	56477	37109	43402	7295	1205
Far West Terai Districts	284500	45075	99350	380	170
<b>Far West Dev. Reg.</b>	<b>363760</b>	<b>101074</b>	<b>168534</b>	<b>13485</b>	<b>4917</b>
<i>Regional Share of National Production</i>	<b>8.46%</b>	<b>5.38%</b>	<b>10.72%</b>	<b>4.63%</b>	<b>18.83%</b>
<b>Nepal</b>	<b>4299246</b>	<b>1878648</b>	<b>1572065</b>	<b>291098</b>	<b>26106</b>

7. **Migration is high, comprising predominantly young, rural and male workers. Yet remittances are not sufficient to ensure food security in the project area.** According to the 2010/11 Nepal Living Standards Survey (NLSS), migrant men and women account for over 40 percent of total population (including absentees abroad). Two-thirds of migrants are 24 years or younger over 90 percent migrate from rural areas and male absentees of all ages amounted to 29.8 percent of the total population (including absentees abroad), while migrant women only accounted for 10.9 percent (NLSS, 2010/11). The feminization – and “greying” – of agricultural labor force suggests the need to make agriculture technology, extension and other interventions more gender sensitive (some issues are addressed in this project). On the incomes side, remittances, while crucial for the rural economy, remain secondary to agriculture for sustaining food security, especially in the poorer and more remote locations. For instance, households in the

Mountain regions only derive around 9 percent of their incomes from remittance, while the contribution of agriculture is around 59 percent. Meanwhile, households in the Mountains spend around 65 percent of their annual income on food, while those in the Hill districts spend 55 percent. Thus, enhancing agriculture production and productivity remains critically important in the project area.

8. **On the nutrition and health side, chronic maternal and child malnutrition remains a serious problem in Nepal and constrains the country’s social and economic development.** Chronic energy deficiency in women (as measured by the Body Mass Index – BMI) remains high at 23.9 percent in the Far-West and 19.3 percent in the Mid-West. The prevalence of low birth weight babies is reported as 14.1 percent in the Mid-West and 14.9 percent in the Far-West where nearly half the children under five (46.4 percent) are stunted and one-third (32.6 percent) are underweight. Similarly, in the Mid-West, over half the children under five (50.3 percent) are stunted and over one-third (36.9 percent) are underweight. Wasting, which reflects more short-term under-nutrition, currently stands at 11.3 percent in the Mid-West and 10.9 percent in the Far-West. Maternal under-nutrition and stunting have declined since the Demographic Health Survey (DHS) of 2001, but wasting has remained constant during the decade. The consequences are significant and long-term, ranging from increased neonatal mortality and morbidity to irreversible adverse physical and cognitive outcomes that lead to unfavorable lifelong consequences for health, productivity and economic growth.

9. **GoN has accorded high priority to the agriculture sector, food security issues and to the Mid and Far West development regions.** The Interim Constitution of Nepal 2007 recognizes food sovereignty as a fundamental right of citizens. The importance of agricultural growth and food security has been underscored in a series of GoN documents and plans, including: the second Three Year Plan (2010/11-12/13), the National Agriculture Sector Development Priority plan (NASDP 2011-2015), and the associated Country Investment Plan (CIP). Also, as mentioned, a Multi-Sectoral Nutrition Plan, led by the National Planning Commission (NPC), aims to integrate, *inter alia*, contributions from the agriculture sector (Ministry of Agriculture Development) to lay the foundation of a national “nutritional architecture”. With the support of various development partners, a number of projects have also been undertaken that aim to address many of the development challenges listed above – typically at a limited scale – such as local seed production and storage, participatory action research for locally suited varieties, livestock productivity enhancement, crop diversification, off-farm livelihood development (including micro-enterprises), training and capacity building of Farmer Groups (FGs). These project experiences have generated useful lessons about these interventions (see also section III C below) as well as underlined the importance of involving FGs to overcome limitations of capacity and outreach in the formal technical support or extension system.

10. **The AFSP addresses country need and government priorities, and its interventions are aligned with and/or complementary to key operations under implementation or planning in the project area.** There are a number of other relevant projects and initiatives operating in the project area. The World Bank’s *Poverty Alleviation Fund* (PAF II) is a \$165 million project that aims to improve living conditions, livelihoods, and empowerment among the rural poor and vulnerable groups. PAF II operations will complement AFSP’s objectives to increase “food access” in 18 overlapping districts due to their efforts at helping improve food security in response to drought and price fluctuations. The *Nepal Social Safety Nets Project* will

similarly seek to improve agricultural production and nutritional impact, primarily through food and cash for public works programs, as the means for increasing agriculture production in food insecure areas. Assisting in the “availability” dimension of Food Security, the World Bank’s *Irrigation and Water Resources Management Project (IWRMP)* is supporting the rehabilitation and modernization of small/medium farmer-managed surface irrigation projects and is assisting in the development of groundwater sources and management of schemes. The Health SWAp and the Bank’s recently approved *Sunaula Hazar Din* (“Golden 1000 Days”) project, will further invest to improve the nutritional status of pregnant women and children under the age of 2, which will have a longer term impact on food security in the region. Beyond the Bank-assisted projects, the USAID’s *Feed the Future* initiative shares significant common goals and features with this project, and complements it geographically by focusing on primarily the *Terai* (plains) and some hill districts of the Mid/Far West Development Regions.

### **C. Higher Level Objectives to which the Project Contributes**

11. **The proposed operation directly supports relevant objectives of the GoN and the Bank’s Interim Strategy Note (ISN), 2012/13.** Improving agricultural productivity – the core focus of the proposed operation – is an important element in the ISN’s Pillar 1: *Enhancing Connectivity and Productivity for Growth*. Pillar 2 of the ISN – *Reducing Vulnerabilities and Improving Resilience* – is also supported by targeting food insecure households to enhance their food availability, nutritional status and capacity to cope with some climate change risks to their livelihoods. Finally, by targeting the relatively under-served populations in the hill and mountain regions, economically weaker/marginal farmers, young women and infants (specifically for nutritional status enhancement), the operation will also contribute toward the ISN’s second cross-cutting theme: *Fostering Gender Equality and Social Inclusion*.

## **II. PROJECT DEVELOPMENT OBJECTIVES**

### **A. PDO**

12. The Project Development Objective (PDO) is to enhance food and nutritional security of targeted communities in selected locations of Nepal.

13. Food security will be realized through increased food availability, made possible by increasing productivity of agriculture, both crop and livestock. Nutrition security will be realized through improved dietary intake, made possible by promotion of diversified diets, and improved feeding and caring practices for pregnant and nursing women and children up to 2 years of age.

### **B. Project Beneficiaries**

14. **Project Area.** The project will be implemented in 19 hill and mountain districts of the Mid- and Far-Western development region of Nepal<sup>3</sup>. These districts comprise 784 VDCs which together have over 645,000 households and a population of about 3.4 million. It is expected that approximately a quarter of these VDCs will be covered directly by the project. Within each project district, two clusters of contiguous VDCs will be chosen in order to share administrative

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<sup>3</sup> Darchula, Baitadi, Dadeldhuda, Humla, Jumla, Mugu, Dolpa, Kalikot, Bajhang, Bajura Jajarkot Achham, Doti, Dailekh, Surkhet, Rukum, Salyan, Rolpa, and Piuthan

and technical support staff. Similarly, within each VDC as far as feasible clusters of contiguous wards will be chosen.

15. **Project Target Groups.** The beneficiaries of the project will be crop farmers (estimated direct beneficiaries 50,000), livestock farmers (32,500), women engaged in household/kitchen-garden production (35,000), and households with pregnant and nursing women (45,000). The project interventions will be organized and implemented through groups, including pre-existing groups in the project area. Also, given the crucial role of women in agriculture and nutrition, special attention will be given to their targeting and inclusion in project interventions.

16. **Selection Criteria.** The choice of the districts, VDCs and wards within them will be guided by clear selection criteria (described in the Project Implementation Plan or PIP) reflecting considerations of need/demand, relevant area (agro-ecological) and beneficiary (socio-economic) characteristics, scope/potential for demonstrating impact, and technical and administrative feasibility. The choice of beneficiaries within a ward (the lowest administrative unit for organizing project interventions) will also be guided by specific selection criteria – detailed in the PIP – which will reflect the intended purpose and focus of an intervention/activity, and will therefore vary across components. The intensity (or “extent”) of coverage within a ward will be also determined by the nature of the intervention. Where the purpose of the project is to demonstrate technologies/practices for adoption by subsequent groups, only a proportion of the beneficiaries in the wards will be chosen. (The other households in the wards are expected to benefit by taking up these demonstrated activities as *indirect beneficiaries* through farmer-to-farmer support.)

### C. PDO Level Results Indicators

17. The key expected outcomes from the project are: (i) increase in the productivity of targeted crops; (ii) increase in the yield of targeted livestock products (milk, meat and eggs); (iii) increase in proportion of pregnant and nursing mothers and children between 6-24 months’ age adopting appropriate feeding practices. Related indicators at the outcome level as well as the intermediate results level are given in Annex 1.

## III. PROJECT DESCRIPTION

### A. Project Components

18. **Overall Design.** In order to achieve its PDO, the project will seek to address the interlocking problems in the project area through coordinated interventions, including: (i) adaptation (customization/validation) and release in specific agro-ecologies of relevant available technologies to boost productivity and climate resilience of agriculture; (ii) enhancing local availability of improved seed and livestock; (iii) supporting farmers to adopt improved management and husbandry practices, use of modern inputs and market access; (iv) improving household availability of nutritious foods through community grain banks, homestead production (kitchen gardens and backyard poultry), promotion of diversified diets, increased nutrient intakes and improved feeding and caring practices for pregnant and nursing women and children up to 2 years of age; and (v) promotion of time- and labor-saving technologies for women. By design, the project will be putting farmers at the core of the interventions to ensure that the technology

and practices developed and disseminated represent farmer interest and needs. It will follow a pragmatic approach, offering a menu of options which, however, will be designed according to area (agro-ecological) and beneficiary (socio-economic) characteristics. Overall, the project will have four components, the fourth relating to project management.

### **Component 1: Technology Development and Adaptation (Cost US\$ 7.739 M)**

19. This component will support the PDO by developing for project area farmers' use appropriate technologies and resources (seeds and breeds) that contribute to increased productivity of crops and livestock. There are two sub components: (i) Improved production technologies for Crops, and (ii) Improved production technologies for Livestock. The crops' sub-component comprises varietal selection, development (especially with regard to drought tolerance and disease resistant), maintenance and production of source seeds upon field validation. The pre-identified promising crops to be targeted include rice, wheat, maize, millet, barley and potato due to their prevalence and caloric potential; but the component may also include minor and nutritionally significant crops such as buckwheat, black gram, soybean, local beans, lentil and other select food crops and vegetables. The scale and extent of cultivation of these crops will vary according to suitability of the agronomic conditions for the specific location. Additionally the project will develop and validate the following agronomic practices for dissemination in the project areas: integrated crop management technologies, land preparation and planting methods, soil fertility restoration measures, harvesting and post-harvest loss management practices, seed treatment, and soil moisture/water harvesting techniques. Staff trained under the project will conduct research, trials and demonstrations at NARC field research stations and volunteer farmer fields in the project district in order to ensure validation and participatory varietal selection. The livestock sub-component comprises improving breeding stock for goat and poultry production, and development of improved technology packages. Activities to be financed under this component include: providing trials and demonstrations, conducting training and capacity building activities, improving research infrastructure and operating costs for source seed production and germplasm import (eggs, semen, bucks etc), developing and managing foundation breeding stock. The expected outputs from this component will be release of improved crop varieties and maintenance of poultry parental lines and bucks, improved packages for crop and livestock production, more problem-focused research and better extension support and communications with accompanying supply lines of certified and marketable seed and breeding stock.

### **Component 2: Technology Dissemination and Adoption (US\$26.812M)**

20. This component will support the PDO by enabling farmers in the project area to adopt improved agricultural production technologies and management practices (especially those developed and promoted under Component 1). The component is designed to address the following set of constraints: restricted availability of improved variety seeds and breeding stock, weak absorption capacity of farmers, poor animal husbandry, limited farmer capacity to make complementary on-farm investments, and limited capability and outreach of extension departments. The component has three sub-components: (i) support for crop production (disseminating improved varieties and practices, including for local seed production and kitchen gardens, on-farm water management support and farm level post harvest value addition); (ii) support for livestock production (poultry in the mountain districts; meat and dairy goat and

dairy cattle/buffalo in the mid-hill districts); (iii) Institutional Strengthening for Extension and Outreach (strengthening and technically backstopping extension at VDC and community levels, including capacity building of “lead” farmers and village resource persons for farmer-to-farmer learning). Items to be financed under this component include farmer group identification and mobilization, small grants to farmers’ groups, training for farmers and agricultural/livestock support service providers, organization of demonstrations through Farmer Field Schools (FFSs), support to farmers for adoption of disseminated technologies. Formation and development of FG and FFS will be supported by service providers/NGOs. Expected results from this component on the crop side are adoption of improved crop varieties and practices by farmers and enhanced availability of good quality seed at the local level. On the livestock side, expected results are adoption of improved breed of livestock and better husbandry practices, leading to increased production of meat (poultry and goat), milk (goat, cattle and buffalo) and eggs.

### **Component 3: Food and Nutritional Status Enhancement (US\$8.940 M)**

21. This component will contribute to enhancing food and nutrition security in project areas through increased food availability for targeted households and promotion of diversified diets and improved feeding and caring practices for pregnant and nursing women, and children between 6-24 months of age. The component comprises activities that leverage key entry points in the agriculture sector to improve nutrition, as well as through strengthening and supporting key nutrition interventions in project areas. There are three sub-components, namely: (i) *Enhancing food availability for targeted households* and alleviating seasonal food shortages through; promoting community grain banks; home-level food preparation, preservation and processing of locally available high nutritive-value foods; (ii) *Improving feeding and caring practices* by; promoting Behavior Change Communications (BCC) and homestead production (kitchen garden and backyard poultry) groups amongst households with pregnant or nursing mothers and children under two; providing nutrition education to farmers groups; promoting simple household labor-saving and drudgery-reducing technologies for women to liberate time for self and child care<sup>4</sup>; and (iii) *Institutional strengthening and capacity building* by; training of agriculture and livestock department staff for pro-nutrition actions; strengthening capacity of the Department of Food Technology and Quality Control (DFTQC) to promote safe and nutritious foods in the project area. Activities to be financed under the nutrition component include: development of nutrition education and BCC packages and material; trainings; and small grants for simple technologies for home food processing, preservation and reducing women’s labor and drudgery; and grain banks.

### **Component 4: Project Management (US\$5.624 M)**

22. This component will contribute to attainment of the PDO by ensuring that (i) interventions undertaken under the project are properly planned, coordinated and aligned with

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<sup>4</sup> This sub-component will complement activities of crop and livestock production and kitchen gardens and backyard poultry production under Component Two. It will also benefit from direct (ongoing) nutrition interventions of the Ministry of Health and Population such as iron-folate supplementation for pregnant, nursing mothers, vitamin A supplementation for children and distribution of Micronutrient powders/Fortified Flour Supplement. These will be provided by the MoHP in 11 project districts. The BCC component will be implemented in all VDCs of six districts (Districts of Karnali and Jajarkot - these districts have very poor nutrition indicators and MoHP has requested full coverage of these districts)



project design and development objectives; (ii) implementation and institutional arrangements and activities are in line with relevant fiduciary and safeguards policies, procedures and standards; and (iii) there is due monitoring, oversight and reporting of project implementation and the resulting outputs and outcomes. The project will finance the establishment and operation of (i) a Project Management Unit (PMU) in Kathmandu, and (ii) a Regional Project Support Unit (RPSU) in each region – Surkhet in the Mid-Western region and Dipayal in the Far-Western region. At the district level, major implementation responsibilities will be through the district level offices of the Agriculture or Livestock Departments – District Agriculture Development Office (DADO) and District Livestock Service Office (DLSO) – respectively. District Project Support Unit (DPSU) will be assigned the role to facilitate district level stakeholder coordination, project orientation and coordination of joint planning and participatory monitoring, involving stakeholders either at DADO or DLSO. The DPSU responsibilities will be decided by the Ministry of Agriculture Development (MoAD). Activities to be financed under this component include: (i) establishing and supporting project units at the overall, regional level and district levels; (ii) specialized support services relating to key activities such as external audit, financial accounting and procurement; and (iii) training of staff involved in project implementation.

23. ***Project Component Inter-linkages.*** Each component of the project, while having distinct and separate functions, will have synergistic linkages with the other components, which together will aim to address the availability, access and utilization of food in support of the PDO. Components 1 & 2 have a strong linkage: the agricultural research and development coming out of component 1 will be disseminated for field-level adoption through the farmer extension mechanisms of component 2. Livestock products even in small quantities improve nutrition and so over 95% of livestock activities will target women and overlap with kitchen gardens supporting diet diversity and manure for these gardens. Attempts will be made during implementation – reflected in Project Implementation Plan (PIP) – to link Component 3 with the other components in order to make them nutritionally sensitive through activities that leverage key entry points in the agriculture sector. Significant project evidence from Nepal shows that (i) BCC for improved nutrition is less effective without agriculture-related interventions; and conversely (ii) when increases in household income and productivity of nutritious foods occurs (e.g., kitchen gardens), people become more receptive to BCC messages. Thus this component will take advantage of the increased food availability and access of nutritious food – such as eggs, meat, milk and vegetables – enabled by Components 1 and 2, in order to translate production into consumption and improved nutrition outcomes. Under Component 3, women will be given training in the safe processing of locally available nutritious foods (from household kitchen gardens and backyard poultry) for food storage and improved dietary intake. Women will also benefit from the labor saving technologies, which will allow them more time and ability to care for infants and children. Extension agents and FGs organized under component 2 will also benefit from nutrition training made possible by curriculum developed and training organized through component 3. Thus, the activities (and resultant outputs) of each component combine with the activities of the others to ensure that key aspects of food security (including issues of availability, access, and utilization) are addressed in a way that allows the project beneficiaries to improve their food consumption and nutritional outcomes.

## B. Lending Instrument

24. The project will be financed by a grant provided under the Global Agriculture and Food Security Program.

## C. Project Cost and Financing

**Table 2: Project Cost and Financing**

Project Components	Project cost (US\$ M)	GAFSP Financing (US\$ M)	% Financing
1. Technology Development and Adaptation	7.739	7.492	97%
2. Technology Dissemination and Adoption	26.812	20.673	77%
3. Food and Nutritional Status Enhancement	8.940	5.960	67%
4. Project Management	5.624	5.403	96%
<b>Total Baseline Costs</b>	<b>49.115</b>	<b>39.528</b>	<b>80%</b>
Physical contingencies	2.456	1.927	78%
Price contingencies	6.429	5.045	78%
Total Project Costs	<b>58.000</b>	<b>46.50</b>	
Interest During Implementation	-		
Front-End Fees	-		
<b>Total Financing Required</b>	<b>58.000</b>		

## D. Lessons Learned and Reflected in Project Design

25. The design of this project incorporates lessons learned from on-going projects in Nepal, similar GAFSP-funded previous project in Bangladesh and in the Region more generally.

**Table 3: Lessons Learned and Key Project Design Features**

	Lesson	Key Design Feature
1.	Demonstrations, organized as one-off events, do not produce significant adoption and spread effects	<ul style="list-style-type: none"> <li>• Demonstrations in this project are part of phased, multi-year engagement at any project site</li> <li>• The design and working of BGs/FGs is intended to facilitate demonstration-cum-adoption effects</li> </ul>
2.	Lack of complementary inputs – especially seeds – limits adoption of demonstrated crops/varieties (often,	<ul style="list-style-type: none"> <li>• Enhancement of seed availability at the farmer level has been given priority in the project</li> </ul>

	<b>Lesson</b>	<b>Key Design Feature</b>
	farmers have no access to the newer varieties demonstrated)	<ul style="list-style-type: none"> <li>• Arrangements for community production and storage of seed have been emphasized to reduce risks/vagaries of seed supply through formal channels</li> </ul>
3.	Adaptive research (even if problem-solving in orientation) does not produce significant impact on the ground unless it links in with extension agents and farmers' plans	<ul style="list-style-type: none"> <li>• Strengthening research-extension-farmer linkages is a key element in design:</li> <li>• Adaptive research involves farmers in participatory variety selection</li> <li>• Research scientists will interact with and train extension agents and farmers</li> <li>• Annual Extension plans will formally take into account technologies developed for dissemination in the area</li> </ul>
4.	Extension service is primarily focused on increasing agricultural productivity rather than natural resource management issues (soil fertility management, water conservation technologies, and climate change adaptation and mitigation)	<ul style="list-style-type: none"> <li>• Project therefore emphasizes development of appropriate packages of good practices by NARC in both crops and livestock, and their subsequent propagation through extension.</li> </ul>
5.	Community mobilization and preparatory activities are crucial to secure meaningful beneficiary involvement in project design and implementation	<ul style="list-style-type: none"> <li>• Project will follow a structured, detailed calendar of preparatory and mobilization activities, backed up by DPSUs in coordination with implementing agencies and relevant service providers/NGOs.</li> </ul>
6.	Poor involvement of beneficiary in the identification of local priorities and developing plans is one of the reasons causing deficient results from the implemented activities	<ul style="list-style-type: none"> <li>• Mobilize Producer Collectives in the identification of local needs and priorities</li> <li>• Develop plan suitable to the local priorities</li> <li>• Seek support around beneficiary-preferred activities</li> <li>• Engage beneficiary participation in needs assessment and prioritization of project activities.</li> </ul>
7.	To enhance viability of goat and poultry keeping by poor farmers, it is important to have strong technical backstopping; also, livestock programs need to be complemented with feed development, improved health and management practices.	<ul style="list-style-type: none"> <li>• Design of livestock support activities pays attention to relevant backward/forward linkages, and augments the technical backstopping capacity.</li> </ul>
8.	Significant project evidence from Nepal shows that (i) BCC for improved nutrition is less effective without agriculture-related interventions; and conversely (ii) when increase in	<ul style="list-style-type: none"> <li>• Inclusion of Component 3, combined with coordinated project implementation arrangements (and training of personnel), aims to integrate the outputs of other</li> </ul>

	<b>Lesson</b>	<b>Key Design Feature</b>
	household income and productivity of nutritious foods occurs (e.g., kitchen gardens), people become more receptive to BCC messages	components with the inputs of the third to ensure effective behavior change and nutrition outcomes.
9.	NGOs and other service providers have a strong track record, especially in remote areas of Nepal, of promoting innovative interventions, and providing relevant facilitation and technical support.	<ul style="list-style-type: none"> <li>• Project implementation design allows for such service providers to be engaged by the project to supplement efforts of relevant ministry/department which has the responsibility for implementing specific components to produce the expected results.</li> </ul>
10.	Strong M&E greatly improves implementation and enhances the attainment of PDO.	<ul style="list-style-type: none"> <li>• A comprehensive M&amp;E system will be put in place involving internal, external (third party) and participatory monitoring. It will be backed up by a robust grievance redressal mechanism.</li> <li>• Monitor implemented activities regularly and take corrective measures to control deviations, if any.</li> <li>• Encourage application of participatory self-appraisal practices among Producer Collectives.</li> </ul>
12.	Services offered for targeted households often encounter the risk of elite capture.	<ul style="list-style-type: none"> <li>• Involve targeted beneficiaries into the decision making groups</li> <li>• Engage group members not as recipients but as active managers of group activities</li> </ul>
13.	Poor access to institutional support services is a constraint in enhancing production	<ul style="list-style-type: none"> <li>• Train and mobilize Management Committee of Producer Collectives in taking lead role for accessing institutional services for the benefit of group members</li> <li>• Organize Producer Collectives in developing activity proposals and business plans to access institutional services.</li> </ul>

### **E. Linkages with Other Projects**

26. The AFSP will build upon operational and implementation experience gained under other active projects in the Nepal portfolio (for instance: the *Social Safety Nets Project*, the *Poverty Alleviation Fund (PAF)*, the *Health SWAp* and *Irrigation and Water Resources Management Project (IWRMP)*). On the ground, AFSP will have an open design that will allow it to work with the existing groups and community organizations formed under other projects such as the PAF (in addition to any new group that may need to be formed under the project). Many programs, including PAF, have assisted the poor through provision of productive assets such as livestock. However, a gap remains in the provision of technical support services (on production, health and husbandry, access to market, etc.) that will help sustain and grow incomes from these assets over the long run. Learning from this experience, AFSP will help to fill this gap by strengthening

technical/support service delivery and outreach. It is expected that beneficiaries of other projects in the AFSP project areas would also be able to benefit from the technical services system being built up by AFSP.

27. Similarly, AFSP will extend the work on seed production support offered to NARC under the SSNP. Beyond enhancing NARC capacity for seed production, AFSP interventions will focus on dissemination of these seeds, and their associated practices, to farmers in the project areas. AFSP interventions will also be aligned, as appropriate, with interventions under the USAID's *Feed the Future* Program.

28. AFSP will also be complemented by the AHIF (Avian and Human Influenza Facility)-financed *Zoonoses Control Project (ZCP)*, which would build capacity for animal health services delivery targeting zoonotic and infectious disease prevention and control. Further, in the area of maternal and child health, the Ministry of Health and Population (MoHP) (through Bank-led Health sector SWAp) has agreed to provide the project IFA and MNPs (through non-project resources), which the project will use in its component 3 activities.

29. Finally, there is an IFAD funded High Value Agriculture Project (HVAP) and ADB funded High Mountain Agribusiness and Livelihood Improvement (HIMALI) projects operating in the region. HVAP aims at making available improved seeds and livestock breeds while HIMALI will work on selected value chain commodities. The AFSP design is well aware of these ongoing operations in the proposed project districts and possible collaborations and complementarities at the implementation level will be coordinated as they are being implemented by the MoAD.

#### IV. IMPLEMENTATION

##### A. Institutional and Implementation Arrangements

30. *Project Management.* The project will be implemented over a period of five years. The project administration and implementation arrangements build on relevant existing institutions and capacities, and reflect the technical characteristics as well geographic location of the project's activities. The MoAD will be the executing ministry and will work closely with the MoHP to implement the project. Day-to-day project administration and management will be carried out by a central Project Management Unit (PMU) based in Kathmandu. The PMU to be formed under MoAD will be supported by two Regional Project Support Units (RPSUs) in Surkhet in the Mid-Western region and Dipayal in the Far-Western region and a District Project Support Unit (DPSU) in each of the 19 project districts.

31. *Implementation.* The approach of the project is to involve the farmer and the local community in planning, implementing, and evaluation of project interventions so as to improve the design and relevance of activities, enhance adoption of new technologies and practices, and increase the sustainability of project outcomes. Farmer and community activities will be technically guided and backstopped primarily by two sources: (i) relevant research institutes (NARC) and line departments of GoN (DoA, DLS, DFTQC and DoHS) involved in this project ("the implementing agencies"); and (ii) PMU will engage TA service providers at the central

level. The TA service provider will select local NGO/service provider/partner and later will deploy local community facilitators for social mobilization, community preparedness and capacity building. The technical staff hired for the project activity through TA service providers and attached with DPSU will assist the implementing agencies (DoA, DLS, DoHS) by working with FGs through the entire project activity cycle. In addition, technical specialists, service providers, Civil Society Organizations (CSOs) and other stakeholders may be contracted by the project to serve in specific roles and contexts.

32. *Beneficiary Groups and Project grant support.* The project will be primarily implemented through purposive beneficiary groups, organized in accordance with the nature and purpose of the intervention under each of the project components. The PIP will describe in detail how each intervention will be organized. The PIP will specify (socio-economic characteristics, technical considerations) the criteria as well as the processes (needs assessment, participatory community targeting/identification) by which potential members of a group will be identified. Once mobilized and trained, each group will typically receive some form of input support to undertake the intended activity. The PIP will also contain norms regarding the contribution as well as other roles and responsibilities (e.g., farmer to farmer extension) that the group members will agree to as part of the groups' selection and formation process. The inputs will be managed by the group members. Use of inputs as well as the resulting outputs (performance) of the group will be monitored, on behalf of the project, by the local community facilitator as well as staff from relevant technical departments who will be backstopping the specific interventions. It is recognized that the provision of input grants creates some pressures for rent-seeking and outside interference. The section on design risk in the ORAF (Annex IV) discusses the relevant issues and mitigation measures in this regard.

33. *Governance, Oversight and Coordination.* There will be a Project Steering Committee (PSC) chaired by the Secretary, MoAD. The PSC will consist of Joint Secretaries of MoAD, NPC, MoF, MoFALD, MoHP, Director Generals of DoA, DLS, DFTQC, ED of NARC, one representative each from the civil society (NGO federation and National Peasants Coalition). The PD of AFSP will be Member Secretary of the PSC. The PSC will meet quarterly and will approve the project's annual work plan and budget, monitor AFSP progress, provide oversight and policy guidance, and resolve any outstanding issues. A primary focus of the PSC will be to facilitate inter-agency cooperation to ensure achievement of the project's development objectives. In addition, there will be a Project Technical Coordination Committee (PTCC) chaired by the Joint Secretary MoAD. The PTCC will consist of the program directors and/or chief of technical sections/ commodity programs (DoA, DLS, NARC, DFTQC, DoHS), PD, TA team members (as invitees). PMU will be the secretariat for the PTCC. There will be two Regional Project Coordination Committees (RPCCs), one in each of the two project regions. At the lowest level, District Agriculture Development Committee (DADC) will be the coordination structure at the district level.

## **B. Results Monitoring and Evaluation**

34. *M&E Arrangements.* PDO level and intermediate results indicators will be monitored and evaluated through the following methods and tools: (a) Monitoring and Evaluation (M&E) strategy specifying priorities, information requirements, and tools and methodologies for data collection, analysis and reporting; (b) comprehensive M&E plan with clear roles and

responsibilities as they relate to indicators tracking with respect to data gathering and reporting; (c) Project Management Information System (PMIS) which will be a computerized information system that caters to the project level information needs; (d) Internal and External periodic assessment and evaluations which would include village baseline surveys, baseline studies, impact evaluations, mid-term evaluation, and end-of-project evaluation; and (e) Participatory Community Monitoring and Accountability approaches. The PMU will have the overall responsibility for the M&E function although its implementation will take place mainly at the Beneficiary/Farmer Group & Community levels.

35. *Baseline and Data Collection.* The project will have a well-defined strategy for collection of baseline data. As part of the detailed preparation work, considerable information has already been gathered about baseline conditions in the project area, including through a specially commissioned study. This will be augmented through further baseline work in the early phase of implementation. As part of the start up of project activities in any location, baseline information on a core set of indicators will be gathered. Data collection responsibility will vary with the type of data being gathered. Most of the data required for project supervision, and mid-course corrections if necessary, will, by its nature, arise – and hence be collectible – in the course of project implementation (e.g., adoption rate) through the PMIS system.

36. *Impact Evaluation.* This will be done by a dedicated team fielded by the Development Impact Evaluation Initiative (DIME). Therefore impact assessment data, relating to project outputs and outcomes (and their implicit comparisons with non-project, “control” sites) will be done through a third-party, ensuring due quality reliability as well as comparability of data.

### **C. Sustainability**

37. *GoN interest and commitment.* There is strong GoN commitment to this project. GoN is co-contributing about 20 percent of total project costs. Agriculture and nutrition are very high on the development agenda of GoN, with increased budgetary allocations towards this sector. Projects and activities by development partners, including work on the long-term Agriculture Development Strategy, will also reinforce the current development focus on agriculture and food security issues, which this project addresses.

38. *Sustainability of project outcomes is highly likely.* Sustainability is a core project principle and has been factored into project design through the following design features and/or expected measures:

- Institutional sustainability: At the ground level, project activities will be implemented primarily through BGs/FGs. The following steps have been planned to ensure that the key activities will continue to be performed by relevant groups in the post-implementation stage: (i) FGs to be supported under the project will be selected on the basis of clear eligibility criteria, which include willingness/capacity of the community and their understanding of the economic viability of the demonstrated model; (ii) lead farmers or local service providers will be identified within the BG/FG, and will be trained to provide basic technical support/ extension services to people in nearby communities even after the project; and (iii) the project will help in identifying and linking innovative service

providers and commercial operators with BGs/FGs formed under the project, in order to enhance their economic sustainability.

- **Financial Sustainability:** No significant issue regarding financial sustainability arises since the project interventions (demonstrations, training and capacity building) are not recurring cost items. Once the farmers have been trained, these costs need not be incurred again.
- **Technical Sustainability:** The project will undertake the following activities to enhance technical sustainability: (i) technical training provided to FGs with respect to crop and livestock activities; (ii) technologies demonstrated to FGs will be relatively simple, and will not necessarily generate a post-project demand for technical back-stopping; and (iii) technology dissemination at the ground level will be done by farmer-led mechanisms rather than external service providers
- **Social and Environmental Sustainability:** Socially, the project will target the marginal and poor farmers, thus avoiding elite capture and maintaining broad support for the project at the ground level. Safeguard action plans will reduce tension and help manage any potentially negative social and environmental impacts. The M&E system will track social development indicators.
- **Monitoring and Evaluation:** A strong monitoring system will assist in monitoring and assessing the sustainability of investments made under the project.

## V. KEY RISKS AND MITIGATION MEASURES

### A. Risk Ratings Summary

**Table 4: Risk Rating Summary Chart**

<b>Stakeholder Risk</b>	<b>Rating</b>
<b>Implementing Agency Risk</b>	
- Capacity	Substantial
- Governance	Moderate
<b>Project Risk</b>	
- Design	Substantial
- Social and Environmental	Moderate
- Program and Donor	Low
- Delivery Monitoring and Sustainability	Moderate
- Other (Optional)	
- Other (Optional)	
<b>Overall Implementation Risk</b>	Substantial

### B. Overall Risk Rating Explanation

39. Project preparation involves risks that can, on the whole, be mitigated through strategic planning and allocation of resources to critical tasks. On the other hand, during the implementation phase the project by its very nature – considering the focus on food insecure



communities with marginal livelihoods in remote locations, and the fact the existing institutions and capacities are limited and stretched in these areas – involves risks that will remain substantial even after mitigation measures. Also, for some parts of the third component of this project, strong coordination between MoAD and MoHP will be essential for the smooth implementation.

## VI. APPRAISAL SUMMARY

### A. Economic and Financial Analyses:

*NPV= US\$ 19.1 million; FRR=19.4%*

*NPV=US\$ 17.9 million; ERR=20.4%*

40. *Benefits.* Cost-benefit analysis has quantified project benefits from the following sources: (i) increase in the productivity of major crops (paddy, maize, potato, and wheat) by about 19 to 22 percent in 37,000 small farms; (ii) increase in animal productivity by about 25 to 60 percent for meat, milk and eggs in 35,000 small farms; (iii) homestead production of vegetables by 20,000 small farms; and (iv) enhanced income for poor HHs through livelihood development by producer business groups. Cost effectiveness analysis assessed the project-led initiatives for nutrition security to 34,535 pregnant/nursing women and 31,500 children under 2 years of age. The quantifiable benefits are generated primarily through improved, tested and readily available agricultural technologies/practices that will be intensively propagated through a network of 5,700 demonstrations, linked to adoption groups, in the project villages.

41. The project beneficiary profile includes women farmers and pregnant/nursing mothers (over 75%), landless households (2%), small farm holders (30% very small land holders, less than 0.5 ha and 40% small holders, 0.5 to 1 ha) and children (less than 2-years of age). The analysis conservatively estimates project-generated benefits in at least two respects: (i) for benefit calculation, it is assumed that only 60 to 75% of all the crop and livestock farmers directly impacted by the project – through demonstrations and adoption support – will sustainably increase their productivity; and (ii) benefits accruing to farmers outside project sites are limited to small fraction of the diffusion and seed impacts from potentially a larger adoption domain. The increase in the annual certified seed production of quality seed by about 1200 MT is estimated, for instance, will help meet the need for quality seed replacement of a large number of farmers in the project and neighboring villages, than what is conservatively captured.

42. *Returns.* Project investments (including apportioned management costs), accounting for 80% of the total project costs, for the effective transfer, adoption and diffusion of location specific potential on-farm technologies covering agriculture crops and livestock has generated ERR of 20.4%, with a NPV of US\$ 17.9 M. The FRR for the project investments to improve the food availability at HH level is estimated at 19.4%. Annual incremental financial benefits (undiscounted) are projected at US\$ 12.1 M, contributed by crop management (47%), livestock management (52%), and homestead production (1%). Sensitivity of project returns to cost escalation (20%), drop in agricultural productivity, livestock productivity or crop technology adoption levels (20% each) and delay in project implementation was tested. The ERR respectively came down to 17.0%, 16.3%, 18.0%, 19.0%, and 16.8%. Cost-effectiveness of the proposed nutrition enhancement interventions accounting for the remaining 20% of the project costs underlined the positive impacts benefitting 216,000 pregnant/nursing women and children

(including the children ever born) at a cost of US\$30 per beneficiary as compared to the cost of treating the moderate (US\$40 to US\$80 per child) to severe acute malnutrition at a cost of US\$200 per episode per child later.

43. *Income and Employment Impacts.* Annual incremental financial farm income is US\$75 per farm for crop farmers. For diversified farms, annual incremental financial farm income varied from US\$304 (crops and livestock) to 449 (crops, livestock and poultry) per farm. Major projected farming systems in the project area, based on current evidence, are crops only (7%), crops and livestock (43%), and crops, livestock and poultry (48%). Only 2% of the farmers are without lands, practicing livestock and poultry farming. Weighted by these shares, average annual financial income gains for the average project beneficiary HH is estimated at US\$374 at full development.

44. Annually 270,000 man days of on-farm employment equivalent to 900 additional farm jobs will be generated. This will provide at least 225 man days of farm employment annually for each of the 1200 landless labor HH in the project area to generate US\$419 as annual farm wage income per HH.

#### **B. Technical:**

45. The project is designed to support several dimensions of investment in agriculture and rural institutions and services across crops, livestock, livelihoods, and also nutrition sub-sectors to enhance food and nutrition security of farm households in areas especially prone to food security stresses. It identifies five critical things that need to be done to overcome the interlocking constraints to agricultural development of the targeted areas: (i) induce the research system to adapt relevant technologies and practices for use by the areas' farmers; (ii) align extension efforts to support the dissemination of these technologies; (iii) ensure adequate supply of quality seed and improved breed stock at small farmers' level so adoption by farmers can proceed unimpeded; (iv) support investments in household as well as community capacities and productive assets that enhance efficiency; and (v) promote diversified diets and improved feeding and caring practices for pregnant and nursing women, and children between 6-24 months of age. The design of interventions is in line with approach proposed by GoN in its grant application to GAFSP.

46. The project relies heavily on community involvement, through a variety of FGs, for implementation, building on the growing experience with community-driven implementation in Nepal and in Bank projects. A salient feature of the project is the emphasis on adoption: farmer group structure, technical guidance from extension agencies as well as in-kind project support are all designed to help not just "demonstration farmers" but subsequent cohorts of "adoption farmers" to take advantage of the disseminated technologies. More generally the project promotes climate adaptive technologies and practices by forging close research-extension-farmer linkages. This could provide a relevant model for GoN to address similar challenges with enhancing agricultural productivity in other parts of the country, while improving food security and nutritional outcomes in Nepal.

### **C. Financial Management:**

47. The PMU under the MoAD will coordinate the implementation of Component 1 (Technology Development and Adaptation), Component 2 (Technology Dissemination and Adoption), certain sub-components of Component 3, and Component 4 (Project Management); the MoHP will coordinate a specific set of activities under Component 3 (Food and Nutritional Status Enhancement). The PMU will sign the Memorandum of Understanding (MoU) with the NARC, an autonomous body under the MoAD, for the implementation of Component 1, following the example of other operations where NARC is involved. The PSC chaired by the Secretary of MoAD will provide an oversight to the implementation of the Project. It has been agreed with MoAD and MoHP officials that, in line with MoAD being the (sole) implementing agency for the project, there will be only one budget head. All the project finances will go to MoAD, and MoAD in turn will provide the requisite amount for implementation of the nutrition component to the MoHP. MoAD and MoHP will reach an agreement on the standard operating procedure. MoHP will nominate a technical coordinator and a finance officer to coordinate with PMU on all relevant interventions undertaken through MoHP. The PMU of the MoAD will be accountable to prepare trimester Implementation Progress Reports (IPRs) which also comprise of the Financial Monitoring Reports (FMRs); all agencies including NARC and MoHP will provide information to the PMU for integrated reports. The PMU will include all major procurement (e.g., vehicles, motorbikes, office equipment/ computers, etc.) in their procurement plan including those that are intended for NARC, and the procurement will be initiated at PMU. NARC will include in their procurement plan only those items that will be procured by them. The Project Implementation Plan (PIP) together with relevant Operational Guidelines (including the Small Grants Operational Guidelines to cover community-level financial management aspects) will be prepared and a separate simplified version of Operational Guidelines will be prepared in Nepali. A provision for a Financial Management Consultant will be made in the procurement plan of the PMU to support the finance team of the PMU during implementation to ensure adequate focus on financial accountability aspects of the Project.

### **D. Procurement:**

48. Procurement for the proposed operation will be carried out in accordance with the World Bank's "Guidelines: Procurement of Goods, Works and Non-consulting Services under IBRD Loans and IDA Credits and Grants by World Bank Borrowers" published by the World Bank in January 2011 ("Procurement Guidelines"), in the case of goods, works and non-consulting services; and "Guidelines: Selection and Employment of Consultants under IBRD Loans and IDA Credits and Grants by World Bank Borrowers" published by the World Bank in January 2011 ("Consultant Guidelines") in the case of consultants' services, and the provisions stipulated in the Legal Agreement. However, in the Nepali context, procurement may be carried out in accordance with country system adopting National Competitive Bidding (NCB) with additional IDA prescribed caveats and for contracts below the threshold as specified in the Legal Agreement. However, for International Competitive Bidding (ICB) and selection of consultants, the project will fully comply with IDA guidelines. The project has also proposed guidelines for community procurement in the Small Grants Operational Guidelines to enable procurement by FGs/BGs. Details of procurement arrangements are provided as part of project implementation arrangements elaborated in Annex III of the Project Appraisal Document (PAD).

## **E. Social (including Safeguards)**

49. *Social Assessment (SA)*: A comprehensive social assessment (SA) for the project was carried out followed by stakeholder consultations and validation workshops. The SA provides information regarding socio-economic, cultural and demographic aspects of the project area, describes the agricultural and nutritional needs of the community, presents a stakeholder analysis, and analyzes existing power relations, inequality and exclusion risks for *Dalits* (marginalized communities) and *Janajatis* (indigenous people), the presence and role of CSOs/CBOs in the project areas.

50. Accordingly, the design of the project ensures community participation for social development outcomes with emphasis on inclusion, empowerment, equity, participation, and accountability. More specifically, the project is expected to benefit the communities, including vulnerable groups, through community mobilization and extension support, vulnerability reduction strategies, support to Producer/Enterprise Groups through technical assistance on business development to marketing extension, skills training to enhance employability and returns to labor.

51. In addition, the project is also expected to contribute to enhancing nutrition security amongst pregnant and nursing women, and children up to 2 years of age. This will be achieved through improvements in the household availability of diverse food, improvements in micronutrient intakes especially amongst adolescent girls and future mothers and children up to 2 years of age, promotion of “women-friendly” household investments and practices, and institutional strengthening and capacity building of health sector functionaries at the district level.

52. *Social Safeguards*: Notwithstanding the aforementioned project benefits, the implementation of specific project investments could lead to some adverse social impacts including loss of land or structures, loss of access to areas for livelihood support, elite capture, and exclusion of vulnerable communities from project benefits, among others. To minimize and mitigate these possible effects, OP 4.12 and OP 4.10 have been triggered in the project.

53. Even though involuntary resettlement is not envisaged under the project, OP 4.12 has been triggered as a precautionary measure. More specifically, in the implementation of market development strategies and construction/rehabilitation of small rural infrastructure such as collection centers, storage facilities, cold stores, chilling center, etc., acquisition of additional land may be required. In these instances, either public land will be used or will be made available through voluntary donation provided that the impact on the donor household would not be more than 10 percent of the productive assets and that the remaining assets are economically viable to ensure livelihood and shelter.

54. The social assessment carried out for the project indicates that vulnerable communities – particularly Dalits, Janajatis, women, marginal farmers and landless households in the project area – face considerably more constraints. These communities also tend to be more resource poor, food insecure, socially excluded and lack access to public services than others around them. As a result, OP 4.10 has been triggered to ensure that the project activities are culturally

appropriate to vulnerable groups, including provisions for the Indigenous People (IPs) affected to provide free, prior and informed consent to project activities.

55. *Social Management Framework:* The Social Management Framework (SMF) prepared for the project acknowledges the issues identified in the social assessment and integrates the measures for addressing them during project implementation. However, given the nature of interventions, the scale of adverse impact is likely to be minimal. The SMF includes social screening guidelines for land acquisition and donation, a vulnerable community development strategy, gender development strategy, consultation and information disclosure mechanism, monitoring, institutional arrangement for implementing SMF, funding mechanism, and a procedure for capacity building.

56. The AFSP does not foresee any land acquisition, displacement of people, or any activities that would generate land dispute. In cases where additional land is required for activities such as the construction and rehabilitation of small-scale rural infrastructure, land will either be made available by the VDC, or will be donated by community members with a clear MoU between individual, or community donating land and the AFSP project authority. In addition, the District Project Support Unit (DPSU) will monitor the transaction to ensure that such donation is voluntary. Even in the case of voluntary donation, the project will ensure that the impact on donor household would be marginal limiting up to 10 percent of the productive assets and that the remaining assets are economically viable to ensure livelihood and shelter.

57. Similarly, while the project has an in-built design to benefit local communities including vulnerable groups, the SMF includes a Vulnerable Community Development Framework (VCDF) that is in compliance with government's regulations/guidelines, Bank's Operational Policy 4.10 on the Indigenous People and the ILO Convention 169. The VCDF offers specific guidelines to overcome social, capacity and resource constraints, and ensure equal benefit distribution to vulnerable groups, including Dalits and Janajatis, small and marginal farmers, and landless households in the project area. However, it is expected that if any activity under AFSP is to be located in an indigenous people dominated area, an Indigenous People Development Plan (IPDP) will be prepared irrespective of the type of impact.

58. Finally the SMF also includes gender specific measures to identify gender issues in the project, identify options to maximize benefits and minimize adverse effects of project interventions, and to ensure the participation of women in all phases of project cycle. The Gender Development Plan includes specific measures to address women's workload especially in the context of out-migration of male members of the household, enhancing skills and capabilities and improving gender sensitization.

59. *Social Accountability:* In order to promote social accountability at the local level, the M&E framework developed for the project includes a system for 'Participatory Community Monitoring and Accountability.' The project will attempt to ensure that all stakeholders will be able to take part in the monitoring of project processes according to defined roles and responsibilities, and project implementation processes are executed in a satisfactory manner and those benefits are sustainable. Further, while the PMU will have the overall responsibility for the

M&E function, implementation of the M&E function is expected to take place mainly at the FG and community levels.

#### **F. Environment (including Safeguards)**

60. *Environmental Management Framework.* The project will be implemented in 19 hill and mountain districts of the Mid- and Far-Western development regions of Nepal. Precise locations of the subproject/activities to be supported under the project are not-known at the time of preparation. Therefore, borrower has prepared an Environmental Management Framework (EMF) in July 2012 (draft Final). The EMF is consistent with the Government's and Bank's environmental requirements and it will be applied to mainstream, screen and assess, and manage environmental aspects during planning, selection and implementation of subprojects/activities. The EMF team has carried out interactions and consultations at field, district and national levels.

61. *Environmental Concerns.* Environmental concerns of the project are related mainly to subprojects and activities for improving the crops and livestock productions and productivity, and the small scale demand-driven infrastructure such as micro-irrigation channel, treadle pump, rain water harvesting/conservation pond, rural marketing hall, etc. The assessment done during preparation of the EMF suggests that most of the subprojects and activities envisioned under the project will have minimal adverse environmental impacts; a few could have moderate environmental impact. The potential adverse environmental impacts, depending on the subproject location and activity type, may include: increased incidence of landslides/erosion in the hills/mountains; increased pressure on forest (to feed increased livestock population and NTFP harvesting promotion); aggravation of soil degradation due to high rate of removal of plant nutrients; risks of increase in pesticides use due to intensification of farming; and localized pollution of water bodies. Positive environmental impacts are also expected from promotion of sustainable land management (decreasing pressure on marginal lands), improved water management, reducing number of unproductive cattle and stall feeding, and promoting the use of efficient options for meat and milk production through poultry and goats will reduce pressure on water and land resources, forests, and improved awareness regarding health and hygiene and availability of improved diet at household level is expected to improve the nutritional and health status of people. The potential adverse impacts described above are small in scale, limited to the subproject locality/surroundings, and can be avoided and/or mitigated through known and readily available or easily designed mitigation measures. Hence the overall project is categorized as Category B, but many of the subproject/activity would be Category C.

62. *Environmental Management.* The draft final EMF requires that subproject and activity be subjected to environmental screening and necessary level of assessment before implementation and monitoring during implementation. It provides general guidelines for the screening and assessment, subproject EMP preparation, and for consultations as well as environmental codes of practice and institutional arrangement for implementing the EMF (Annex 3 provides further details).

63. Environmental management capacity of directly involved institutions from centre to district is relatively weak, and need to be supported. The EMF contains environmental capacity strengthening measures and provides further details.

## G. Other Safeguards Policies Triggered

**Table 5: Safeguards Policies by Project**

<b>Safeguard Policies Triggered by the Project</b>	Yes	No
<a href="#">Environmental Assessment (OP/BP 4.01)</a>	[X]	[ ]
Natural Habitats ( <a href="#">OP/BP 4.04</a> )	[X]	[ ]
Pest Management ( <a href="#">OP 4.09</a> )	[X]	[ ]
Indigenous Peoples ( <a href="#">OP/BP 4.10</a> )	[X]	[ ]
Physical Cultural Resources ( <a href="#">OP/BP 4.11</a> )	[ ]	[X]
Involuntary Resettlement ( <a href="#">OP/BP 4.12</a> )	[X]	[ ]
Forests ( <a href="#">OP/BP 4.36</a> )	[X]	[ ]
Safety of Dams ( <a href="#">OP/BP 4.37</a> )	[ ]	[X]
Projects on International Waterways ( <a href="#">OP/BP 7.50</a> )	[X]	[ ]
Projects in Disputed Areas ( <a href="#">OP/BP 7.60</a> )	[ ]	[X]

Note: Environmental Assessment (OP/BP 4.1 is triggered because the subprojects/ activities, although small in scale, may have adverse impacts on natural environment, human health and safety. Although subproject/activities are unlikely to be implemented in the protected area, NH OP/BP 4.04 is triggered as precautionary step because there are protected areas/known natural habitats in project districts/regions. Forest OP/BP 4.36 is triggered because pressure on forests is likely to increase due to livestock promotion, and some micro-infrastructure may be located in the forest areas. Project will not support purchase of chemical pesticides, but Pest Management (OP 4.09) is triggered as precautionary step because activities aimed at increasing agriculture productivity could induce use of (or increase existing use of) pesticide. The subproject/ activity EA process and EMP would address any issue related to natural habitat, forest as well as pesticide.

64. OP 7.50 International Waterways is triggered by the project due to the fact that subprojects may involve waterways that drain into India. The possible impacts on water quality and quantity going to neighboring riparian's would be minor and insignificant and therefore exception to notification 7(a) has been granted by the Regional Vice President. The Environmental Management Framework monitoring and evaluation system will identify and reject or manage interventions that could significantly negatively impact downstream effects in India.

## ANNEX 1: Results Framework

### Agriculture and Food Security Project

Indicators	Core Sector Indicator	Core GAFSP Indicator	Unit	Base-line	Cumulative Target Value					Data Collection		
					PY1	PY2	PY3	PY4	PY5	Freq.	Data source	Responsibility
<b>Project Development Objective – Outcomes:</b>												
1. Improved technologies (crop and livestock) released for project area farmers	<input checked="" type="checkbox"/>	<input type="checkbox"/>	No.	0	2	11	25	29	29	Annual	Annual Report	Internal/ External
2. Increased productivity of • Crops <sup>5</sup> • Livestock <sup>6</sup>	<input type="checkbox"/>	<input type="checkbox"/>	% over BL	BL7			15%		30%	Mid-, End-Project	Survey	Internal/ External
				BL 8			50%		75%			
3. Farmers (women farmers) <sup>9</sup> with increased productivity in • Crops • Livestock	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	No.	0			18000		40000	Mid-, End-Project	Survey	Internal/ External
				(0)			(9000)		(20000)			
4. Improved dietary intake for • Pregnant and nursing women <sup>10</sup> • Children between 6-24 months <sup>11</sup>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	% over BL	BL12			BL+5%		BL + 15%	Mid-, End-Project	Survey	Internal/ External
				% of children	BL			BL+15 %				

<sup>5</sup>30% productivity increase targeted for each of four major crops in the project area. (Note that economic returns analysis uses estimated gain in with- and without-project scenarios in the final project year, rather than increases over the baseline. For estimated WOP and WP productivity values by major crops, see Annex on EFA).

<sup>6</sup>75% productivity increase targeted for each of three livestock products: meat from goats, eggs from poultry, and milk from cow/buffalo. (For WOP and WP productivity values by major livestock categories, see Annex on EFA.)

<sup>7</sup>Baseline values: paddy = 2.6 tons/ha; wheat =1.9 tons/ha; maize = 2.2 tons/ha; and potato =12.9 tons/ha

<sup>8</sup>Baseline values: goat = 20 kg per goat (of 12 months); hen = 55eggs per year; milk = 720 litres per lactation (weighted average of 60% buffalo yield and 40% cow yield)

<sup>9</sup>Target values are given for both total number of farmers, and number of women farmers. The latter are indicated in parenthesis after the total number.

<sup>10</sup>Measured as percentage of women increased frequency of consumption of animal proteins (at least one food group out of milk, meat, eggs) and/or micronutrient rich vegetables and fruits (at least one food group out of green leafy vegetables and yellow/orange fruits/vegetables).

<sup>11</sup>Measured by percent of children fed using three IYCF practices defined by WHO.



<b>Intermediate Results</b>												
<b>Component One: Technology Development and Adaptation</b>												
5. Field Trials of Improved Technologies	<input checked="" type="checkbox"/>	<input type="checkbox"/>	No.	0	200	1200	2750	3750	4000	Annual	Annual Report	Internal/ External
6. Source Seed Production <sup>13</sup>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	MT	0	50	150	375	540	540	Annual	Annual Report	Internal/ External
<b>Component Two: Technology Dissemination and Adoption</b>												
7. Producer Groups supported in • Crops • Livestock • Homestead Production <sup>14</sup>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	No.							Annual	Annual Report	Internal/ External
				0	100	500	1250	1900	2000			
				0	25	225	900	1300	1300			
				0	0	400	1000	1400	1450			
8. Seed Replacement Rate <sup>15</sup>	<input type="checkbox"/>	<input type="checkbox"/>	%	6			10		16	Mid-, End-Project	Survey	Internal/ External
<b>Component Three: Food and Nutrition Security Enhancement</b>												
9. Women's groups trained in preparation of nutritious foods	<input type="checkbox"/>	<input type="checkbox"/>	No.	0	0	800	1600	1700	1700	Annual	Annual Report	Internal/ External
10. Households with Pregnant and Nursing Mothers receiving project-supported BCC	<input type="checkbox"/>	<input type="checkbox"/>	No.	0	0	15000	30000	45000	45000	Annual	Annual Report	Internal/ External

<sup>12</sup> Will be estimated during the project BL survey.

<sup>13</sup> Includes both breeder seeds and foundation seeds covering cereal, pulse, oilseed and vegetable crops.

<sup>14</sup> Kitchen gardens and/or backyard poultry, mainly by members of women's groups organized under Component 3.

<sup>15</sup> Seed replacement rate for each of the four major crops (paddy, maize, wheat, and potato).

## **ANNEX II: Detailed Project Description Agriculture and Food Security Project**

1. A description of the project area, project target groups, selection criteria, key results indicators and overall design has already been provided in the main section of the PAD.
2. The key principles underlying the project design are:
  - Active farmer participation in planning, implementing, and evaluating project interventions will enhance the relevance of varieties selected for cultivation, increase adoption of new technologies and practices, and contribute to sustainability of both technical interventions and the local institutions supporting farmers.
  - The selection of project sites as well as beneficiaries should adhere to transparent, third-party verifiable criteria and an open and objective selection process.
  - Project interventions should meet high standards of technical quality as well as social, environmental and fiduciary considerations.
  - Investment in group and community level institutions, capacities and productive assets provides a strong and sustainable basis for livelihoods enhancement by allowing beneficiaries to collectively learn more, achieve scale or better transactions terms, and organize more effectively to benefit from public services.
3. The project will have four components: (i) Technology Development and Adaptation; (ii) Technology Dissemination and Adoption; (iii) Food and Nutritional Status Enhancement; and (iv) Project Management.

### **Component 1: Technology Development and Adaptation (Base Cost US\$7.739 M)**

#### **Description**

4. *Relation to PDO.* This component will support the PDO by making available to project area farmers appropriate technologies, resources (seeds and breeds) and improved agronomic and husbandry practices that will contribute to increased productivity of crops and livestock. Priority will be given to technologies and innovations that have ability to produce tangible results in a short span of time.
5. *Rationale.* It is imperative to raise the productivity of agricultural and livestock operations in the project target areas in order to make agriculture-based livelihoods more economically viable and to enhance food security. Currently, average yields of major crops in the project area are about 25 percent less than the Nepal average, which itself is low by South Asian standards. Overall food production in the project districts is generally enough to meet only about six months' demand, making the region dependent on external/emergency food supply (the World Food Program provided over 25 thousand metric tonnes of food in 2011 reaching approximately 550,000 beneficiaries in these regions). At least three things need to be done to enhance long-term agricultural productivity in the area. First, enhance the availability of good quality seed and improved livestock at the farmer level. In the case of crops, for example, it is estimated that this alone can lead to yield increases of 15-20 percent in case of cereals, at least 20

percent in potato, 40-50 percent in oilseeds, and over 100 percent for maize and can lead to a doubling of production potential for meat, milk and eggs. Second, improved agronomic (soil, water and plant management) and husbandry (fodder, health and care) practices that conserve and use local resources better and exploit specific agro-ecological potential need to be developed. Third, an institutional arrangement that can reliably supply over the long term improved seed and breed stock to farmers in the project area needs to be developed so that permanent rather than one-off productivity improvements are put in place. This component pulls together these three critical elements in order to sustainably increase the productive potential of agriculture in the project area over the long term.

6. *Results.* The expected output of this component will be (i) the release of 17 improved crop varieties; (ii) the release of 21 crop and 8 livestock management technology practices; and (iii) the increased availability of over 6,000 improved cross-bred goats and nearly 3,000 improved parental poultry stock. Also, 540 metric tonnes of source seed will be produced by NARC. It is expected that by the end of the project there will be 1,900 direct beneficiaries and over 10,000 indirect beneficiaries. Beyond these, it is expected that this component's investments will enhance the capacity of NARC to develop and maintain a pipeline of relevant technologies and breeds, produce source seeds and interface with the extension system to build up capacity for disseminating these to farmers.

### **Sub-Components and Activities to be Financed**

7. This component has the following sub-components: (i) Crops and (ii) Livestock.

#### **(i) Crops**

8. *Evaluation and release of new varieties.* NARC has identified several promising lines which are potentially suitable to the specific needs of the project area and which are at an advanced stage of development and evaluation. These include potato and barley in the Upper Mountain region; maize, barley, wheat, buckwheat, millet, soybean, and rice in the Lower Mountains; maize, soybean, wheat, mustard, black gram, potato and vegetables in the rain-fed Mid-Hills; and rice, wheat, potato, vegetables, maize and lentil in the irrigated mid-Hills. The component may also include more minor and nutritionally significant crops such as legumes, olive, walnut and other selected food crops. These will be taken up for participatory evaluation and variety selection on NARC research stations as well as farmer fields in the project areas to confirm their adaptability and local acceptance. Attributes to observe will include: tolerance to pests, moisture stress, yield and taste. If the performance in the adaptive and validation trials is found to be better than the existing varieties, then steps will be taken for releasing these varieties for general cultivation in the next season with assistance from Component 2 activities. It is anticipated that at least 8 varieties for major crops (rice, wheat, maize and potato) and 9 varieties for minor crops<sup>16</sup> will be made available to project area farmers (). All the required technical support will be provided through NARC's Regional Research Stations, Disciplinary Divisions undertaking various national Commodity Programs.

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<sup>16</sup> Barley, millet, buckwheat, soyabean, black gram, bean, mustard, lentil and vegetables

9. *Development and refinement of location and problem specific agricultural management practices.* This sub-component entails activities leading to the development of appropriate and efficient farming packages following ICM, IDM and IPM models. With reference to the special agro-economic characteristics and needs of various locations in the project area, trials will be undertaken with respect to crop management, soil management, pest management, conservation agriculture, cropping systems, soil fertility restoration, harvesting and post-harvest loss management, seed treatment, and soil moisture/water harvesting techniques. The objective will be to develop/identify cost-effective practices for resource-poor farmers, which can be promoted under Component 2 to increase productivity, cropping intensity and crop diversification. These technologies will be developed as a package and made available to farmers through agriculture extension service centers, CBOs, NGOs and farmer groups as appropriate. It is expected that at least 21 technological packages will be developed, tested and made available.

10. *Strengthening of source seed production capacity.* With a view to address the shortage of quality seeds, the project will support enhancement of NARC capacity for production of source seeds (breeder and foundation) at NARC's commodity research stations located in various parts of the country. In collaboration with DADO, NARC will also engage with seed producer groups to produce source seeds under the direct supervision of NARC scientists. While technical support for seed production will come from NARC and DADO, grading of seeds into "certified" or "truthful" levels will remain with the Seed Quality Control Centre under the MoAD. The certified source seeds will be subsequently provided to DADOs who, in turn, will distribute to target farmer groups in Component 2 in order to produce a sustained source of "truthful" seeds. *Training and capacity building.* The capacity of line departments will be enhanced by providing training and higher education to select staff, contingent upon their working in the project area. This will involve training for NARC resource persons as well as training given by NARC staff to extension agents, farmers and other relevant players in the project areas on technology transfer and seed production. NARC scientists and technicians will receive training at Bachelor's, Master's and Doctoral level at the Institute of Agriculture and Animal Sciences, IAAS, Nepal using funding from AFSP.. Short term training courses will aim at immediate fulfillment of required skills to provide effective outreach services. Recipients of short term training courses will be staff members of NARC who are working in AFSP districts or directly support the project. As far as possible, short courses will be identified within the institutions located in South Asia and South East Asia. NARC will undertake a training needs assessment to define the type of training courses needed.<sup>17</sup> Additionally, NARC will recruit selected scientists, technical officers and field assistants to support project activities if required. As part of capacity development initiative, NARC laboratories, research stations and other establishments will also be provided with relevant facilities/infrastructure upgrades and equipment.

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<sup>17</sup> Some areas of need identified during project preparation include: (i) seed technology, (ii) vegetables, (iii) potato development, (iv) underutilized crops such as millet, buckwheat, beans, (v) post-harvest techniques, (vi) research management, (vii) laboratory technology and management; (viii) animal breeding; (ix) animal nutrition; and (x) animal health.

**(ii) Livestock**

11. *Improving the Lines of Poultry and Goat Breeds.* In rural poor households, poultry and goat production provides a cushion against the livelihoods' risk and acts as a productive asset to increase the family income. From the food security perspective, higher income from poultry and goat enterprise and prospect of food diversification will build strong coping strategies during the food shortage period. Improvement in the productivity of goats will be achieved through re-introducing germplasm of high performing adapted breeds for upgrading local stock. A breed improvement program will be established to meet the high demand for improved bucks. Eggs will be imported to re-establish dual purpose parental lines of backyard poultry. NARC's farm and specially organized FGs, using imported eggs, semen and bucks, will together build flocks and herds on which relevant breed improvement principles are applied. The following activities will be carried out under this sub-component: (i) establishment of open nucleus breeding scheme for (Boer and Sannan goat) at government farm and in pockets of private herds to create goat breeder herd villages; (ii) establishment of improved dual purpose parental lines of backyard poultry through egg imports for NARC and DLS farms to replace the old stock and for maintenance of a suitable hatching unit; (iii) capacity building of DLS and NARC staff; (iv) procurement of eggs, semen (goats and buffalo), and bucks and breeding equipment.

12. *Development of Improved Management and Health Practices.* There is need to develop and refine management practices relating to rural poultry and goat production in the project areas (research attention in this regard has typically focused on the lowland Terai region and eastern parts of the country, non-project areas). Key activities to be undertaken include (i) development of low cost poultry feed for the high hills; (ii) development of feeding package for goats (supporting stall feeding and benefiting also from silvi-pasture); (iii) development of appropriate silvi-pastoral models for three ecological regions of the Mid- and Far-Western region supporting goats; (iv) optimizing feed supplementation to dairy animals; (v) development of inventory of locally available feed resources, poisonous plants and ethno-veterinary practices in the project area; and (vi) development of community seed banks for forage and pasture germplasm. Health care will be supported with simple diagnostics tools and studies to support disease targeting, particularly for parasitic diseases. Efficacy of a new heat stable vaccine for new-castle disease will be tested and a management strategy for a toxicity related disease (*khari*) affecting buffalo will be developed.

**Component 2: Technology Dissemination and Adoption (Base Cost US\$26.812 M)**

**Description**

13. *Relation to PDO.* This component will support the PDO by enabling farmers in the project area to adopt improved agricultural (including livestock) production technologies and management practices, especially those developed and promoted under Component 1. It will contribute directly to the PDO by enhancing the long-term availability of staple crops, vegetables and animal-based foods in the project area.

14. *Rationale.* The component is designed to address the following set of constraints: restricted availability of improved variety seeds, weak absorption capacity of farmers, limited

farmer capacity to make complementary on-farm investments, and limited outreach of extension departments. The component has three sub-components: (i) *Support for Crop Production*, including; disseminating improved varieties and practices such as for nutrition gardens; local seed production; on-farm investment and water management support, and; post-harvest value addition support; (ii) *Support for Livestock Production*, including; backyard poultry in mountain districts, goat keeping in mid-hill districts, and dairy in selected locations near markets; and (iii) *Institutional Strengthening of Extension and Outreach*, since this component will be the primary point of interaction with the project beneficiaries, attempts will be made to make demonstrations and field days cross-cutting with activities from other components (e.g., promotion of improved technologies from NARC, promotion of diversified diets and improved nutrition and care practices under Component 3) to ensure integration of various project interventions. Items to be financed under this component include group mapping and mobilization, training at different levels, Farmer Field Schools (FFS) and adoption support to farmers and small-scale productive assets. At the ground level, producer groups and para-workers/NGO service providers will be involved, and will be technically backed up by respective line departments. The capacity of the line departments will be enhanced by providing for the training and higher education of select staff, contingent upon their work in the project area.

15. *Results.* This component is expected to lead to increase in crop and livestock production and productivity, as well as increase in local availability of good quality seed. In the case of crops approximately 48,000 HHs will be targeted through FFS and a further 1,900 for seed production groups. As for livestock, direct beneficiaries will include over 43,750 HHs.

### **Sub-Components and Activities to be Financed**

16. *Support for Crop Production.* This sub-component will provide the support necessary to facilitate the adoption of new technologies by farmers and small rural households for crops, including kitchen/household gardens. The support will be provided through farmers groups (FGs)/beneficiary groups (BGs) which will use FFS approach to extension (described in the PIP) where a series of participatory trainings, field days, and demonstrations will be conducted following the annual cropping system in the area. The curriculum in the FFS will be based around the predominant crop in the area (either wheat, maize, rice or potato) and will allow for a second and third crop in the training based on farmers' choice. Options for training in the second and third crops will include traditional staple crops that may play a very important role in the communities' nutritional requirement, and will also be flexible enough to include new crops of nutritional importance. The FGs provide support across the production cycle from crop planning, inputs and productivity enhancement, post harvest and local value addition. Within each FFS, lead farmers or farmer facilitators will be identified and provided extra training to become a local resource person for her/his groups and other groups that are subsequently supported in the neighborhood. An integral part of crop support is the development of community seed production of rice, wheat, maize and potato varieties promoted by NARC under Component 1. Participants in this activity will be selected from existing producer groups and their capacity will be developed using a FFS approach, with a curriculum developed specifically for seed production. As these seed production groups develop and show maturity (according to specific graduation criteria), support will be given in a phased manner to allow them develop their business skills. Established groups will be encouraged to produce more than one commodity and will be encouraged (through facilitation and training) to develop multiple outlets for their seeds

including direct sales to farmers and traders, farmer exchange programs, contracts with government and projects.

17. This sub-component will also facilitate need-based investments by groups of farmers in irrigation/on-farm water management and small scale productive infrastructure. Matching funds and relevant technical support will be provided to farmer groups who satisfy relevant criteria relating to economic potential, co-contribution and specific sustainability considerations. The sub-component will support investments in promotion and strengthening in economic organizations of the small and marginal producers, and where feasible enhancing their access to assets, credit, skills, technology and markets.

18. *Support for Livestock Production.* This sub-component will provide the necessary support for families to take up poultry, goat and dairy cattle/buffalo rearing practices. The project will focus on HH with livestock keeping experience but also provide livestock assets (goats, poultry) to 25 percent of the nearly 43,750 HHs targeted by the livestock development subcomponent. Support will be provided, in demonstration mode, to organized groups of HHs who will receive a batch of high quality vaccinated chicks, improved bucks or semen and bulls (for dairy). The groups will be trained in associated feeding, care and health practices. The groups will also be supported to organize relevant backward and forward linkages, including marketing extension support. Within each group, a lead farmer will also be provided extra training to become a local resource person for her/his groups and other groups that may subsequently be formed in the village/village cluster. Additional extension and management support will be provided as follows: each VDC will be supported by 1 Village Animal Health Worker (VAHW) and additionally 1 junior livestock technician (JT) for every 2 VDCs. The VAHW will be a 2 year - apprenticeship and paid 3000 Rs/month during the project after which they are expected to be established to sell their services. The VAHW and JT will receive technical and extension training to effectively undertake their job.

19. *Institutional Strengthening of Extension and Outreach.* The project will hire the services of local project facilitators at the VDC level. The project facilitators will be responsible for organizing BGs/FGs and coordinating all project interventions at the community level. These BGs will be the entry point for project activities in a village (a village could comprise one or more wards in a VDC). BGs/FGs will be organized in line with agreed criteria and in consultation with implementing agencies: DoA for crops and water management, DLS for livestock and DoHS for nutrition related interventions. Service providers, working under the guidance of relevant implementing agencies, will provide support services to the BGs/FGs. The project facilitators will support the entire activity cycle of the BG/FG, starting from sensitization about the project, community needs assessment, group formation/mobilization, establishing group activity plans, helping with group learning/training/exposure visits, to participatory M&E and establishing post-production links with relevant stakeholders. Technical staff, hired for the duration of the project, will coordinate and backstop activities of project facilitators in their respective project areas. They will work under the guidance of the district level functionaries of relevant implementing agencies (DADO, DLSO, DHO) to ensure smooth planning and implementation of project activities. Finally, lead farmers will be identified and provided extra training to become a local resource person for her/his group and other groups that may be subsequently supported in the neighborhood.

### **Component 3: Food and Nutritional Status Enhancement (Base Cost US\$8.94 M)**

#### **Description**

20. *Relation to PDO.* This component will contribute to enhancing food and nutrition status in project areas through promotion of diversified diets, increasing food availability for targeted households, increased nutrient intakes, improved feeding and caring practices for pregnant and nursing women and children up to 2 years of age. Nutrition status enhancement will be achieved through activities that leverage key entry points in the agriculture sector to improve nutrition, as well as strengthen and support key direct nutrition interventions in project areas. The technical support and critical behavior change communication and nutrition education packages developed and delivered through this component will help translate the enhanced food availability – made possible through increased crop and livestock productivity at the farm level, improved household level food availability through kitchen gardens and backyard poultry/goats, grain banks – into improved nutrition security.

21. *Rationale.* Nepal has very high rates of child under-nutrition with 41 percent of children under five being stunted, 29 percent being underweight and 11 percent wasted. Nutrition status of women and children in the Mid- and Far-Western regions is considerably worse off than the national average for Nepal (stunting rates in children under five are 50 percent and 46 percent in the two respective regions; underweight prevalence is 37 percent and 33 percent respectively; and wasting is about 11 percent)<sup>18</sup>. An estimated 12 to 16 percent of children are born with a low birth weight; about one in five (18.2 percent) women of reproductive age in Nepal has chronic energy deficiency, and anemia is high in women and adolescent girls (future mothers). Chronic under-nutrition, anemia, early age of child bearing, and factors such as excessive physical workloads during pregnancy, indoor air pollution and smoking during pregnancy, poor hygiene practices and frequent infections are some of the factors contributing to low birth weight. Evidence shows that the birth deficit continues to influence nutrition outcomes, not only during childhood but also carrying into adulthood. Thus nutrition of adolescent girls, during pregnancy and in the first two years of a child's life is critical to achieving improvements in child under-nutrition. The economic costs of malnutrition are very high – an estimated 2-3 percent of GDP (US\$250 to US\$375 million) is lost every year in Nepal due to vitamin and mineral deficiencies alone.

22. It is widely accepted that food security is a necessary but not sufficient condition to improve nutrition outcomes at the most immediate level. Rather, under-nutrition is determined by three categories of causal factors, namely *food intake, care for children and women, and environmental health and health services*, with factors such as income poverty, gender inequity, and education underpinning all three. Agriculture influences nutrition in many ways and through diverse and interconnected pathways. Besides being a key driver of poverty reduction, other measures operating through the agriculture sector can target the immediate causes of 'food-care-environmental health'. Appropriate nutrition enhancement interventions are embedded in component 1 and 2, such as kitchen gardens and backyard poultry to improve household availability of nutritious foods. The nutrition component adopts a two-pronged approach to enhance nutrition security in project areas. One prong leverages the key entry points for nutrition

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<sup>18</sup> Nepal Demographic and Health Survey 2011



offered by the agriculture sector, such as through increased productivity, enhanced household availability of nutritious foods through kitchen gardens, backyard poultry, simple home technologies for food preservation and preparation, women's empowerment through nutrition education and Behavior Change Communications (BCC) and adoption of home drudgery-reduction and labor-saving devices. The second prong strengthens ongoing direct nutrition interventions of the health system in project areas, by helping improve their delivery and uptake by project communities.

23. Nepal has developed a Multi-Sectoral Nutrition Plan (MSNP, 2011) detailing the roles of the Ministry of Health and Population, the Ministry of Education, the Ministry of Physical Planning and Works, the MoAD and the Ministry of Federal Affairs and Local Development (MoFALD), under the leadership of the National Planning Commission (NPC). This linking of agriculture-sector activities with nutrition will support the MoAD to contribute to nutrition objectives and actions outlined for it under the GoN's MSNP, 2011. The component also strengthens Agriculture-Health coordination mechanisms at the national, district level, and VDC levels.

24. *Results.* The expected results from this component are improved diets and nutrient intakes for targeted pregnant/nursing women, improved feeding practices of children under 24 months of age, e.g., exclusive breast feeding for six months, timely and appropriate complementary feeding, and increased micronutrient intake. The project will reach about 41,000 pregnant, nursing mothers to improve their own diets as well as feeding practices of about 54,000 children.

### **Sub-Components and Activities to be Financed**

25. *Sub-component 3.1, Enhance food availability for targeted households:* This will comprise two activities: (i) Promotion of grain banks and inter-household food exchanges; and (ii) Home preparation, preservation and processing of nutritious foods at the local level. Promotion of grain banks is intended to strengthen food availability for the targeted households, especially old, infirm, single or female-headed households, destitute and so on. Grain banks will be formed to operate as "enterprises" that help the poor pool their savings (in the form of grains) and loan these stocks to the needy. The project will provide matching fund to enhance the capacity for bulk purchase of food items in open markets to top up the grain banks. Where possible, linkages will also be strengthened with food/cash for work programs for helping the poor to periodically increase their contributions to the grain bank, and thus help strengthen this food safety net for targeted households in remote and isolated locations.

26. Home preparation, preservation and processing of nutritious foods at the local level (geared towards infants, young children, and pregnant/nursing women) to help families consume more nutritious foods and cope over lean periods of food availability. Activities include; identification of locally available high nutritive value foods, dissemination of simple home preservation/processing technologies dissemination, recipe development (especially targeted for pregnant/nursing mothers and children under two), and their promotion through demonstrations and training to mother's groups with a special focus on households with young children and pregnant/nursing women. Trained mother's groups will further train other women of the

community to prepare appropriate complementary foods for young children and for pregnant and lactating women. Accompanying BCC will improve the actual consumption of these foods. The project will finance demonstration inputs, training, food testing and recipe development by DFTQC. It is estimated to reach about 43,000 women.

27. *Subcomponent 3.2: Improve feeding and caring practices:* Through a combination of activities this sub-component will improve feeding and caring practices, especially of pregnant/nursing women and children 6-24 months of age. Key activities under this sub-component include: (i) Nutrition education for FGs; (ii) Behavior Change Communication (BCC); and (iii) Improving women's working conditions.

28. Nutrition education for FGs will be focused on improving farmers' awareness and knowledge regarding issues such as the significance of locally available nutritious foods, basic food and nutrition facts, importance of micronutrients, hygiene, sanitation, and so on. The activity will be implemented through the FFS and is expected to reach about 3300 FGs formed by the project (2000 for crops and 1300 for livestock) and 80,000 households. The project will finance development of training packages and training.

29. Behavior Change Communication (BCC) will target households with pregnant/nursing women and children under two to enhance the use of diverse and nutritious foods, promoting appropriate Infant and Young Child Feeding (IYCF) and caring practices, hygiene and sanitation practices, aspects of food safety, appropriate cooking practices and consumption of micronutrient and protein rich foods. A key focus of the BCC activities will be to promote two evidence-based micronutrient interventions: (i) consumption of iron and folic acid supplements for pregnant and lactating women to improve their iron status and reduce anemia; and (ii) home fortification with Micronutrient Powders (MNPs) and IYCF practices for children 6-24 months of age. MNPs are sachets of multiple micronutrients in appropriate doses for sprinkling on children's food. Iron-folate tablets and MNPs will be provided by the MoHP; the project will finance the BCC related to these interventions, and capacity building of MoHP functionaries to effectively deliver and monitor these services. The BCC will also complement the kitchen garden and backyard poultry/goat activities supported under component 2. BCC activities will be implemented in 16 of the 19 project districts (excluding the 3 project districts where similar activities are covered by the *Suahaara* project).<sup>19</sup> The project will finance development of BCC and nutrition education packages and material, BCC training and radio spots and broadcasts.

30. Improvement in women's working condition through promotion of simple 'labor saving and drudgery reducing' technologies for women will also be undertaken. Women's heavy workloads – or the intense demands on their time – constrain their ability to care adequately for themselves or their children, or get adequate rest during pregnancy. Further, exposure to indoor air pollution, especially smoke from fuel affects their health status and infant's birth weights. Thus, innovative labor saving devices, such as biogas plants, improved cooking stoves, solar dryers to preserve vegetables and fruits will be promoted through mother's groups/women's groups. The project will finance these on a demonstration basis and motivate other women to adopt these for their expanded use.

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<sup>19</sup> Intensive coverage in the six districts (districts of Karnali zone and Jajarkot district) is planned at the request of the MoHP, because of the low nutritional status indicators in these districts.

31. *Subcomponent 3.3: Institutional Strengthening and Capacity Building:* This will involve strengthening DFTQC capacity for food safety and quality control and training for MoAD staff. With respect to DFTQC, the project will finance assessment of the food safety situation in the Mid- and Far- Western regions, recommendations of which are expected to strengthen policy and programs. Also, to strengthen MoAD capacity for improved planning/program design, implementation, and monitoring and evaluation for pro-nutrition agriculture, the project will support development of training curriculum and materials to be used at different levels, such as district-based program managers, supervisors and extension workers.

#### **Component 4: Project Management (Base Cost US\$5.62 M)**

32. *Relation to PDO.* This component will contribute to attainment of the PDO by ensuring that (i) interventions undertaken under the project are properly planned, coordinated and aligned with project design and development objectives; (ii) implementation and institutional arrangements and activities are in line with relevant fiduciary and safeguards policies, procedures and standards; and (iii) there is due monitoring, oversight and reporting of project implementation and the resulting outputs and outcomes.

33. *Activities to be Financed.* The project will finance the establishment and operation of (i) a *Project Management Unit (PMU)* in Kathmandu (ii) two *Regional Project Support Units (RPSUs)*; and (iii) 19 *District Project Support Units (DPSUs)*. The PMU will be headed by a Project Director and will be responsible for (i) overseeing the implementation activities of the project; (ii) coordination of financial, procurement and administrative management; (iii) development and implementation of a Management Information System (MIS) for the project to facilitate performance monitoring of all project activities; (iv) organization of evaluation and impact assessments of the project; (v) acquisition of technical assistance services for timely and efficient utilization of expertise needed for project implementation; (vi) implement capacity building activities; (vii) review and compilation of relevant reports and other materials; (viii) submitting periodic (four-monthly) and annual progress reports to the World Bank and Project Steering Committee, within one month of the due date; (ix) submitting audit reports within six months of the close of fiscal year, and (x) liaising with the World Bank concerning operation and management of the project, as and when required to support implementation of project activities.

### **ANNEX III: Project Institutional and Implementation Arrangements Agriculture and Food Security Project**

1. The project will be implemented over a period of five years. The project administration and implementation arrangements build on existing institutions and build their capacities where required, and reflect the technical characteristics of the interventions as well the geographic location of the project's activities.

2. The MoAD will be the lead implementing ministry and will work jointly with the MoHP to implement the project. Day-to-day project administration and management will be carried out by a central Project Management Unit (PMU) which has been set up under the MoAD based in Kathmandu. It will be supported by two Regional Project Support Units (RPSUs) in Surkhet in the Mid-Western region and Dipayal in the Far-Western region and a District Project Support Unit (DPSU) in each of the 19 project districts.

3. Under MoAD's overall guidance, Component 1 will be implemented by the Nepal Agriculture Research Council (NARC), Component 2 by the DoA and DLS, Component 3 by DoA, DLS, DFTQC and DoHS, and Component 4 by the Project Management Unit (PMU). The PMU under the MoAD will need to work with various departments and agencies to oversee the project's work program, monitor progress, provide oversight and policy guidance, facilitate inter-agency cooperation and resolve any outstanding issues. There are three agencies – DoA, DLS and DFTQC – under the MoAD; NARC is an autonomous research body which also reports to MoAD; and DoHS is under the Ministry of Health and Population. Within the agencies under the MoAD, the chain of command is from the Secretary of MoAD who delegates authority to the departmental heads to execute the program. The Director General of DoHS receives the authority to execute the program through the Secretary of MoHP.

4. PMU will sign a MoU with the NARC to implement Component 1. MoAD and MoHP will reach an understanding of operational modality for Component 3, which will include the fund flow modality from MoAD to MoHP and reporting obligation from MoHP to MoAD on the execution of the program; this will be recorded in the form of exchange of memo or recorded as the minutes of agreement between two ministries. MoHP will execute its program through Child Health Division of DoHS. The MoU between PMU and NARC will highlight the roles and responsibilities of the respective agencies, the results framework against which progress will be monitored, fund flow mechanism, and accountability arrangements. The MoU between PMU and NARC and the operational modality between MoAD and MoHP should be acceptable to IDA. This will be a disbursement condition for implementation of Component 1 and Component 3 respectively.

#### **I. Project Management**

5. Project management arrangements involve nested roles and responsibilities at three levels: (i) a PMU in Kathmandu (ii) two Regional Project Support Units (RPSUs) in Surkhet in the Mid-Western region and Dipayal in the Far-Western region; and (iii) District Project Support Units (DPSUs) in each of the 19 project districts.

*Project Management Unit.* The PMU will be headed by a Gazetted class one level officer, designated as Project Director (PD - Joint Secretary level of the agriculture service) deputed from the MoAD. The PD would be operationally and managerially in-charge of the organization structure established at the central, regional and lower levels and for implementing the project. The PD will have the authority to make decisions related to the project administration as well as financial management. There will be two positions of Gazetted class two level officers (one with crop background and the other with livestock background) designated as Senior Planning Officer and Senior Monitoring and Evaluation Officer. These officers will also be deputed from MoAD for the entire project period (Under Secretary level position of the agriculture service). There will be three Technical Officers (Gazetted class three level officers with crop science, livestock, agri-economics background) to assist in the smooth functioning of the project's management, along with Account Officer, Accountant and Administrative assistant deputed as core staff as per GoN regulation. Computer operators, office secretary, office assistants and drivers will be hired for the project period on service contracts.

6. In addition to PMU team from GoN side, there will be a team of experts providing technical assistance service and will comprise of livelihood and social inclusion specialist, agriculture specialist, livestock specialist, nutrition specialist, environment specialist, M&E specialist, financial management specialist, procurement specialist, and training, communication and knowledge management specialist as national consultants working at PMU. At the district level in all 19 districts, there will be project agriculture officer, project livestock officer and project nutrition officer to assist DADO, DLSO and DHO in the implementation of project for the entire project period. Similarly, at the field level, there will be one technician each for crop, and livestock per two VDCs and they will be supported by the project facilitators (2 per VDC) for organizing and mobilizing farmers' groups at the community level. These implementation support services will be typically for the entire project duration.

7. The PMU will also be responsible for (i) overseeing the implementation activities of the project; (ii) coordination of financial, procurement and administrative management; (iii) development and implementation of a Management Information System (MIS) for the project to facilitate performance monitoring of all project activities; (iv) organization of evaluation and impact assessments of the project; (v) acquisition of technical assistance services for timely and efficient utilization of expertise needed for project implementation; (vi) implement capacity building activities; (vii) review and compilation of relevant reports and other materials; (viii) submitting periodic (four-monthly) and annual progress reports to the World Bank and Project Steering Committee, within one month of the due date; (ix) submitting audit reports within six months of the close of fiscal year, and (x) liaising with the World Bank concerning operation and management of the project, as and when required, to support implementation of project activities.

8. *Regional Project Support Units (RPSUs):* The RPSUs will be headed by either the Regional Director of Agriculture or the Regional Director of Livestock Services, as designated by MoAD. RPSUs will be established and will be supported by a project M&E officer and a technical officer of the directorate will be designated as the counterparts (or nodal officer) for carrying out RPSU functions smoothly. Operating under the overall guidance of the PMU, the

RPSUs will be responsible for: (i) facilitating regional level program planning and implementation of all project activities within their respective Regions, (ii) coordination with relevant implementing line departments and agencies and stakeholders, (iii) organize periodic progress review, (iv) guiding district level implementation offices and DPSUs to work in accordance with the spirit and principles of the project, (v) monitoring and supervising the work being done in the field, (vi) maintaining appropriate records, financial and project progress reporting, and (vii) ensuring due attention to safeguards issues, and (viii) ensuring appropriate governance and accountability, including through management of a suitable grievance redressal system.

9. *District Project Support Units (DPSU)*: In all 19 project districts, there will be a DPSU designated by the MoAD. DPSU's role will be entrusted to either DADO or DLSO. The district level offices of the departments under MoAD namely DADO and DLSO will be primarily responsible for the implementation of project activities under MoAD. Under MoHP, DHOs will be district level implementers. The DPSU will help to coordinate district level project activities with line agencies and other partners. DPSU will also provide technical backstopping for implementation at the field level, as well as follow up progress reporting. There will be additional technical staff (technical officer as well as technicians for the project duration) at the DPSU to support DADO and DLSO in implementation of project activities. The technical staff to be posted at the DPSU will be hired through the TA service provider. However, the chief of DADO and DLSO in the project district will receive program and budget authorization from DoA and DLS under MoAD for implementation. Therefore, core responsibilities associated with project implementation lies with DADO, DLSO and DHO of the respective district. Some of the project interventions envisaged by the project such as the grain banks and food/health grants – will be implemented and facilitated by the DPSU. Furthermore, DPSU will be responsible for (i) mobilizing existing District Agriculture Development Committees (DADC) in coordinating the project activities at the district level, (ii) encourage participation of farmers' organization (peasant coalition, farmer cooperatives), and district NGO federation and other relevant stakeholders at DADC, (iii) facilitating planning and inter-agency coordination, (iv) assisting DADC in selection of project sites and beneficiaries and participatory monitoring (ensuring involvement of different stakeholders such as CSO, media as part of the team), (v) organizing public hearing, media briefing/ media trip and stakeholder monitoring activities, and (vi) ensuring appropriate governance and accountability, including through management of a suitable grievance redressal system. The DPSUs will also coordinate with and support the proposed district level Food and Nutrition Security Committee, as and when it is constituted.

## **II. Project Implementation**

10. The approach of the project is to involve the farmer and the local community centrally in planning, implementing, and evaluation of project interventions so as to improve the design and relevance of activities, enhance adoption of new technologies and practices, and increase the sustainability of project outcomes. Farmer and community activities will be technically guided and backstopped primarily by two sources: (i) relevant research institutes (NARC) and line departments of GoN (DoA, DLS, DFTQC and DoHS) involved in this project; and (ii) PMU will engage TA service providers at central level. The technical staff – agriculture, livestock and nutrition officers (one each in all 19 districts) and agriculture and livestock technicians (one each

for 2 VDCs for all 190 VDCs) – hired for the project activity through TA service provider and attached with DPSU will assist the implementing agencies (DADO, DLSO) by working with FGs through the entire project activity cycle. In addition, technical specialists, service providers, CSOs and other stakeholders may be contracted by the project to serve in specific roles and contexts.

11. *Implementing Agencies:* The following implementing agencies will be involved: Component 1 – primarily by NARC but the farms/stations under DLS will support in maintenance of improved genetic resources; Component 2 – DoA and DLS supported by the service providers; Component 3 – BCC program related to improving intake of micronutrient foods and consumption of diverse foods by the households will be implemented by DoHS under MoHP. Promotion of grain bank, capacity building of agricultural technicians for pro-nutrition actions, recipe development from locally available nutritious food, promotion of nutrition garden/ home garden will be implemented by DoA, DFTQC and DLS in their respective domains and PMU will coordinate in planning and implementation of these activities. The type and number of implementing agencies is determined by the nature of both the project and the institutional mandate and set-up in Nepal. The project is supposed to meet technological and services needs of the poor and disadvantaged farmers living in challenging ecological regions of mid and far-western mountains and hills who are exposed to severe household food and nutrition insecurity. Farmers in this project are being supported across the range of crop and livestock activities, and mixed farming on-farm and off-farm livelihood opportunities. This approach is dictated by the need to target the small and marginal farmers whose agricultural production is particularly low and variable and whose vulnerability to food insecurity is particularly high. The following considerations have informed the design of the implementation arrangements.

- Five public agencies - NARC, DoA, DLS, DFTQC and DoHS - are involved partly because of the way institutional responsibilities are defined in Nepal. NARC has the national mandate for organizing and carrying out research in their respective areas. They also have a recognized role in source seed production and in breeding stock development, maintenance and improvement programs. The DoA and DLS have the main responsibility for extension support to farmers and constitute, despite presence of some service providers in different locations, the mainstay for provision of extension support and outreach at scale. The nutrition programs will be implemented through structure of MoHP (DoHS, Child Health Division) and MoAD (DFTQC, DoA, DLS) and will be primarily guided by the multi-sector nutrition plan of the GoN.
- Despite some complexities of institutional arrangements as more than one ministry is involved in implementation, the project is working through the agencies' existing structures and procedures as far as feasible rather than creating new modalities for the entire project period.
- Project sub-components are organized around activities being led by an implementing agency. MoAD will depute core staff to the PMU, including PD, two senior officers (one with crop background and the other with livestock background), technical officers (agriculture officer, livestock officer, agriculture economist), accounts officer, accountant and administrative assistant. The senior officers and technical officers deputed for the entire project period will work under the direct supervision of Project Director. They will assist in facilitating and coordinating planning and progress reporting and project related matters with

DoA, DLS, NARC and DoHS. The NARC and MoHP will designate coordinators in their respective organization to closely work with PMU. Similarly, at the regional level, RPSU coordinator will designate a counterpart officer to work closely with the project M&E officer to be positioned at the regional level.

- The PMU will prepare a Project Implementation Plan and Operational Guidelines, in consultation with implementing agencies, which clearly specifies the set of activities to be carried out, key steps in each activity, which beneficiary/stakeholder groups are involved at what step, and what processes are to be used (“selection criteria”, work and reporting norms, and so on). Each agency will also be involved – along with beneficiaries and the project staff – in the (annual) planning of the activities, specifying the activity calendar as well as the resources needed (both inputs and technical staff resources). Each agency will also play its specified role in collection of implementation-stage feedback/data for the project MIS. The TA team members hired through service providers will assist PMU, RPSU and DPSU in this process.
- A capacity assessment of the implementing agencies involved has been undertaken and the project will support the operation of these agencies in various ways as appropriate. The research stations under NARC will be strengthened by financing renovation of laboratories, maintenance of breed and varieties, introduction of new germplasm, field testing of technologies and staff training. Similarly, nutrition laboratory at DFTQC along with two regional food laboratories will also be strengthened for improved analytical services. Working conditions at service centers of DoA and DLS in the project districts is very poor and it has been one of the reasons for low motivation among field staff. The project will finance to equip these service centers with basic tools and equipment, office equipment and logistics. The capacity building of technicians engaged in service delivery will be addressed through various training and exposure programs with due priority. There is a need to finance incremental staffing and operational costs for wider service coverage.

12. *Project Staff for Implementation Support:* To support implementation activities at the farm level, the project will hire two kinds of staff through service providers. There will be project facilitators and technical service providers (technicians). The technicians will devote most of their time to implementing field level activities. These staff will be hired only for the lifetime of the project. Hiring this cadre of staff will enhance the capacity of implementing agencies – by providing both an adequate number of staff to handle the increased workflow and the relevant skill mix to execute the technical tasks – in order to adequately support and backstop project activities at the farm level. In areas, close to the service centers, the project facilitators will mobilize farmers group and coordinate with line departments and will provide technical support activities that would principally include crop/livestock demonstrations, farm water management and management of group/community productive assets.

13. *FAO Implementation Support.* The GoN have requested the FAO to deliver part of the Technical Assistance under a sole source agreement. The overall objective of FAO technical assistance is to fill capacity gaps and add value to the public and private sector of Nepal within the specific objectives of the AFSP. It is expected that FAO will provide two distinct packages of assistance as needed, pertaining to (i) capacity development and enhancement; and (ii) quality assurance. Within capacity development, FAO will be responsible for timely deployment and training of dedicated project staff, review of manuals, guidelines and extension materials, and



specific studies. With respect to quality assurance, FAO is expected to support needs assessment (HR gaps and training needs), development and integration of monitoring and reporting systems, and other technical support services as requested. The FAO Representative in Nepal will be responsible for overall management and administration of support services to be provided by FAO under the sole source agreement. The FAO sole source contract is reflected in the project Procurement Plan. The request for FAO sole source contract will be subject to the relevant approval process in the Bank.

14. FAO has been chosen by GoN as the sole source service provider for above mentioned services for the following reasons:

- Since the 1970s FAO has been assisting the GoN in a wide range of areas that are directly related to almost all the activities that are being proposed for the AFSP. More specifically, FAO has a proven track record having implemented numerous projects in Nepal, a number of which were located in the hills and mountains of the Mid and Far Western Development Regions - the target districts of AFSP.
- The project has adopted the Farmer Field School (FFS) approach as the modality in which it will deliver a variety of extension, nutrition and livelihoods related messages across all components of the project. The FFS was developed by FAO in South East Asia more than 20 years ago, and FAO has a proven track record of successfully mainstreaming FFS into government programs across more than 90 countries, including Nepal.
- Through its dedicated technical staff, both in headquarters and in country office, FAO brings international experiences, lessons learnt and best practices in almost all areas of the work envisaged under the AFSP as well as from the in-country ongoing projects. In addition FAO is the only agency directly addressing climate change adaptation and disaster risk mitigation through actual work in the field of agriculture in Nepal.
- FAO representation, which will be managing the implementation for TA, has persons with more than a decade of experience developing curriculums, organizing and running FFSs for crop production and on-farm water management and in promoting marketing of healthy farm products.

In the past FAO has been shown itself to be both willing and able to augment its supportive activities by providing assistance from either its own regular resources under its Technical Cooperation Programme or mobilizing additional funding from other donors while providing the initial urgent assistance from its TCP resources.

15. *Non Governmental Organizations/Project Facilitators.* The project will hire the services of two local project facilitators per VDC through a local NGO. The project facilitators will be largely responsible for organizing BGs and coordinating all project interventions at the community level. These BGs will be the entry point for project activities in a village (a village could be whole ward or more than one ward in a VDC). BGs/FGs will be organized as per the agreed criteria and in consultation with implementing agencies: DoA for crops and water management, DLS for livestock and DoHS for nutrition related interventions. Service providers, working under the guidance of relevant implementing agencies, will provide support services to the BGs/FGs. The project facilitators will support the entire activity cycle of the BG, starting from sensitization about the project, community needs assessment, group formation/mobilization, establishing group activity plans, helping with group

learning/training/exposure visits, to participatory M&E and establishing post-production links with relevant stakeholders. Technical staff will coordinate and backstop activities of project facilitators in their respective project areas. They will work for the district level functionaries of relevant implementing agencies (DADO, DLSO) to ensure smooth planning and implementation of project activities. The communities or BGs will be supported by local service providers or VAHW who will continue to provide relevant support services after the project period.

16. With regard to BGs, if there are existing groups in the selected VDCs that satisfy the set criteria, then they would be used for project implementation. It is important to verify at the field level whether or not there are already existing eligible groups to be selected as project beneficiaries. Once the eligibility is confirmed, it is important to understand their existing level of social mobilization or maturity and to build on the existing level. In a situation where there is need for new group formation, it will be important to ensure that each group will have clearly defined terms of engagement including the purpose and scope of the group's activities, criteria for selection of group members/beneficiary farmers, roles and responsibilities of the specific group members who will receive any project support in kind, group management and governance arrangements (especially for handling group funds and community-owned assets) and arrangements for ensuring sustainability. Operational guidelines will be prepared for releasing small grants to the user/ beneficiary groups.

17. *Demonstration and Adoption in Groups:* A specific feature of this project is to go beyond the standard activities of demonstrations and trainings with a clear objective of widespread adoption of technologies by farmers. In view of the resource poor small and marginal farmers that are the primary target of the project, this involves providing technical and in-kind support, on a declining basis, to subsequent groups of farmers who are interested in adopting a technology or practice after it has been demonstrated through the use of farmer to farmer extension. FGs will be internally organized in a way that enables this phased demonstration-to-adoption effect to occur.

18. *Training and capacity building arrangements:* The project will use cascaded approach for training to project staff, project facilitators and local service providers. Where necessary resource agency (including national and international NGOs) will be hired to develop program guidelines, training modules/materials, etc., organize Training of Trainer (ToTs), support district level training programs and provide overall oversight for ensuring quality of training and capacity building effort.

### **III. Project Governance**

19. The following governance and oversight arrangements have been established to ensure due oversight as well as collaboration and shared responsibility across the various line departments, agencies and other key stakeholders involved.

20. *Project Steering Committee (PSC):* The PSC will be chaired by the Secretary, MoAD and will consist of Joint Secretaries of MoAD, NPC, MoF, MoFALD, MoPH, Director Generals of DoA, DLS, DFTQC, ED of NARC, one representative each from the civil society (NGO federation and peasants coalition). The PD of AFSP will be Member Secretary of the PSC. The

PSC will meet quarterly and will approve the project's annual work plan and budget, monitor AFSP progress, provide oversight and policy guidance, and resolve any outstanding issues. A primary focus of the PSC will be to facilitate inter-agency cooperation to ensure achievement of the project's development objectives.

21. *Project Technical Coordination Committee (PTCC)*: The PTCC will be chaired by Joint Secretary MoAD. The PTCC will consist of the Program Directors/ chief of technical sections and/or commodity programs (DoA DLS, DFTQC, NARC, DoHS), PD, TA team members (as invitees). PMU will be the secretariat for the PTCC. The composition of PTCC will be elaborated in PIP. PTCC will be responsible for resolving technical guidelines and norms and guiding project management and implementation on a regular basis. It will also support in facilitating inter-agency corporation/coordination. PTCC will meet at least once every four months. The PTCC will form a sub-committee headed by PD for the implementation of Social and Environment Management Frameworks (SMF and EMF). Representatives from GEED/MoAD and technical sections under NARC, DoA, DLS and DoHS will be members of social and environment sub-committee and the social and environment consultant working at PMU will assist the sub-committee on technical matters and follow up with implementation. There will be two Regional Project Coordination Committees (RPCCs) in each of the two project regions. At the lowest level, in each project district the already existing DADC will be the coordination platform.

22. *Regional Project Coordination Committee (RPCC)*: Two RPCCs will be formed, one each in Mid-western and Far-western regions. The RPCC will be headed by the Regional Director (DoA or DLS) designated as Regional Project Coordinator by the MoAD and will be responsible for ensuring that there is strong inter-agency cooperation, coordination and integrated implementation at the regional levels. RPCC composition will consist of Regional Directors of DoA, DLS, DoHS, RARS or ARS (NARC), CSO representatives. The Nodal officer of the Regional Directorate (where RPSU will be located) will work as member secretary. TA team members will be the invitees. Chiefs of Regional Laboratories (soil, plant protection, seed, veterinary, food quality control), Regional Training Centers (agriculture, livestock), and Farms (poultry, forage seed, goat, crop seed, horticulture) supplying inputs to the project districts, will also be invited depending on the agenda as invitee. The RPCC will meet at least once every four months.

23. *District Project Coordination Committee (DPCC)*: The already existing DADC<sup>20</sup> will be the district level coordination mechanism. DADC is operational in all project districts. The District Food and Nutrition Committee (DFNC) envisaged by multi-sector nutritional plan of the GoN will be yet another forum for coordination wherever such committees are operational. The relevant implementing partners will be invited to participate in the DADC to make it more inclusive and purposive. The LDO will chair the DADC and chief of DADO will be the member secretary. The coordinator of DPSU (either DADO or DLSO chief, designated by MoAD to work as coordinator) will prepare a collective agenda for the DADC meeting. Other members include chief of district forest office, soil conservation, women and child development, divisional

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<sup>20</sup> The District Agriculture Development Committee (DADC) will be chaired by DDC chairperson who is supposed to be elected at local government polling. In absence of elected body, Local Development Officers (LDOs) are caretaking DDC chairpersons nowadays.

irrigation office, financial institution, farmers' representatives and the private sector. The DADC will meet at least once every four months. The DADC will be responsible primarily for coordination of the agricultural, nutritional and livelihood interventions at the district and grassroots level. It will have an important role in bringing inter-agency coordination (GOs/NGOs), annual program planning, monitoring and review at the district level.

#### **IV. Financial Management**

24. **Country Financial Management Environment.** Nepal Country Financial Accountability Assessment (CFAA) that was conducted jointly by the GoN and IDA in 2002 and subsequently updated in 2005, concluded that the failure to comply with the impressive legal and regulatory fiduciary framework makes the fiduciary risk in Nepal “High”, but the risk is similar to that in most developing countries. The situation has not significantly changed. The Public Financial Management (PFM) Review (May 2007) has reaffirmed that the PFM system in Nepal is well designed but unevenly implemented. The PFM benchmarks established in 2008 based on the Public Expenditure and Financial Accountability (PEFA) framework led by the government with technical assistance of the World Bank have endorsed the continuing “high” fiduciary risk with several PFM indicators rated at low scale. Joint DFID and World Bank progress review carried out in September 2008 and later in February 2009 have revealed little progress on implementation of PEFA Action Plan. Some of the prevailing country level risks include deteriorating control environment, insufficient monitoring, increasing threat of collusion and intimidation to bidders, weakening oversight agencies with the absence of institutional leaders which include the Auditor General and the Chief Commissioner of the CIAA have a wider impact on the country’s accountability environment including at the sectoral or project level. Further, the frequent turnover of the Financial Comptroller General and currently vacant position has raised the risk level in providing direction to overall financial discipline. While these challenges prevail, improving overall financial accountability framework remains a high priority of every government in transition. Frequent transition of political leadership in the government has been the main cause of slow movements in accelerating PFM reforms as envisaged by PEFA Action Plan. Some of the actions undertaken during challenging transition period such as, promulgation of the Public Procurement Act and Public Procurement Rules (2007) Financial Procedural Rules (2007), and the self-assessment of various PFM Indicators as per PEFA Guidelines in 2007 are some examples of government’s continued commitments. Implementation of these frameworks through an integrated PFM reform package through a set of mutually supportive actions that are realistic and can generate positive impacts is critical to mitigate fiduciary risks. Such a package has been reflected in the PFM Strategy Document prepared by the government. A high level steering committee chaired by the Finance Secretary provides necessary forum for close monitoring on implementation with continuation of collaborative support from development partners. There is a strong support from development partners to improve overall PFM environment through support from a Multi-Donor Trust Fund (MDTF) and through an ADB programmatic Technical Assistance.

25. **Implementation Arrangements and Adequacy of Financial Management Arrangements.** Overall, the project will have four components: Component 1 – Technology Development and Adaptation, Component 2 – Technology Dissemination and Adaption, Component 3 – Food and Nutrition Status Enhancement, and Component 4 – Project

Management. The MoAD will be the lead implementing agency and will work jointly with the NARC and the MoHP to implement the project. Day-to-day project administration and management will be carried out by a central PMU which has been set up under the MoAD based in Kathmandu. It will be supported by two Regional Project Support Units (RPSUs) in Surkhet in the Mid-Western region and Dipayal in the Far-Western region and a District Project Support Unit (DPSU) in each of the 19 project districts. The implementation responsibilities for the different components has already been described above. Similarly, the operational and coordinational arrangements between MoAD and NARC and MoHP have also been described above.

26. In a few ongoing projects, similar arrangements are already in place where Projects under MoAD have signed MoU with NARC. The MoAD will be overall accountable for implementation of the project but will require a strong coordination mechanism to ensure that other supporting agencies operate in close coordination with MoAD. The PMU set up under the MoAD will provide overall project management and coordination support. Based on in-country and global experiences in managing a multi-sectoral project, there will be a Project Steering Committee (PSC) chaired by the Secretary, MoAD. The PSC will consist of Joint Secretaries of MoAD, NPC, MoF, MoFALD, MoCPA, Director Generals of DoA, DLS, DFTQC, ED of NARC, one representative each from the civil society (NGO federation and Nepal Peasants Coalition). The Project Director of AFSP will be the Member Secretary of the PSC. The PSC will meet quarterly and will approve the project's annual work plan and budget, monitor AFSP progress, provide oversight and policy guidance, and resolve any outstanding issues. A primary focus of the PSC will be to facilitate inter-agency cooperation to ensure achievement of the project's development objectives. In addition, there will be a Project Technical Coordination Committee (PTCC) chaired by the Joint Secretary MoAD. The PTCC will consist of the program directors/chief of technical sections and commodity programs (DoA, DLS, NARC, DoHS and DFTQC), PD, TA team members (as invitees) and representatives from other implementing agencies involved. There will be two Regional Project Coordination Committees (RPCCs), one in each of the two project regions. At the lowest level, there will be a District Project Coordination Committee. The existing District Agriculture Development Committee (DADC) will coordinate and facilitate the project implementation at the district level and DADOs, DLSOs and DHOs will have major implementation responsibilities.

27. Given the multi-sectoral program and involvement of several implementing agencies, the proposed project will need to give a high priority to ensuring a good financial management. The PMU will need to ensure that competent finance staff would be deployed with an additional resource of a Financial Management consultant to guide the implementation of the program. Currently, there are no outstanding financial management or audit issues from the ongoing agricultural portfolio.

28. **Risk Analysis.** The financial management risk assessment was carried out for MoAD, NARC and DoHS. From the financial management perspective, the overall risk is "substantial". Given the nature of the project which requires specialized focus and a strong coordination amongst various agencies involved, it is important to ensure the continuity of key technical staff. Further, competent finance staffs need to be deployed in PMU, NARC and DoHS backed up by a Financial Management consultant at the PMU to support implementation of all three

components. Preparation and finalization of a detailed Implementation Plan which include procurement plan at least for the first 18 months and detailed project cost tables need to be ensured. It is also important that the government will need to provide required funds to pre-finance the expenditures required for project start-up which can later be reimbursed through retroactive financing provision. A dedicated budget line will be created for the proposed Project which will be managed by the PMU of the MoAD. Overall, there will be strong efforts in capacity building both in technical areas as well as overall project management which include procurement and financial management. To address certain gaps that have been identified during the assessment, risk mitigation Action Plans have been agreed, and the risks will be reduced as the action plans get implemented.

### **Planning and Budgeting**

29. The central level budgeting procedures for preparation, approval, implementation, and monitoring are elaborated in the Financial Procedural Rules 2007. The annual work program and budget will be based on the work program to be prepared by the PMU for all four components based on inputs from all implementing agencies. NARC and DoHS will prepare their work program based on milestones agreed in the respective MOU and Operation Modality. This will be provided to the PMU to prepare a consolidated work program and budget for the Project. The PMU will submit the annual work program and budget through the MoAD to the NPC and the MoF for discussion. Work program will be prepared based on the guidelines provided by NPC and budget preparation guidelines provided by MoF. MoF releases authorizations for expenditure to respective ministries, which in turn releases authorizations to respective departments and then to spending units. This program is a priority (P1) program of the government; hence funds will be promptly released as soon as the authorizations from respective ministries to departments are received accompanied by the Annual Work Plans. For FY2012/13, MoAD has already submitted the work program and budget to NPC and MoF.

30. **Funds Flow Arrangements.** GoN releases the budget as per the approved work programs to MoAD in three tranches as per its fund release procedures. The budget approved by GoN will be indicated in the government's budget (Red Book) under a separate budget head. Fund release for IDA's share of expenditures for recurrent and operating costs will be pre-financed through GoN's consolidated fund. For big contracts, payments can be made through direct payments either through the Designated Accounts or make request to IDA for making direct payments. Fund release to NARC and DoHS will take place based on criteria that will be set in the respective MOU and Operational Modality respectively. Upon approval of the work program and budget, appropriate adjustment will be made against the advance for the first trimester release. Subsequent second and third trimester releases are based on performance reflected by the physical progress reports as required by Schedule 2 of the FAR.

31. Fund requirements for NARC and DoHS will be envisaged in the work program for the Project. MoAD Secretary will delegate authority to implement the program to the Project Director based at the PMU and also to concerned heads of other departments under MoAD. The PMU will release funds to the NARC and to the DoHS based on terms and conditions of the MoU to be signed between the PMU and the NARC, and agreed operational modality between PMU and Child Health Division of DoHS. For reimbursement of IDA's share of expenditures to

GoN's consolidated fund, there will be a Special Designated Accounts which will be established at the Nepal Rastra Bank (NRB) to facilitate quick payments of various activities under the project including the reimbursement under terms and conditions acceptable to IDA. MoAD will designate the signatories to operate the Designated Accounts, and it will normally be the PD and the Finance Officer (FO). Transaction based disbursement procedures (traditional disbursement) will be applied for withdrawal of funds from the Grant.

32. **Project Implementation Plan (PIP).** A draft PIP has been prepared. This will be submitted to the Project Steering Committee for endorsement upon effectiveness of the project. Drawing on the PIP, Operational Guidelines in Nepali will be prepared to guide field level implementation.

33. For small grants arrangements to the communities, it has been agreed that MoAD will prepare Operational Guidelines, to be also translated in Nepali, which will, *inter alia*, specify the selection criteria as well procedures that will be used, and be aligned as much as possible with current practices. It was agreed that preparation and publication of this Operational Guidelines, acceptable to the Bank, will be a disbursement condition for the small grants.

34. **Project Financial Accounting, Reporting and Internal Controls.** The PMU will maintain books of accounts and prepare the project accounts on a cash basis. It will need to coordinate activities under all four components and obtain statement of expenditures from the respective implementing agencies of the components for consolidation purpose. The government accounting system and chart of accounts will be adopted by all government implementing agencies. In case of NARC, it will use its own accounting system and chart of accounts to account project expenses. Its Financial Administration Byelaws have prescribed the financial management system relating to approval of transaction. A consolidated implementation progress report which includes financial monitoring report will be prepared by the PMU on a trimester basis to monitor the implementation progress. Each component implementing agency will compile the monthly statement of expenditures (SOE) within seven days following the end of each month. The PMU will be adequately strengthened to maintain accounting information using spreadsheet or appropriate software.

35. Accounting information will be regularly updated in the PMU system to timely generate financial reports. As required by government system, the PMU will maintain Main Loan Ledger, Subsidiary Loan Ledger, Withdrawal Monitoring Register, Special Designated Accounts Ledger and other ledgers. GoN's internal control system will be applied to monitor the progress of the Project in accordance with sound accounting practices. Arrangements will be made for third party technical review of implementation of program. Activity-based subsidiary record for monitoring the detail accounts/key indicators will also be maintained by the PMU. The accounting systems contain the following features: (i) application of consistent cash accounting principles for documenting, recording, and reporting its financial transactions; (ii) a well-defined chart of accounts that allows meaningful summarization of financial transactions for financial reporting purposes; (iii) maintenance of withdrawal monitoring register, the record of Statement of Expenditures (SOEs) and Designated Accounts register; (iv) the asset register; (v) monthly closing and reconciliation of accounts and statements; and (vi) the production of annual financial statements.

36. **Financial Management Staffing.** The Project Management Team (PMT) at the PMU will be the overall coordination point to coordinate the overall implementation and management of project activities. The PMT will have a qualified full-time dedicated Project Director, one Procurement Expert (consultant), one Accounts Officer, one Accountant and one computer operator. Currently, MoAD has deputed both the Accounts Officer and the Accountant to the Project on a part time basis. Prior to the effectiveness of the Project, full time dedication will be required from the accounts staff to manage project finance. Because of a nature of the project which deals with several implementing agencies, a financial management consultant will need to be added at the PMU to support the financial management activities. For management of accounts at NARC, NARC has a team of qualified finance staff, and one of its staffs will be deputed full time to maintain accounts of activities incurred by NARC. Similarly, DoHS will designate one of its finance staffs to maintain the accounts and records incurred under the Project.

37. **Internal Audit.** District Treasury Controller Offices (DTCOs) in districts are responsible to carry out the internal audits of all cost centers operating in the districts. Internal audits are carried out on a trimester basis. Concerned cost centers of various agencies will need to forward the monthly expenditure statements to the concerned departments, which then will prepare their consolidated expenditure statements. NARC has its own internal audit department to carry out the internal audit of all expenses incurred under the Program.

38. **Implementation Progress Report.** The interim Financial Report or Financial Monitoring Report (FMR) of the Project Implementation Progress Report will report total investments to be separated by specific component or activity so that total investments as envisaged can be tracked and monitored. The PMU under MoAD will produce from the outset project implementation progress report, showing the sources and uses of funds, output monitoring report, procurement management report and narrative progress report in format to be agreed upon during negotiations. To match the public sector planning and reporting cycle, the IPR will be produced on a trimester basis and submitted within 45 days from the end of the preceding trimester.

39. **External Audit.** Currently, there are no overdue audit reports or issues related to ineligible expenses under any other Bank-funded projects being implemented by MoAD. The following is the audit<sup>21</sup> requirements under the Project: *Annual consolidated project financial statements and Designated Accounts statements will be audited by OAG, which is considered acceptable by IDA for this purpose, and submitted to IDA within six months after the end of the fiscal year.*

40. The following audit report would be monitored in the Audit Report Compliance system (ARCS):

Implementing Agency	Audit	Auditors	Audit Due Date
MoAD (PMU)	Project Consolidated	OAG	6 months after the end of

<sup>21</sup> The standard Terms of reference applied for other government executed projects will be applied.



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41. **Supervision Plan.** Project implementation progress will be closely monitored by MoAD and IDA. IDA will supervise project implementation for the purposes of supervision on fiduciary aspects of both procurement and financial management. The PMT of MoAD will report on project implementation progress through a trimester report, the IPR. The agreed action plans will be closely monitored to ensure appropriate actions are being implemented. Key FM fiduciary work includes: (i) periodic visits to cost centers for *ex-post* reviews, (ii) reviews of implementation progress reports and audit reports and preparing summaries of such reports; and (c) participating in supervision missions and keeping the team informed of financial management issues or improvements. The initial supervision focus will be on the progress of implementation of agreed actions, and facilitating both agencies in maintaining sound Financial Management arrangements throughout project implementation. From second year of implementation, IDA will field from time to time an independent consultant or consulting firm for *ex-post* review of financial management arrangements.

42. **Disbursement.** Disbursement under proposed Grant will be made as indicated in Table 10, which indicates the percentage of financing for different categories of expenditures of the project. Total project is US\$58.0 million, of which the GAFSP contribution is US\$46.5 million and counterpart contribution is US\$11.5 million. The detailed cost sharing arrangements is reflected in the Project Cost Tables, and will be explained in the Project Implementation Plan. It is expected that IDA funds will be disbursed over a period of five years. The Closing Date of the Grant is March 31, 2018.

**Table 10: Allocation of Grant Proceeds**

Category	Amount of the Grant Allocated (expressed in USD)	Percentage of Expenditures to be Financed (inclusive of Taxes)
1. Training and Workshops	13,900,000	100%
2. Consultants' services	8,700,000	100%
3. Works	2,100,000	100%
4. Goods and non-consulting services	12,500,000	100%
5. Incremental Operating Costs	5,800,000	100%
6. Small Grants	3,500,000	30% of amounts disbursed
<b>Total Amount</b>	<b>46,500,000</b>	

43. Disbursements from IDA will be made based on full documentation for contracts above the Prior Review threshold or SoEs. To facilitate disbursements, a Special Designated Account will be provided. Program costs are implemented through contractual services with firms or individuals and hence payments will be made directly from the Designated Accounts. For large value contracts, direct payment method for disbursements will be used. Small value contracts, goods of small values, small grants, training, workshops, incremental Operating Costs and

Project management costs will first be pre-financed by the government, and once the accounts are consolidated and approved will be transferred from the Designated Accounts to the government's consolidated fund.

44. **Retroactive Financing.** The Grant will provide retroactive financing for consulting services, training and operating costs not exceeding USD100,000 effective from September 1, 2012. For NARC and MoHP to avail the use of retroactive financing facility, it would be essential to ensure that the respective MoUs are signed before any project specific expenses are incurred.

45. **Use of Statement of Expenditures (SoEs).** SoEs will be used for following expenditures: (i) contracts for works costing less than US\$200,000 equivalent per contract; (ii) contracts for goods costing less than US\$200,000, (iii) contracts for services of consulting firms costing less than US\$100,000 equivalent per contract; (iv) contracts for services of individual consultants costing less than US\$50,000 equivalent per contract; (v) all training; and (vi) all incremental operating costs. During the supervision, the mission will closely review SOE claims to ensure that funds are utilized for the intended purposes. Any ineligible expenditure identified during such reviews will need to be refunded to IDA.

46. **Designated Accounts.** A Special Designated Accounts in US Dollars will be established at the NRB for utilization of IDA's share of project expenditures, on terms and conditions satisfactory to IDA. The authorized allocation for Designated Account will be US\$5.0 million. The designated accounts will be operated under joint signatures of the PD and the Accounts Officer.

47. The PMU will ensure that the bank/cash books are reconciled with bank statements every month. The PMU will submit replenishment applications for the Designated Accounts on a monthly basis, and replenishment applications will be accompanied by reconciled statements from the bank in which the account is maintained, showing all Designated Account transactions. Supporting documentation will be maintained by the respective cost centers for at least one fiscal year after the year in which the last disbursement from the grant took place, and will be available for review by IDA staff and independent auditors.

## **V. Procurement**

48. Procurement for the proposed operation will be carried out in accordance with the World Bank's "Guidelines: Procurement of Goods, Works and Non-consulting Services under IBRD Loans and IDA Credits and Grants by World Bank Borrowers" published by the World Bank in January 2011 ("Procurement Guidelines"), in the case of goods, works and non-consulting services; and "Guidelines: Selection and Employment of Consultants under IBRD Loans and IDA Credits and Grants by World Bank Borrowers" published by the World Bank in January 2011 ("Consultant Guidelines") in the case of consultants' services, and the provisions stipulated in the Legal Agreement. However, in the Nepal context, procurement may be carried out in accordance with country system adopting National Competitive Bidding (NCB) with additional IDA prescribed caveats and for contracts below the threshold as specified in the Legal

Agreement. However, for International Competitive bidding (ICB) and selection of consultants, the project will fully comply with IDA guidelines.

49. For each contract to be financed under the Grant, procurement methods or consultant selection methods, the estimated costs, prior review requirements, and time frame will be agreed between the Borrower and the Bank in the Procurement Plan which needs to be prepared by the borrower and reviewed by the Bank prior to the approval of the Project. Separate project period procurement plan and consolidated Procurement Plan (for the first 18 months) will be prepared by the PMU of MoAD, NARC. The Procurement Plan will be updated at least annually or as required to reflect the actual project implementation needs and improvements in institutional capacity.

50. On the basis of procurement capacity assessment of the PMU (MoAD) conducted by the Bank team, and observed capacity of DoA, NARC and DoHS (which are currently implementing some IDA funded projects), the overall procurement risk for the project was rated “High” and the residual risk was “Substantial” after the PMU is fully functional, a project period and a consolidated annual procurement plans are ready, a Project Implementation Plan is in place and a procurement consultant is hired.

## **VI. Environmental and Social Issues (including safeguards)**

### Social

51. The Social Management Framework (SMF) for the project includes social screening guidelines for land acquisition and donation, a vulnerable community development strategy, gender development strategy, consultation and information disclosure mechanism, monitoring, institutional arrangement for implementing SMF, funding mechanism, and possible system for capacity building.

52. In terms of the implementation of the SMF, it is expected that the TA team at the PMU would include a Livelihood and Social Inclusion Expert (LSIE). The LSIE would prepare guidelines and training manuals, and monitor progress of project interventions on vulnerable people and gender related issues as indicated in the SMF. The PMU would have a Project Environment and Social Management Committee (PESMC) as a sub-committee of proposed Technical Committee. The PESMC would be chaired by the PD. Other members of the PESMC would include LSIE, Environment Expert, gender and environmental staff of Gender Equity and Environment Division (GEED). It may also invite social and gender experts from other line agencies as per need. The GEED at the MoAD will oversee the planning and implementation of social inclusion and gender development related interventions to ensure that these are in compliance with government policy and the approved SMF. At the district level, the DPSU would form a District Environment and Social Management Committee (DESMC). The DESMC would be chaired by the coordinator of the DPSU. The members of the DESMC would include experts from DWDO, DFO, DSCWMO, and DDC. In addition, the technical staff working in each district (hired through the TA service provider) will coordinate social screening of the sub-projects with the help of project facilitators engaged in social mobilization.

53. The SMF also includes provisions for consultations which will be held at different stages of sub-project cycle, the schedule for which will be prepared by the District Project Support Unit (DPSU) and disseminated through local FM stations, local newspapers, and other mediums. The project will also establish community based Information Centers in the areas where subprojects are implemented, with disclosure of all relevant information, documents, leaflets, etc. Other places for information disclosure will be; the concerned VDC, Agriculture/Livestock Service Centers, the DDC, the Agriculture and Livestock district offices and regional directorates, and the PMU at the central level. The PMU will also post the subproject related information on its website.

54. The Grievance Redressal Mechanism (GRM) for the project will be established at two levels - at the community level where subproject is planned and implemented, and at the district level. The coordinator of DPSU will be responsible for establishing the GRM at community level. Complaint Resolution Sub-committee at the community level will consist of representatives from affected people, VDC representative, local NGOs, local service provider, and a representative from the DPSU. This committee will be chaired by the VDC representative or the senior member of the community as determined by the committee members.<sup>22</sup> At the district level, the District Agriculture Development Committee (DADC), which already exists in all districts, will work as dispute resolution body for the AFSP. The DADC is chaired by the Local Development Officer (LDO) of the DDC and includes Chief District Officer (CDO), and representatives from district line agencies related to agriculture development in the district as members. Any grievances not settled at the community level will be referred to the DADC. However if the DADC is unable to settle the dispute, it will be resolved according to the prevailing law of land.

55. There will be three levels of monitoring: a baseline survey, compliance and impact monitoring, and independent monitoring of overall social performance of the AFSP. Prior to the implementation of the sub-project, the DPSU will conduct a rapid baseline survey of main social indicators in the sub-project area and LSIE at the TA team of the PMU will prepare sub-project specific baseline indicators including: the population of vulnerable groups, livelihood strategies, income levels, representation in community organizations, etc. Compliance monitoring will examine whether the sub-project is complying with social safeguard measures (activities) it has committed to, or not. Impact monitoring will monitor the impact (outcome) of sub-project activities on the baseline situation of various social indicators. The DESMC under DPSU will be responsible for compliance monitoring (to monitor whether the sub-project is complying with social measures or not) and impact monitoring (to monitor the outcome of sub-project activities against the baseline). The DPSU may designate District Women Development Officer, who is also a member of DESMC, to take the lead for such monitoring. Compliance and impact monitoring will be done on a quarterly basis. In addition, GEED of the MoAD will hire independent consultants to monitor overall social impact of AFSP sub-projects. The project will bear the costs of consultants. Such monitoring will be done annually on a sample basis.

### Environment:

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<sup>22</sup> If all stakeholders related to a sub-project agree, the Citizen's Forum, which already exists in all wards of VDC, may also act as community level GRM.

56. The draft Environmental Management Framework (EMF) requires that subproject and activity be subjected to environmental screening and necessary level of assessment before implementation, and monitoring during implementation. It provides general guidelines for the screening and assessment, subproject EMP preparation, and for consultations as well as environmental codes of practice and institutional arrangement for implementing the EMF.

57. The PMU in Kathmandu will be supported by a national level service provider. The national service provider would be required to have an Environmental Specialist (ES). The ES would be project's environmental focal person at centre and would coordinate environment related activities of the project. The PMU would have a Project Environment and Social Management Committee (PESMC) as a sub-committee of proposed Technical Committee. At district level, a District Environment and Social Management Committee (DESMC) would be formed at DPSU. The DPSU coordinator will chair the DESMC.

58. The technical staff at district level hired through the TA service provider will provide field services. There would be two Regional Project Support Units (RPSUs) for two development regions. Each program district would have a District Project Support Unit (DPSU) for the field level implementation of the project. The DPSU would work closely with the DADC, DFNC. At district level, the DPSU can draw on environmental expertise of DADC members. In addition, the local NGO would have a focal person for environmental management. At regional level, RPSUs can utilize expertise of Regional Agriculture Coordination Committee (RACC) on environmental matters.

59. The environment management process would be as follows. The technical officers and the relevant expert assigned by the DPSU would conduct initial environmental screening of sub-projects. Subproject concept note would not be accepted without environmental screening. A district level DESMC will review findings of the initial screening. The DPSU forwards its recommendations, via RPSU, to PMU for final approval. If the sub-project needs an IEE, the ES at the PMU prepares a ToR and gets it approved by the agriculture and environment conservation committee/GEED. DPSU or the proponent will hire an independent consultant to conduct an IEE. The IEE will be reviewed by ES/PESMC and approved by MoAD/GEED. The DPSU and project proposer would incorporate findings of IEE, EMPs, and ECoPs in sub-project proposal. The DESMC, with help from technical officer and PESMC, with help from national service provider, would review sub-project proposals and examine whether environmental concerns are included in the proposal or not.

60. DESMC will monitor (compliance and impact) subproject on a quarterly basis. The release of fund would be made conditional on the compliance of environmental commitments. The DPSU would send monitoring reports to the PMU. The ES consultant at the TA Team would review and prepare an annual monitoring report and submit it to the PMU. The ES may visit sample sub-project sites to cross check, if needed. Additionally, an independent consultant will be engaged to monitor the overall environmental performance of the project. Independent monitoring would be conducted annually beginning from the second year of the project on sample sites.

61. The assessment made during EMF preparation reveals relatively weak environmental management capacity of the centre (GEED/MoAD), regions and districts. In general, environmental management capacities of all directly involved institutions need strengthening for effective implementation of the EMF provisions. Although most NGOs do not have separate units in their organization to deal with environmental issues, many of them have experience in dealing with environmental problems. The EMF contains environmental capacity strengthening measures, such as resources to strengthen environmental capacity of GEED, provision of human resources at centre and districts, targeted environment awareness and training, and targeted orientations on EMF as well as availing project resources for hiring need-based environmental services.

## **VII. Monitoring & Evaluation (M&E)**

62. *M&E Arrangements.* The project will have a results-based M&E system that will monitor project processes using the following methods and tools: (a) well defined Results Framework that constitutes clearly defined goals, objectives, outputs and activities with corresponding indicators, means of verification and key assumptions; (b) well-defined M&E strategy for project processes, information requirements, tools and methodologies for data collection, analysis and reporting; (c) comprehensive M&E plan with clear roles and responsibilities as they relate to indicators tracking with respect to data gathering and reporting; (d) Project Management Information System (PMIS) which will be a computerized information system that caters to the project level information needs; (e) Internal and External periodic assessment and evaluations which would include village baseline surveys, baseline studies, gendered community score cards, mid-term evaluations, ex-post evaluations and impact evaluations; and (f) Participatory Community Monitoring and Accountability approaches and systems.

63. The project will ensure that all stakeholders are taking part in monitoring of project processes according to defined roles and responsibilities based on specific performance indicators. It will also promote participatory community monitoring tools such as community score cards to ensure that project implementation processes are executed in a satisfactory manner and those benefits are sustainable.

64. *Implementation Arrangements.* The PMU will have the overall responsibility for the M&E function although the implementation of the M&E function will take place mainly at the FG and community levels. The Technicians/ Project Facilitators (PFs) will be responsible for the collection of M&E data, which will be input into the Project. The frequency of updates will be determined based upon the category of M&E data being collected and is expected to be spelled out in the M&E Strategy and implementation plan that will be undertaken in the first year of the project. The chief of DADO, DLSO and DHO will review a sample of the input data periodically to check its validity, oversee the functioning of the Technicians/PFs as well as provide necessary technical backstopping on M&E. The M&E officer at the RPSU will be responsible for reviewing the input M&E data and signing off on it before it is considered “acceptable” to the Project MIS – for reporting.

65. Finally, the Development Impact Evaluation Initiative (DIME) will conduct impact evaluations of project interventions. DIME will work independently, using a separate source of

funds. Beyond the project outcome indicators mentioned in Annex I, DIME will also measure the impact of the project in terms of increase in household incomes and improvements in household's nutritional status.

66. *Role of Partners.* The project is financed by the GAFSP, which is multi-donor financing mechanism. Under the rules of GAFSP engagement, the World Bank is designated as the Supervising Entity for this project on behalf of the GAFSP. As such, the project will be prepared and implemented in accordance with the rules and procedures of the World Bank. FAO as a Development Partner has been closely involved in the original GAFSP proposal prepared by GoN. GoN has indicated that there is likely to be a role for the FAO as a sole source service provider during project implementation on account of FAO's knowledge, experience and technical expertise in the agriculture sector of Nepal. USAID has also supported the preparation of this project. It is also financing a separate operation in the mid- and far-West regions of Nepal under its *Feed the Future* initiative. Attempts will be made to coordinate and ensure convergence of interventions proposed under this project with those under the USAID-funded operations.

## VII. GOVERNANCE AND ACCOUNTABILITY

67. The project will adopt a Governance and Peace (GAP) action plan to address critical operational issues. The action plan seeks to ensure good governance, conflict-sensitivity, transparency and accountability, and inclusion in the management of project activities and is part of the Project Operations Manual. This is based on Nepal's existing governance and policy framework. The action plan has identified several areas for adjusting project governance to the policy and political environment: inter-departmental coordination, organizational arrangements, inclusion, monitoring, and accountability arrangements. As a way of improving institutional performance, each government agency involved in project implementation will prepare a plan for institutional strengthening covering aspects of staffing capacity and skills, work processes, monitoring, and communications. A grievance handling system will be put in place with tracking mechanisms for actions on public grievances/suggestions. Third-party verification, including social audit, public audit and public hearing on project activities will be encouraged to address fraud and corruption risks. Beneficiaries will be involved in monitoring project activities in their communities.

68. Nepal's current transition to peace and democracy has been marked by political instability and a lack of trust among key political players. The action plan seeks to ensure that project activities do not lead to any tension between communities in relation to project benefits. Proper consultation with communities, use of IEC materials, and awareness promotion activities will form the central elements of the action plan to address potential conflict risks. In addition, the project will emphasize benefits for underserved areas and underprivileged communities during the selection of project villages/sites. The GAP action plan proposes actions for each of these issues, including timelines for each action. This will be a living document and will be strengthened, as necessary, based on lessons learned during the implementation of the project.

**Annex IV**

**Operational Risk Assessment Framework (ORAF)**

**Nepal: Nepal Agriculture and Food Security Project (P128905)**

1. Project Stakeholder Risks						
<b>1.1 Stakeholder Risk</b>	Rating	Low				
Description:  Low stakeholder risk to PDO since project concept and approach comes out of a consensual, government-led process which was explicitly supported by all major donors and involved local, regional and national consultations with civil society stakeholders. Potential risk of project design being perceived as "top-down", given remoteness of project area and beneficiaries.	<b>Risk Management:</b>					
	Periodic consultations have been held in project locations and with a wide range of stakeholders, including civil society representatives.					
	Resp: Both	Stage: Implementation	Recurrent: <input type="checkbox"/>	Due Date: 10-Jan-2013	Frequency:	Status: Completed
	<b>Risk Management:</b>					
Project design involves farmer's participation in selection of crop varieties and other technologies to be promoted under the project. This should encourage acceptance of project activities by farmers.						
Resp: Both	Stage: Implementation	Recurrent: <input type="checkbox"/>	Due Date: 10-Jan-2013	Frequency:	Status: Completed	
2. Operating Environment Risks						
<b>2.1 Country</b>	Rating	High				
Description:  1. Delays in policy-related decision-making, physical insecurity, and slow	<b>Risk Management:</b>					
	The CD and task teams will engage political leaders to explain key policy issues and timing considerations. Teams will be cautious about building major reforms into projects.					
	Resp: Bank	Stage: Imple	Recurrent: <input type="checkbox"/>	Due	Frequency	Status: Not



<p>procurement processes will delay implementation and may prevent completion of activities/ achievement of objectives.</p> <p>2. Decisions on development policy and programs are likely to be delayed at the executive and/or legislative level. There is little to no appetite for major reforms.</p> <p>3. Preparation and implementation can be delayed as a result of physical insecurity in different regions, coupled with localized, regional, and nation-wide transport strikes (bandhs).</p> <p>4. Serious delays in completing the procurement cycle are likely, due to civil servant/public official concern over inconsistencies between the Public Procurement Act (PPA) and IDA procedures, despite Clause 67 of the PPA that permits donor rules to be applied instead of PPA rules.</p>		ment ation		Date:	:	Yet Due	
	<b>Risk Management:</b>						
	Conflict-sensitive project design and effective communications will be used to help mitigate localized risks. Where feasible, project design will build in flexibility in geographic targeting to respond to physical security risks during implementation.						
	Resp: Bank	Stage: Imple menta tion	Recurrent: <input type="checkbox"/>	Due Date:	Frequency	Status: Not Yet Due	
	<b>Risk Management:</b>						
	A series of INT/SARPS workshops and clinics with CIAA, PPMO, project agencies, and contractors are underway to improve understanding of IDA procedures and good procurement practices. A communication strategy around Clause 67 is also being explored.						
	Resp: Client	Stage: Prepa ration	Recurrent: <input type="checkbox"/>	Due Date:	Frequency	Status: In Progres s	
<b>2.2 Sector and Multi-Sector</b>	Rating	Moderate					
<p>Description:</p> <p>1. Absence of locally elected government bodies could pose implementation risks.</p> <p>2. Competence in managing the budget cycle and associated risk of delay in releasing funds due to delays related to the budgetary process.</p>	<b>Risk Management:</b>						
	Design mechanisms that deal directly with communities, case by case.						
	Resp: Client	Stage: Imple menta tion	Recurrent: <input type="checkbox"/>	Due Date:	Frequency	Status: Not Yet Due	
<b>Risk Management:</b>							
Ability to spend across fiscal years is possible if a program obtains approval of the annual work plan							

<p>3. Weak internal controls and lack of follow up to auditor qualifications increases the risk of financial irregularities.</p> <p>4. Vacancies or lack of continuity in staffing due to political interference and/or frequent rotations may result in slow implementation and disbursements.</p> <p>5. Introduction of a federal state may require changes in implementation arrangements and policy agreements.</p>	(Form 1) from the chief accounting officer (line ministry), MOF and NPC early in the budget cycle. Mitigation measures could include GoN/WB task teams being trained in the steps needed for early Form 1 approval.					
	Resp: Client	Stage: Implementation	Recurrent: <input type="checkbox"/>	Due Date:	Frequency:	Status: Not Yet Due
	<b>Risk Management:</b>					
	Dialog with senior authorities to ensure timely follow-up and remedial actions to mitigate auditor observations. GAAPs developed for each project/ program.					
	Resp: Bank	Stage: Implementation	Recurrent: <input type="checkbox"/>	Due Date:	Frequency:	Status: Not Yet Due
	<b>Risk Management:</b>					
	A clause will be included in the IDA Financing Agreement that specifies core management team composition, continuity in post requirements, and understandings regarding consultations with IDA prior to changes in core team.					
Resp: Client	Stage: Implementation	Recurrent: <input type="checkbox"/>	Due Date:	Frequency:	Status: Not Yet Due	
<b>Risk Management:</b>						
NLTA and on-going sector dialog with CA and GON officials are contributing to a better understanding of options and global experience. Transitional road maps will be prepared when the structure/ functions are better defined.						
Resp: Client	Stage: Implementation	Recurrent: <input type="checkbox"/>	Due Date:	Frequency:	Status: Not Yet Due	

3. Implementing Agency (IA) Risks (including Fiduciary Risks)

<b>3.1 Capacity</b>	Rating	Substantial				
<p>Description:</p> <p>1. Some skill gaps exist in technical as well as fiduciary areas (which exacerbate the overall high risk environment with respect to fiduciary issues). Transfer of key staff can happen unexpectedly, leading to loss of continuity, momentum and investment in skill formation.</p> <p>2. Institutional mechanisms for coordination of activities of different departments and agencies are weak. Program/project management capacity, especially at the lower levels, is also generally weak.</p> <p>3. Due to overall staff and resource constraints, implementing agencies have weak capacity on the ground – in the sense of actual capacity to directly support farmer communities.</p>	<b>Risk Management:</b>					
	Skill gap will be filled by hiring specific resource persons (including for FM and Procurement) during preparation and implementation phase and embedding them in the Project Preparation Team and the Project Management Unit (PMU). The Government is being requested to ensure continuity, including through retaining deputed members in the present preparation team as members later of the PMU.					
	Resp: Client	Stage: Implementation	Recurrent: <input type="checkbox"/>	Due Date: 30-Sep-2013	Frequency:	Status: Not Yet Due
	<b>Risk Management:</b>					
Steering Committees will be established at national, regional and district levels, involving key players, to ensure more effective coordination. To strengthen project management capacity at the lower levels, project design will involve: two Regional Project Implementation Units (each with adequate range of skills, complemented through market hire, if necessary); detailed project implementation manual to for clear systems and processes; and emphasis on adequate staff training.						
Resp: Client	Stage: Implementation	Recurrent: <input type="checkbox"/>	Due Date: 30-Sep-2013	Frequency:	Status: Not Yet Due	
<b>Risk Management:</b>						
Project is being designed to fill the outreach gap by relying on non-state players (local facilitators/para-workers, specialist service providers – depending upon local conditions and available options) to work with farmer groups at the ground level. Government/department staff will be (re-)trained to technically back-up these players and play an expanded role in quality assurance.						
Resp: Client	Stage: Implementation	Recurrent: <input type="checkbox"/>	Due Date: 30-Sep-2013	Frequency:	Status: Not Yet Due	
<b>3.2 Governance</b>	Rating	Moderate				

<p><b>Description:</b></p> <p>Ownership and commitment to project should be strong since this is a home-grown project, resulting from a government-led initiative, and derived from government plans and priorities. Although the implementing agencies also have well-established rules and oversight procedures, effectiveness of response to grievances as well as reviews and assessments may need to be strengthened.</p>	<p><b>Risk Management:</b></p> <p>A robust grievance redressal mechanism, as part of the peace filter-related governance and accountability plan, will be designed in the project to improve quality and responsiveness of decision making. It will be backed up by an appropriate information and monitoring system.</p>					
<p><b>Fraud and Corruption</b></p>	<p>Rating</p>	<p>Moderate</p>				
<p><b>Description:</b></p> <p>Nepal's legal framework for combating corruption has been sidelined by the country's transitional issues and political instability. Corruption has therefore become a major obstacle to development. However, at the level of the implementing agencies, no special risks arise beyond those at the overall country level (hence rating relates more to the overall country level risk). With respect to the implementing agencies, there is no associated history or significant perception of fraud and corruption (although they have been involved in Bank operations). Also, their controls and procedures are not specifically weak in particular areas with respect to F&amp;C issues.</p>	<p><b>Risk Management:</b></p> <p>As part of Peace filter and Governance related work, an institutional assessment is being undertaken to understand better the fissures and cracks in the system. Beyond robust frameworks and implementation arrangements for FM and Procurement, a strong governance and accountability plan will also be developed. Further significant attention will be paid to adequate training and capacity building in this regard.</p>					
	<p>Resp: Both</p>	<p>Stage: Implementation</p>	<p>Recurrent: <input type="checkbox"/></p>	<p>Due Date:</p>	<p>Frequency:</p>	<p>Status: Not Yet Due</p>

4. Project Risks

<b>4.1 Design</b>	Rating	Substantial				
<p>Description:</p> <p>1. Project requires research and extension departments to coordinate their actions across the current institutional divide. For component 3, close coordination between MOHP and MOAD is essential.</p> <p>2. Target communities are dispersed across a difficult terrain.</p> <p>3. Weather and natural hazards can have significant impact through droughts and disruption of access.</p> <p>4. Input grants given by project to beneficiary groups may create pressures for rent seeking and outside interference.</p>	<b>Risk Management:</b>					
	<p>Project design, to be reflected in relevant operation manuals, will involve joint task planning by research and extension departments. A carefully developed results framework and associated M&amp;E plan will be used to assess the effectiveness of coordination between research and extension. Specific training will also be provided in this regard and existing platforms for coordinating research and extension activities will be strengthened.</p>					
	Resp: Client	Stage: Implementation	Recurrent: <input type="checkbox"/>	Due Date: 30-Sep-2013	Frequency:	Status: Not Yet Due
	<b>Risk Management:</b>					
	<p>To deal with dispersion and remoteness, the project will try to train local/area based people/service providers to work with FGs. It will also seek to enhance use of ICT to connect with and effectively backstop these resource persons/service providers.</p>					
	Resp: Client	Stage: Implementation	Recurrent: <input type="checkbox"/>	Due Date: 30-Sep-2013	Frequency:	Status: Not Yet Due
	<b>Risk Management:</b>					
<p>The project will aim to mainly replicate previously successful models. Project design will be kept flexible with a significant community partnership/participatory aspect, to both improve customization to local situation and adaptability to unforeseen developments.</p>						
Resp: Client	Stage: Preparation	Recurrent: <input type="checkbox"/>	Due Date:	Frequency:	Status: Completed	
<b>Risk Management:</b>						
<p>Detailed Project Implementation Plans (PIPs) are being drawn up which will clearly specify the objective, third-party verifiable criteria for selection of beneficiaries as well as the open and transparent</p>						

	processes for forming groups. The PIPs will also contain detailed, monitorable norms about provision of input grants and the monitoring of their use and impact. Groups will members will be also expected to co-contribute.					
	Resp:	Stage: Implementation	Recurrent: <input type="checkbox"/>	Due Date: 30-Apr-2013	Frequency:	Status: Not Yet Due
<b>4.2 Social and Environmental</b>	Rating	Low				
<p>Description:</p> <p>The project is expected to have an overall positive impact through improvements in households' income levels and nutritional status, including that of vulnerable groups. However, the project will support small scale physical infrastructures which might require additional land, and also focus on activities that are dependent on resources from natural habitats and forests, and/or may use international waters. The environmental and social impacts thus generated are however likely to be minimal because of the small scale and dispersed nature of the activities. So the project is classified as Category B.</p>	<p><b>Risk Management:</b></p> <p>As part of project preparation, the MOAD undertook social and environmental assessment of the project to assess key social and environmental risks, potential impacts, and accordingly developed a Social and Environmental Management Framework (SEMF) to mitigate these risks and impacts which has been disclosed.</p>					
	Resp: Client	Stage: Both	Recurrent: <input type="checkbox"/>	Due Date:	Frequency:	Status: Completed
<b>4.3 Program and Donor</b>	Rating	Low				
<p>Description:</p> <p>The project is not part of any program and hence, not dependent on other projects/activities/sources of funding. On the positive side, it is highly likely that</p>	<p><b>Risk Management: N/A</b></p>					

<p>other donors such as ADB and USAID will undertake operations in food security which will be aligned with interventions under this project (in terms of both approach and geographic areas).</p>						
<p><b>4.4 Delivery Monitoring and Sustainability</b></p>	<p>Rating</p>	<p>Moderate</p>				
<p>Description: Available systems and approaches for results based monitoring and timely feedback need to be strengthened. Sustainability of project outcomes is not likely to be at risk since, by the nature of the project, sustaining project outcomes beyond project completion does not require implementing agencies to sustain their efforts at the same level as during project implementation.</p>	<p><b>Risk Management:</b> The project has developed a coherent overall Results Framework, which will pull together targets and outputs supposed to be achieved at various levels. It will be supported by an appropriate M&amp;E strategy and plan (specifying priorities, information needs, and relative roles and responsibilities of different implementing agencies). This will be augmented by participatory community monitoring and external impact assessments.</p>					
	<p>Resp: Client</p>	<p>Stage: Implementation</p>	<p>Recurrent: <input type="checkbox"/></p>	<p>Due Date: 30-Apr-2013</p>	<p>Frequency:</p>	<p>Status: Not Yet Due</p>
<p><b>5. Project Team Proposed Rating Before Review</b></p>						
<p><b>Preparation Risk Rating: Moderate</b></p>			<p><b>Implementation Risk Rating: Substantial</b></p>			
<p>Description: Preparation does not involve any significant challenges that cannot be effectively mitigated.</p>			<p>Description: The essential nature of the project – focus on food insecure communities with marginal livelihoods in remote locations, and the fact that existing institutions and capacities are limited and stretched in these areas – involves risks that will remain significant even after mitigation measures.</p>			

## **ANNEX V: Implementation Support Plan Agriculture and Food Security Project**

### **Strategy and approach for Implementation Support**

1. The strategy and approach for implementation support will focus on the risk factors to achievement of the PDO identified in the ORAF, and in particular on: (i) multiple agencies involved in implementation; (ii) identified institutional weaknesses of those agencies, including with respect to implementing Bank projects; (iii) the need to interact intensively with project beneficiaries at the local level to ensure the adoption of new seed varieties and technologies that will effectively address existing production constraints; and (iv) the need to ensure that project inputs are targeted effectively and transparently.
2. *Multiple agencies involved in implementation:* A relatively large share of project resources will be devoted to management and coordination of the activities of the participating implementation agencies. They will include a central PMU, two RPSUs and DPSUs. In addition, there will be Facilitators at the local level responsible for coordination of project activities.
3. *Institutional capacity weaknesses, including for Bank procedures and practices:* The project will finance additional technical staff as appropriate. Particular attention will need to be given to the staffing and skills of the PMU. This will include: (i) strengthening the capacity of staff in Bank procurement, financial management, and safeguards procedures through training workshops and ongoing support; (ii) the development of a detailed Project Implementation Manual addressing all major policies and procedures with regard to fiduciary and social protection issues; and (iii) periodic project monitoring and supervision.
4. The borrower has prepared an Environmental Management Framework (EMF) to manage safeguard policy issues. It contains screening mechanisms and checklists to identify and manage site-specific safeguard concerns once sub-projects are identified and selected and the project has and will continue to build sufficient capacity to plan and implement the EMF. Staff in PMU and in RPSUs will oversee and implement the EMF. Additionally, extension teams from the implementing agencies will be trained and supplied with environmental good practices (in, for example, safe pesticide storage and handling) to assist farmers on-the-ground. Farmers and other project implementing entities will be trained or informed as necessary on environmental safeguards related aspects of the project. Annual reviews of safeguard performance will be conducted and changes instituted as necessary. The overall project MIS will also capture information on safeguards implementation.
5. **Ensuring adoption of effective varieties and technologies.** It will be important to ensure effective interface between farmers and the technical agencies participating in project implementation. The information flow needs to be two way to ensure that farmers fully understand the nature, requirements, and implications of proposed changes in production methods, and that the ground realities at the local level in turn can be incorporated into the further development and evolution of these changes. The project will invest heavily in community facilitation and will aim to utilize existing producer/interest groups to the extent possible to organize project beneficiaries early in project implementation. The project is also



investing in increased technical presence at the local level to improve the exchange of information.

6. **Targeting of project inputs:** Criteria for identification of project beneficiaries are described in PIP. Specific criteria will be established for demonstration farmers and primary adopters. A system of public disclosure, financial audit, community participatory monitoring and a grievance redressal system will help ensure proper targeting and use of inputs. The independent M&E consultant will be required to interact with beneficiaries and collect data on this aspect of the project. It will also promote participatory community monitoring tools such as community score cards to ensure that project implementation processes are executed in a satisfactory manner and those benefits are sustainable.

A project level MIS will be developed that will have the ability to track physical and financial information pertaining to project level investments. This will be used, along with qualitative and quantitative information from other sources to review implementation progress of the project.

## 7. **Implementation Support Plan**

8. The task team from the Bank will organize routine dialogue, donor coordination, and troubleshooting. The team will be ready to carry out field visits as and when necessary.

- i. **Fiduciary requirements and inputs:** The bank specialists will assist MoAD and the various implementing departments to identify any capacity building needs to strengthen its financial management capacity and the procurement specialist will provide timely support on procurement issues. As both the FM and procurement specialists are based in the country office, the Bank's fiduciary team will have constant interaction with their Government counterparts and will provide regular assistance to the implementing agencies as required. Ad-hoc meetings will also be called to explain questions and to clarify any issues;
- ii. **Staffing and skill requirements:** The task team will comprise members with long-term experience in agricultural extension, research, community mobilization, water management, nutrition, M&E, and others within and outside Nepal;
- iii. The PMU will ensure that semi-annual progress and project performance reports are shared prior to the Bank mission's arrival into Nepal;
  - a. For the first two years intensive hand-holding support will be provided as it is crucial that the PMU and RPSUs maintain a strong emphasis on ensuring that all project staff, group members and the community as a whole understand the concept of the project and its value in improving productivity; similarly close monitoring of the time and quality of technical expertise provided by PFs, service providers and extension agents will be done to ensure that the needs of farmers are being met in a timely manner so that the PDO can be achieved.
- iv. **Resource Implications:** Funding for supervision of AFSP will be entirely provided by GAFSP

### **Implementation review support:**

- a. The Bank will routinely review project implementation and provide support on a regular basis. Project Implementation would be reviewed on a semi-annual basis by Bank implementation review missions which will be complemented by short/regular visits by individual team members to follow-up on specific issues as needed. The implementation support strategy would be based on a combination of site visits and proactive follow-ups on relevant information from multiple sources.
- b. During implementation support missions the task team will thoroughly review overall implementation progress, confirm that plans for implementation and the necessary institutional mechanisms are in place and in accordance with the agreed design of the project. To assess this the team will (i) undertake a detailed review of each project component; (ii) engage in detailed dialogue at the PMU and RPSUs levels to identify key issues and agreed upon actions to achieve the outcomes envisaged for the following 6 months and/or project period; (iii) conduct a review of fiduciary aspects including disbursements and procurement and; (iv) verify compliance of project activities with the Bank's environmental and social safeguard policies.
- c. During field visits the mission will visit selected project villages to assess and physically verify work financed under the project. During site visits government and mission members will interact with concerned Beneficiary/FG members, PFs, service providers, and extension agents involved in group mobilization and capacity building. Project villages/sites will be selected on the following criteria: random selection from a district-wide list of project activities provided by the PMU; and a special emphasis on sites identified as having grievances or where slow implementation is being reported;
- d. Information obtained from visits to specific sites by Bank missions will be supplemented, at the regional and district levels, with feedback obtained from a larger set of project beneficiaries through meetings/workshops convened with a cross-section of Farmer Groups, CSOs and other key organizations/individuals working on the project also invited to again additional perspective. All project districts will be covered by rotation during supervision missions with priority accorded to (a) districts with relatively larger number of activities; (b) problem VDCs/wards as identified by the grievance monitoring system and other information sources.
- e. Fiduciary reviews during supervision missions will include reviews of a random sample of contracts and spot checks of accounting records and financial reporting systems at the central, regional, district and village/site levels. Report of the projects internal auditors will be reviewed and meetings held with them to gain additional perspective. Issues identified will be recorded in the aide-memoires and following up post-mission.

## **ANNEX VI: Governance and Peace (GAP) Action Plan Agriculture and Food Security Project**

### **I. Introduction**

1. The project preparation team has developed this GAP Action Plan to address critical operational concerns related to management of the Nepal Agriculture and Food Security Project (AFSP). The GAP Action Plan seeks to ensure good governance, conflict-sensitivity, transparency and accountability, and inclusion in the management of project activities. The Action Plan is based on Nepal's existing governance and policy framework. In addition, elements of World Bank's social, governance and access to information policies have been incorporated into this document. Further, the Action Plan is also informed by the workshop conducted on governance and peace, social assessments, and others, conducted during project preparation, as well as lessons learnt from other Bank-funded projects in Nepal and elsewhere. The GAP Action Plan will be a living document and will be strengthened, as necessary, based on lessons learned during the implementation of the project.

### **II. Key governance issues in AFSP**

#### *Institutional arrangements*

2. The MoAD will be the lead ministry for project coordination, and it will work with the MoHP to ensure that project activities are implemented smoothly. Five public agencies - NARC, DoA, DLS, DFTQC and DoHS - are involved partly because of the way institutional responsibilities are defined in Nepal. NARC has the national mandate for organizing and carrying out research in their respective areas. They also have a recognized role in source seed production and in breeding stock development, maintenance and improvement programs. The DoA and DLS have the main responsibility for extension support to farmers and constitute, despite presence of some service providers in different locations, the mainstay for provision of extension support and outreach at scale. The nutrition programs will be implemented through structure of MoHP (DoHS, Nutrition section) and MoAD (DFTQC, DoA, DLS) and will be primarily guided by the multi-sector nutrition plan of the GoN. Various regional and district level agencies of the Government will be involved in the delivery of project activities creating challenges of coordination. Inter-agency coordination is one aspect of the challenge. The other is to be able to coordinate the support and efforts of NGOs and community groups. This will demand significant efforts at capacity enhancement both at central and local levels.

#### *Transparency and accountability*

3. With the enactment of the Right to Information Act in 2007, GoN agencies are required to disclose information on their activities, except for pre-defined 'sensitive' transactions. A number of petitions have been filed with the National Information Commission formed under the RTI Act, and GoN continues to work on further enforcement of RTI. Improved transparency in project implementation is also emphasized under the World Bank's recently adopted access to information policy.

### *Conflict and peace-building*

4. AFSP involves a large number of activities at the community level. Consequently, it can have varied implications for various stakeholders. Hence, attention to these aspects will be useful to for promoting peace or mitigating conflict during the implementation processes.

### *Gender and social inclusion*

5. The project is expected to generate positive social impacts through its efforts to enhance food and nutrition security. The Project targets marginalized and disadvantaged groups and communities in the mid- and far-West regions. To ensure that the poor and marginalized/disadvantaged groups realize the expected benefits from the project, it is essential that proactive attempts are made to include the target groups in project activities.

## **III. Objectives of GAP Action Plan**

6. The objective(s) of the GAP Action Plan is to contribute towards strengthening governance, peace and social cohesion in AFSP activities. It will achieve these objectives by helping:

- Ensure that resources allocated by GoN and the Bank are spent for the intended purposes and directed to the beneficiaries of the project;
- Develop mitigation measures to address risks related to conflict, governance, accountability, and inclusion;
- Strengthen coordination between different GoN agencies and other stakeholders; and
- Improve feedback mechanisms between beneficiaries and service providers.

## **IV. Scope**

7. The GAP will focus on transparency and accountability, conflict and peace building, and gender and social inclusion aspects of overall project implementation. The GAP Action Plan proposes actions for each of these issues, timeline for each action, and responsible agency for implementation.

## **V. Monitoring arrangements**

8. The GAP Action Plan will be monitored regularly against agreed actions which will be reflected in the project's progress reports and aide-memoires. The PMUs will be responsible for implementing program-specific actions included in the GAP matrix and will also act as a nodal point to co-ordinate with other agencies for effective implementation of the GAP Action Plan. The key person in charge of this GAP will be the Project Director. This action plan will also be monitored as part of the implementation support missions.

### AFSP: Governance and Peace (GAP) Framework

Issues	Focus areas	Actions	Responsible agency	Timeline	Early warning indicators
<b>Transparency and accountability</b>					
Access to information	Improving people's access to information about project activities	<ul style="list-style-type: none"> <li>• All project information will be available on project website and also through selected print and mass media outlets as appropriate</li> <li>• Area/location specific brochures, as appropriate, will be prepared (in Nepali) and distributed to stakeholders in relevant project areas</li> <li>• An IEC strategy will be finalized and implemented</li> </ul>	PMU	4 months, regular updating	
			PMU	4 months, ongoing	
Stakeholder participation and consultation	Responding to community needs and suggestions	<ul style="list-style-type: none"> <li>• RTI-consistency of project operations will be assessed every six months. An Information Officer will be designated to facilitate public's access to information</li> <li>• Project interventions on the ground will involve consultations with potential beneficiaries and other stakeholders in the community as appropriate</li> <li>• A grievance handling system will be put in place with tracking mechanisms for actions on public grievances/suggestions</li> <li>• Third-party verification in various forms (e.g., social audit, public audit and public hearing) of project activities will be undertaken to address fraud and corruption risks</li> <li>• Annual report will be published with information about progress in project outputs and outcomes and lessons</li> </ul>	PMU	6 months for finalization and 1 year for implementation	
			PMU	Every 6 months	
			DPSU, DADO, DLS, DHS	Within 6 months after effectiveness	
			PMU	Within 6 months after effectiveness	
			DPSU, DADO, DLS, DHS	Every year	
			DPSU, DADO	Ongoing	
PMU	Every year after the annual review				
MOAD, MOHP	Within 6				

Issues	Focus areas	Actions	Responsible agency	Timeline	Early warning indicators
		<p>learned.</p> <ul style="list-style-type: none"> <li>Roles and responsibilities of project entities at different levels will be defined clearly</li> </ul>	supported by PMU	months after effectiveness, to be followed up regularly	
<b>Conflict and Peace building</b>					
Conflict/Peace sensitivity	<p>Mitigating conflict-related risks</p> <p>Enhancing peace opportunities/peace dividends</p>	<ul style="list-style-type: none"> <li>Communications strategy will be developed to mitigate local level risks</li> <li>A grievance handling system with tracking system will be put in place for actions on public grievances/suggestions, and also timely corrective actions, if required</li> <li>One of the key criterion for the selection of project villages/sites will be underdeveloped areas or areas where there are significant underprivileged groups</li> <li>Strategies for improving group cohesion and communication will be included in the project guidelines for community mobilization and extension support to BGs</li> <li>Training will be given to social mobilizers on peace/conflict and ways to improve social cohesion and harmony</li> <li>Consultations will be carried with potential project beneficiaries (e.g.,</li> </ul>	<p>PMU</p> <p>PMU</p> <p>PMU</p> <p>PMU</p> <p>PMU supported by service providers</p> <p>DPSU, DADO, DLS, DHS</p>	<p>6 months for finalization and 1 year for implementation</p> <p>Within 6 months of effectiveness</p> <p>Within 6 months of effectiveness</p> <p>Within 1 year of effectiveness</p> <p>Within 1 year of effectiveness</p> <p>Within 6 m of effectiveness</p>	

Issues	Focus areas	Actions	Responsible agency	Timeline	Early warning indicators
Redressing Grievance	Mitigating conflict/promoting peace	<p>farmers) to enhance local support and ownership of the project</p> <ul style="list-style-type: none"> <li>• Prior to project implementation, consultations will be held with local stakeholders (e.g., district and VDC officials/members, local politicians, community groups, farmers organizations) to explain project details and build support</li> </ul> <p>Grievance Redressal Mechanism (GRM), with representation, mandate and procedures satisfactory to the Recipient and the World Bank, will be established in each community in such District where a Sub-project is planned or implemented.</p>	<p>DPSU, DADO, DLS, DHS</p> <p>DPSU</p>	Within 6 m of effectiveness	
<b>GESI</b>					
Participation of vulnerable groups, including women	Developing institutional capacity to strengthen gender and inclusion issues	<ul style="list-style-type: none"> <li>• A Livelihood and Social Inclusion Expert (LSIE) will be hired by the project to prepare guidelines and training manuals, and monitor progress of project interventions with respect to vulnerable people and gender related issues</li> <li>• Provisions for the GEED to oversee the planning and implementation of social inclusion and gender development related interventions will be defined and implemented.</li> </ul>	<p>Service Providers</p> <p>PMU</p>	<p>Within 6 months of effectiveness</p> <p>Within 3 months of effectiveness</p>	

Issues	Focus areas	Actions	Responsible agency	Timeline	Early warning indicators
Monitoring Inclusion	Enhancing project benefits to women and other vulnerable groups	<ul style="list-style-type: none"> <li>• The Vulnerable Community Development Framework will be implemented, as appropriate</li> <li>• The implementation of the Gender Development Plan will be duly monitored and reported on</li> <li>• IEC materials developed for the project will include actions to improve public awareness and consultations amongst vulnerable groups.</li> <li>• ‘Participatory Community Monitoring and Accountability’ will be included in the M&amp;E framework for the project</li> <li>• System for community score cards will be designed and implemented</li> </ul>	DPSU  MOAD  PMU  PMU  PMU	Within 3 months of effectiveness Within 3 months of effectiveness  Every year  Every year  Every year	
	Ensuring that traditionally excluded groups are participating and benefitting from the project		PMU  PMU supported by DPSU, DADO, DLS, DHS	6 months for finalization and 1 year for implementation  6 months  Every year	



## **ANNEX VII: Economic and Financial Analysis Agriculture and Food Security Project**

1. **The Project** aims to sustainably enhance food and nutritional security in vulnerable communities, covering (with possible overlapping) about 39,200 small farm households, 26,550 livestock households, and 45,000 households with adolescent girls, pregnant and nursing mothers and children, spread over 19 hill and mountain districts of the Mid- and Far-Western development region of Nepal. The project is specifically designed for: (i) improved food availability and secured access to food through increased productivity of agriculture; and (ii) improved nutrition security through diversified diet/nutrient intakes, and feeding/caring practices for the vulnerable communities. Total project cost (including contingencies) of \$58 M is shared by technology development and adaptation (16.1%), technology dissemination and adoption (54.2%), nutritional status enhancement (18.4%) and the rest (11.3%) for project management support.

2. **Major Sources of Project benefits:** A cost-benefit analysis captured the expected benefits from investments in agriculture technology management from development to adoption, covering major crops and livestock in the project area. Major sources of quantifiable benefits will come from: (i) increased source seed production (540 MT) to support quality certified seed production for sustaining the targeted seed replacement rates of 16% across major crops; (ii) increased adoption of demonstrated agricultural technologies by 39,200 small farm holders – due to FFS based participatory technology management strategies in a cropping system mode; (iii) diffusion of crop production technologies beyond direct project beneficiary farms covering about 19,600 farmers; (iii) increased crop productivity (over WOP) by 15 to 28% in cereals and vegetables-due to improved variety/seed quality and production technology; and (iv) increased livestock productivity (over WOP) in milk by 53%, goat meat by 45% and poultry eggs by 83% to benefit about 26,550 livestock farmers due to improved breeding, feeding and health management support through FFSs. The project targets 45,000 pregnant and nursing women and 54,000 children under 2-years of age for behavioral change towards nutrient rich balanced food, complemented with micronutrient supplements. Cost effectiveness analysis assessed these project investments to provide nutrition security for targeted HHs through behavioral change.

3. **Database:** The project's cost-benefit analysis is conducted separately for the main investment activities-technology development, adaptation, dissemination and adoption-together accounting for about 80% of the project costs (including the apportioned management costs), and then aggregated for the project as a whole. For aggregate analysis, all project costs are included. The analysis and 'with/without' assumptions are based on data compiled from multiple sources, such as; cost of production survey (2010/11) data covering major crops/districts representing hill and mountain districts of the Mid- and Far-Western development region of Nepal, technology adoption data covering major crops/practices, Nepal living standards survey 2010/11, and published Nepalese agriculture statistical information data.

4. **Analysis:** Project costs and benefits are estimated at 2012 prices over a period of 20 years with 12% as the opportunity cost of capital. Financial analysis is done at farm level using market prices. Using average farm model size of 0.65 ha, financial impact of the project interventions in

the project benefited households with an average family size of five is estimated. Economic analysis is done for the project investments after netting out the taxes and subsidies from the financial cost and benefit flows, for which appropriate conversion factors based on the import/export parity prices for the internationally traded inputs and outputs and standard conversion factors varying from 0.75 to 0.9 for others are used. Component 1 will identify appropriate technologies for development and adaptation. Component 2 will take these technologies forward through project led FFSs for their dissemination, adoption and diffusion to generate additional benefits for the project participating farm HHs. Incremental project benefits, expected from the adoption of production management technologies, as a result of component 1 and 2 interventions taken together, are quantified as follows.

### Quantification of Project Benefits.

5. The project-led agriculture benefits are quantified by using crop budgets for the project focus crops (paddy, wheat, maize, barley and potato with improved variety/seed quality and production technology) based on farm models for diverse AERs (mid-hills, lower and higher mountains). Livestock benefits are quantified through appropriate activity budgets formulated for buffaloes (milk), goats (meat) and poultry (eggs and meat) production models specifically for the project area. DALY (disability-adjusted life year) based impacts are used, based on the available published secondary data sources, to assess the cost-effectiveness of project-led community nutrition programs/interventions like behavioral change supported with diversified/increased diets/nutrient intakes and improved feeding and caring practices.

T-1 AFSP: Productivity Impacts

Technology Interventions	Unit	Productivity			
		BL	WOP	WP	Increase (WP/WOP)
Paddy	t/ha	2.6	2.7	3.3	22%
Maize	t/ha	2.2	2.4	3.0	25%
Wheat	t/ha	1.9	1.9	2.3	20%
Barley	t/ha	1.1	1.1	1.3	15%
Potato	t/ha	12.9	14.1	18.1	28%
Meat @	Kg	20	22	32	45%
Milk #	litres	720	795	1220	53%
Eggs \$	Number	55	60	110	83%

@ Kg per animal (12 month old); # litres per lactation (buffaloe, 60% and cows, 40% combined); \$ eggs per bird per year.

### Improved food availability

6. *Crop productivity benefits:* The project's phased intensive demonstration-cum-adoption support, to propagate crop production technologies, will result in the adoption of location specific technologies supported by quality seed in a sustainable way. About 52,250 grain and seed producing farmers, distributed across mid-hills (84%), lower mountains (14%) and higher mountains (2%) will get exposed directly to these technology interventions. Crop productivity realized by the technology adopters in the project area is projected to modestly improve by 15 to 28% for cereals (paddy, maize, wheat and barley) and 28% for potato (T-1).

7. Improved crop production technologies will be tested and extensively disseminated through a network of 5,700 demos in 11,400 farms organized and conducted through 1,900 crop and 190 seed FFSs. Crop demos will cover 1/4th of the FFS members. Remaining FFS members will get

adoption support with critical quality seed supply in order to achieve sustainable technology adoption levels during the project life in at least 75% of the area (or farmers) served by 2,090 FFSs. For this, the project was designed to ensure production of source seeds to sustain the adoption levels of improved variety and maintain the seed replacement rate at 16% during the project life. Currently, adoption levels for improved varieties are low-only 5% of the farmers adopt improved varieties in paddy and wheat, 10% in maize and 20% in potato cultivation. This provides opportunity to enhance the crop productivity through faster and wider adoption of improved varieties with optimum seed replacement rate, which is the main focus of component 2.

8. But technology adoption is a slow process due to the challenging agro-climatic and socio-economic environment of the project area. It is conservatively assumed that technology adopting farmers will take four to five years from the introduction of technology in their farms to realize full technology benefits in phases. The flow of technology benefits is aligned with the phased demonstration-cum-adoption-support approach proposed in the project design. Based on this approach, 75% of the project beneficiaries are expected to reach and sustain full adoption and productivity levels from Year-10 onwards for the crop technology interventions. The project is designed to spread the agriculture technologies, intensively through FFS model, which will be sustained to spread through diffusion to cover 19,600 more farmers. But this will happen slowly in phases, once the benefits from early FFSs have become visible by the end of project.

9. *Seed Impacts:* The project will put in place a system to potentially produce at least 1,200 MT of certified quality seed mainly covering paddy, maize, wheat and potato, supported by adequate source seed production from technology generation and adaptation component. With this, all the demand for quality seeds by the projected crop technology adopters as above to maintain the improved seed replacement rate at 16% within the project area will be fully met to sustain the improved productivity levels in the project benefitted farms. Additionally, the certified seed produced by the project can cover 17,300 more farmers outside the project benefitted HHs, at a conservative estimation of only 50% utilization. Evidence suggests that certified quality seed alone will improve the productivity by about 15% to 20%. Benefits due to the switch over to quality seeds and adopting optimum seed replacement rate by these additional farmers are captured through appropriate crop budgets and included in the analysis. Incremental benefits due to the seed impacts, over and above what is accounted for by the technology adopters above, is projected at \$1.5 M, at full development.

10. Farmers follow diverse cropping pattern in the project area. Maize dominates the cropping pattern in mid-hill region with 44% of the area followed by paddy (29%), wheat (34%) and potato (2%). In lower mountain region, paddy dominated with 57% of the cropped area, followed by wheat (29%) and maize (14%). Barley occupied 98% of the crop area followed by potato (2%) in the higher mountain region. Crop productivity also varied across the regions in the project area. Relatively, mid-hills are better resource endowed with higher crop productivity while least crop productivity is observed in higher mountain region. Crop budgets are therefore formulated for each of the three regions, crop benefits under with and without project are quantified by region and then aggregated. For full technology adopters, incremental financial gross margin per ha varied from \$30 for barley to \$300 for potato. Weighted across crops based on their area share, incremental annual gross margin for agriculture technology adopters is

estimated at \$75 per farm (Fig.1). Incremental benefits due to the adoption and diffusion of crop technologies is estimated at \$4.2 M at full development.

11. *Livestock productivity benefits:* The project will support livestock groups covering 44,250 livestock farmers. Project interventions will cover goat (70%), poultry (24%) and dairy (5%) farmers. Breed improvement, feed management and health

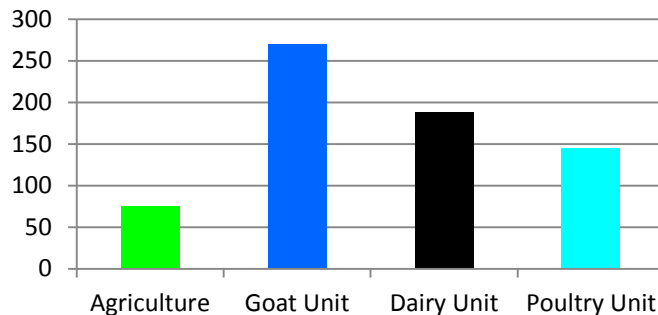


Fig.1 Incremental Gross Margin due to NAFSP (\$/farm)

care support are comprehensively integrated for delivery through FFSs to generate productivity impacts. Mixed farming is predominant in the project area. Based on the livestock ownership data in the project districts, rural HHs keeps one buffalo/cow, three goats and five poultry birds. Almost every rural HH has a piece of land to cultivate and about 60% of them maintain buffalo and more than 2/3rd keep goats and/or poultry birds. In case of goats, about 30,600 goat farmers will be targeted through group approach, covering 1,224 groups, both existing (76%) and new (24%) for implementing project interventions. All 1,224 groups will be supported with one improved buck each, which can provide service to all the goats of group members. About 330 pure bred bucks will be imported to upgrade the genetic quality of improved bucks to sustain the breed improvement programme during the project life. In case of poultry, 10,752 families will be targeted by the project through FFSs and supported with 64,512 improved birds to enhance the egg and meat production at household level. For dairy, 17,600 buffaloes will receive improved breeding service (through natural breeding by elite bull and artificial insemination) during the project implementation period. Improved buffalo bulls as well as semen will be imported and quality AI service delivered.

12. The projected livestock productivity increases (over WOP) are; milk by 53% (buffalo, 60% and cows, 40% combined), goat meat by 45% and poultry eggs by 83% for the project beneficiaries (T-1). Increased production is projected due to enhanced productivity and unit size as well as reduced mortality rates by about 25 to 50% across goats, buffaloes and poultry. Project led livestock improvement are expected to be sustained by at least 26,550 adopters (60%) during the project life. On an average, livestock beneficiary farmers in the project area are projected to gain US\$270 per goat unit, US\$188 per dairy unit, and \$145 per poultry unit at full development, aided by productivity enhancement, reduced mortality and unit size expansion (Fig-1). Incremental benefits from livestock interventions are projected at US\$6.2 M, contributed by goats (79%), poultry (15%) and dairy (6%), at full development of project development impacts.

13. *Homestead production benefits:* Project will support 1450 homestead food production groups benefitting targeted HHs. Technology for cultivating nutritive crops to meet home consumption needs and/or backyard poultry units will be disseminated to homestead food production group members. About 660 nutrition garden demos will be organized at village level. The member of the group will set up homestead garden, roughly equivalent to 100 sq.m of area in the project villages. Using the gross margin for a variety of vegetable crops from secondary cost of production and marketing margin survey for vegetables in Nepal, annual gross margin

from vegetables from the homestead food production groups including backyard poultry units is estimated at \$ 0.17 M.

### Food Production Impacts:

14. Crop technology development and adoption, covering major crops in the project beneficiary farms is projected to increase the annual production of food grains from 54,600 MT (WOP) to 67860 MT (WP), an increase of 24%, at full development. Similarly, annual potato production will increase by 2,920 MT. Productivity enhancement with improved breed/feed/health management of livestock farming by the project beneficiaries is projected to increase the annual production of meat (goat) by 373 MT, buffalo milk by 612,000 litres, and poultry eggs by 1,935,000.

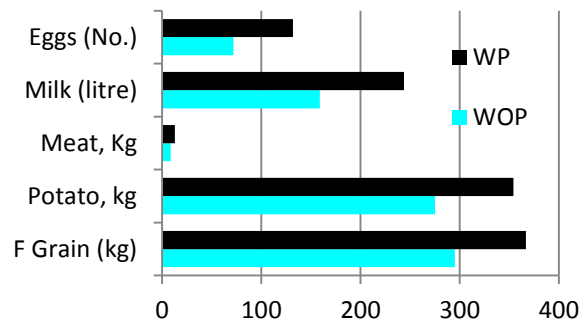


Fig. 2 HH level annual per capita food availability

15. Impact of project interventions will enhance the HH level availability of; food grains by 24%, potato by 29%, milk by 53%, meat by 45%, and eggs by 83% in the project benefitted HHs located in the remote places of mid-hill, lower and higher mountain regions as compared to WOP situation (Fig-2). As the unit size of livestock farming expands, annual per capita food availability (meat, milk and eggs) will further improve at full development. The project will specifically target 18900 poor and food insecure HHs to reduce their vulnerability and simultaneously improve their access to food through livelihood development. For managing seasonal food stress, the project will support setting up of self-sustaining 630 community managed grain banks to procure, store and distribute about 1,050 MT of food grains to 18,900 food insecure and most targeted HHs to overcome seasonal food stresses occurring for about 45 days in a year. Since vulnerability reduction benefits are not captured in this analysis, actual benefits due to livelihood enhancement investments will be much higher than what is estimated here.

### Income and Employment Impacts:

16. Project led crop and livestock production management will generate varying financial income impacts at HH level (T-2). For this analysis, distribution of HHs by their agriculture diversification status in the project area is utilized. Only 7% of the farmers do only crop farming. 43% of the farmers combine livestock (dairy and/or goat). 48% of the farmers are better placed in terms of diversifying into crop, livestock and poultry farming. Only 2% of the farmers are without lands, practicing livestock and poultry farming. Incremental gross margin is least (\$75 per farm) in crop farming due to small farm holding size and modest productivity targets considered in the analysis, given the challenging socioeconomic and agriculture typologies of the project area. With agriculture diversification, incremental gross margin will go up to \$304/farm for crop and livestock farming and further to \$449 per farm when poultry rearing is also added to the farming activities. Weighted by these distributions, average annual incremental financial

benefits for the average project beneficiary HH at full project development in PY-10 is estimated at US\$359. Annually 270,000 man days of on-farm employment equivalent to 900 additional farm jobs will be created by the adoption of demonstrated crop technologies by the project HHs. This will provide at least 225 man days of employment annually for each landless agricultural labor HHs, which accounts for 2% of the agriculture beneficiary HHs in the project area. This will generate US\$419 as annual farm wage income for about 1200 landless HHs in the project area. More importantly, such new farm employments will be sustained every year.

T-2 AFSP: Annual Incremental Financial Income Impacts (\$/farm)

Farm enterprises	Distribution	Gross margin
Crop farming	7%	75
Plus Livestock unit	43%	304
Plus Poultry unit	48%	449
Livestock and Poultry units	2%	374

### Improved Nutrition Security

17. The project area has very high rate of child malnutrition: half (49%) of children, under five years of age, are stunted and one third (39%) are underweight, which has increased the risk of morbidity and mortality. Maternal under nutrition is also a significant problem: 70% of the women of child bearing age are anemic and one in four (24%) women of reproductive age has chronic energy deficiency. Women and children also suffer from highest levels of vitamin and mineral deficiencies. One in four (24%) women of reproductive age has chronic energy deficiency. 63% of children under five suffered from chronic malnutrition that exacerbated curable diseases like diarrhea, measles and acute respiratory infection (ARI) from which a large number of children die every year. Nepal spends 5.3% of GDP on health, with a per capita health expenditure of \$ 18. By complementing with MoHP programs, the project interventions will enhance the efficiency of the impact of ongoing public health spending programs in minimizing the under nutrition in adolescent girls and young children under 2-years.

18. Taking advantage of the improved HH level food availability due to component 1 and 2 interventions (Fig-2) and secured access to food, the project will promote and support key nutrition interventions for enhanced nutrition security in project area through: (i) promoting nutritionally sensitive HH behavior and consumption of high-nutritive value agricultural food products by pregnant/nursing women and children under 2-years; and (ii) improving micronutrient intakes during critical life-stages by aiding the distribution of iron-folic acid (IFA) supplements to pregnant women and Micronutrient Powders (MNPs) for the home-fortification of young children’s diets.

19. The cost-effectiveness of the proposed interventions is assessed from the available national and international evidences (T-3). By end-project, the target is to achieve and sustain enhanced nutrition security for about 45,000 pregnant/ nursing women and 54,000 children through BCC strategies/MNPs/IFAs in the project villages. The project will prevent future malnutrition in the most targeted HHs as follows: Mean number of children ever born per women varies from 1.1 (age 20-24) to 5.0 (age 45-49) in the project districts, with a weighted average of 2.6 (Nepal Living Standards Survey, 2010/11). Hence, the project benefited 45,000 young women will have malnutrition free children in future. Number of children ever born to be benefited by this is projected to be 117,000 during the project life. Hence, a total of 216,000 women and children,

including the children ever born, will be benefited by enhanced nutrition security. Average cost per beneficiary comes to \$ 30. As against this, the cost of complementary food to prevent and treat moderate malnutrition among children, under 2-yr varied from \$ 40 to 80 per child. This treatment becomes much more resource-intensive at \$ 200 per episode per child in case of severe acute malnutrition. Improving nutrition contributes to productivity, economic development, and poverty reduction by improving physical work capacity, cognitive development, school performance, and health by reducing disease and mortality. The economic costs of malnutrition are very high – an estimated 2-3 % of GDP (US\$ 250 to 375 million) is lost every year in Nepal on account of vitamin and mineral deficiencies alone. The proposed nutrition interventions are therefore, cost-effective as prevention is preferable to treatment later.

T-3 AFSP: Cost Effectiveness of Nutrition Interventions

Project Interventions	Annual Cost \$/Child or women	Cost Effectiveness, \$/DALY
Community level BCC	7.5	53 to 153
Breastfeeding promotion		3-8
Vitamin-A Supplementation	1.25	6 to 12
		3 to 16
Micro nutrient powder	5.40	12.2 (Zinc); B/C Ratio 37:1 (Iron)
Iron Folic acid supplements	2.0	66 to 115 (Iron)

DALY-Disability-adjusted life year. Sources: Horton, S., et al. , Scaling Up Nutrition- What will it cost, The World Bank, 2010;. Nutrition in Nepal-A National Development Priority, The World Bank. 2010; Reducing Child Mortality With Vitamin A in Nepal; and Reducing Child Mortality With Vitamin A in Nepal, Case Study 4. Millions Saved: Proven Successes in Global Health, Centre for Global development, 2004

## Returns to Investment

20. Effective transfer, adoption and diffusion of location specific potential on-farm technologies covering agriculture crops and livestock has generated ERR of 20.4%, with a NPV of \$ 17.9 M. (T-4). For this analysis,

T-4: AFSP: Investment Analysis (USD Million, 2012 prices)

Sources of project benefits	ERR (%)	NPV	FRR (%)	NPV
Improved Food Availability	20.4%	17.9	19.4%	19.1
Over all Project	16.3%	10.6	15.4%	10.3

project costs of component.1 and 2 along with their share in the project management costs are included. The FRR for the project investments to improve the food availability at HH level is estimated at 19.4%. Overall project analysis, including all project costs of all components yielded 16.3% ERR and 15.4% FRR. Overall project analysis returned reduced ERR and FRR, due to the fact that while component.3 costs for nutrition enhancement investments are included here, the corresponding benefits, being not amenable for quantification, are not captured. However, nutrition enhancement investments are proved to be cost-effective on its own, as assessed elsewhere in the report, establishing the overall economic feasibility of the proposed project investments. Overall project ERR will be less than 20.4%, only if the nutrition enhancement investments return an ERR of less than 20.4%, which is most unlikely, given the cost-effectiveness of these investments in preventing future health impacts of moderate to acute incidence of malnutrition among the most vulnerable population. Annual incremental financial benefits (undiscounted) are projected at \$ 12.1 M, contributed by crop management (47%), livestock management (52%), and homestead production (1%).

## Sensitivity and Risk analysis:

21. Sensitivity analysis for the component 1 and 2 investments considered the impact of escalation in project costs, falling productivity and adoption levels, each by 20% from the base level and delayed implementation process. Across these sensitivity scenarios considered, ERR respectively came down to lower levels varying from 16.3% to 19% (T-5). The NPVs also came down by 20% to 53% from the base level. Adverse changes in both the costs and benefits by 25% each, brought down the ERR to 11.5%. Switching value analysis indicated that ERR will come down close to 12% with 60% increase in project costs or 38% fall in project benefits. Returns to investment are highly sensitive to changes in benefits than costs.

T-5: AFSP: Sensitivity analysis (USD Million, 2012 Prices)

Sensitivity Scenarios	NPV	ERR (%)
Base Level	17.9	20.4
Falling short of projected targets		
<i>Agriculture Productivity by 20%</i>	8.5	16.3
<i>Crop Technology Adoption by 20%</i>	14.4	19.0
<i>Livestock Productivity by 20%</i>	12.4	18.0
Escalation in project costs by 20%	12.1	17.0
Delayed Implementation by one year	11.6	16.8
Change in base level Costs and Benefits		
<i>Costs at 125% and Benefits at 75%</i>	(1.2)	11.5
Switching Values		
<i>Costs increased by 60%</i>	0.3	12.1
<i>Benefits fall by 38%</i>	0.0	12.0

22. **Risk analysis** considered up to 20% change in project costs (increased) and project benefits (decreased) and evaluated their joint impact on ERR. Simulated ERRs, based on multiple runs, ranged from 10.9 to 15.8% with a coefficient of variation of 11%. Expected ERR, estimated by the risk model at 13% is considered reasonably stable, since the probability of ERR exceeding 12% level is 90% as predicted by the risk model (T-6 and Fig.3).

T-6 AFSP Risk Analysis Summary (\$ Million)

	NPV	ERR
Expected value	3.8	13.0%
Standard deviation	2.1	1.4%
Minimum	-4.2	10.1%
Maximum	8.9	15.7%
Coefficient of variation	0.55	0.108
Probability of -ve outcome	10.1%	0.0%

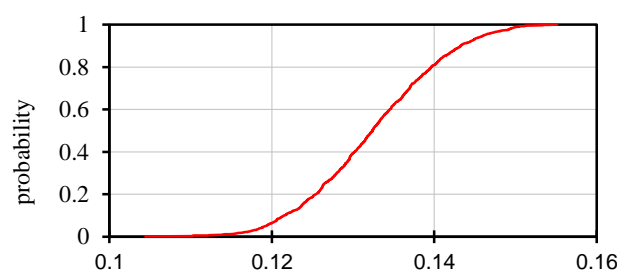


Fig. 3 NAFSP: Cumulative Distribution of ERR

## Equity and Gender Impacts.

23. The projected beneficiary profile covering women (more than 75%), landless households (2%), and small farm holders (70% with less than 1 ha) in the project area will promote equity in the distribution of incremental project benefits. Crop technology adoption will impact resource poor farmers-accounted by 30% very small land holders (less than 0.5 ha) and 40% small holders (0.5 to 1 ha). About 2100 HHs in the project area will be benefitted by women friendly labor saving technologies. Livestock technology interventions will benefit landless HHs as well as very small land holders, (over 95% of them are women), to enhance their income substantially through agriculture diversification as highlighted in T-2. Vulnerability reduction impacts will benefit about 18900 very poor HHs. Nutrition enhancement impacts will benefit 45,000 pregnant



and lactating mothers and 54,000 children (less than 2 years of age). By project design, women will account for more than 3/4th of all project beneficiaries, which will be higher if additional on farm employment opportunities for women are also considered. Besides, projected additional on-farm employment generation will enhance and sustain the wage income for 1200 landless HHs. Overall, flow of incremental project benefits will be in favor of most targeted HHs and women in particular.



