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# KNOWLEDGE-BASED INTEGRATED SUSTAINABLE AGRICULTURE AND NUTRITION (KISAN) PROJECT

SEED EXPERT CONSULTANT REPORT — AUGUST 11 TO SEPTEMBER 4, 2014  
CONTRACT NUMBER AID-367-C-13-00004

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# KISAN PROJECT

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## DISCLAIMER

The author's views expressed in this publication do not necessarily reflect the views of the United States Agency for International Development or the United States Government.

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## ACRONYMS

AEC	Agro Enterprise Center
CBO	Community-Based Organization
CEAPRED	Center for Environmental and Agricultural Policy Research, Extension and Development
COP	KISAN Chief of Party
CSISA	Cereal Systems Initiative for South Asia
DADO	District Agriculture Development Offices
DCOP	KISAN Deputy Chief of Party
DEPROSC	Development Project Service Center
ED	Executive Director
FINGO	Financial Intermediary Non-Governmental Organization
FTF	Feed the Future
GON	Government of Nepal
IFPRI	International Food Policy Research Institute
KISAN	Knowledge-based Integrated Sustainable Agriculture and Nutrition Project
LSP	Local Service Provider
MFDB	Micro Finance Development Bank
MFI	Micro Finance Institution
MOAD	Ministry of Agriculture Development
NARC	Nepal Agriculture Research Council
NGO	Non-Governmental Organization
NRS	Nepali Rupees
OPV	Open Pollinated Varieties
PPP	Public Private Partnership
SEAN	Seed Entrepreneurs Association of Nepal
SWOT	Strength, Weakness, Opportunity, and Threat
USAID/Nepal	United States Agency for International Development in Nepal
USG	United States Government
WI	Winrock International

## I. EXECUTIVE SUMMARY

The objective of the assignment was to work with the KISAN team in supporting the proposed Seed Summit and to identify activities that strengthen KISAN's engagement with private sector seed companies, supporting the overall goal of increasing seed production for farmers in targeted districts. The consultant helped the Seed Summit Working Group to finalize four thematic areas: Policy Environment; Research and Development (R&D)/Support Services in Seed Production; Seed Quality and Marketing; and Seed Enterprise Development. The consultant also developed a detailed concept note, with input from the technical committee chair.

The consultant also worked with the project team to identify activities that KISAN can implement to strengthen private seed sector engagement. Understanding the size and structure of the seed industry was crucial to identifying these activities. The team consulted with various industry stakeholders to assess the opportunities as there is limited data on the overall size of the seed business.

The main challenges for the seed sector in Nepal are: 1) absence of a country-level interface between the private and public sectors to improve understanding of each other's perspective; 2) primarily focus on use, production, and sale of open pollinated varieties (OPV), which restricts the growth and profit margins in the business; 3) inadequate access to finance; 4) no private sector research – policy does not encourage private sector research so they are dependent on public sector research; 5) very limited branding and marketing in the private sector across all levels of companies; and 6) limited capability to check on quality at the production/factory-level making it difficult for seed businesses to capture value.

The consultant also worked with the KISAN team to explore the role played by other donor agencies and funders to explore opportunities for synergies, and to ensure that potential KISAN activities do not duplicate efforts. Most of the international agencies are focusing on building capacity of farmers groups to produce seed.

The consultant suggested that it would be useful to create an enabling environment to facilitate growth in private seed sector enterprises in addition to working directly with the seed enterprises. To strengthen the enabling environment, the consultant proposed several interventions which could be supported through grants. First, establish a Seed Industry Council as a neutral platform where stakeholders can discuss the important issues and policies to improve understanding of each other's needs. Second, strengthen the secretariat of the existing seed association of Nepal making it more proactive, for instance to highlight industry needs and develop position papers that can help policy makers drive the necessary reforms to develop the seed industry.

KISAN engagement with small, medium, and large private seed enterprises in the project area should focus on building their capacity to increase business, and identify key areas of constraints and support (through grants) for enabling business growth. Recommendations to strengthen seed enterprises/companies include building their capacity to develop business plans, deliver quality products, and capture value through improved marketing and communication. Three specific interventions were developed and recommended for KISAN private sector engagement: developing the breeding and entrepreneurial capacity within the seed industry and improving bankers' agribusiness skills (see Annexes 2, 3, and 4 for details).

Though there is substantial need to support the private seed sector in Nepal, KISAN should also continue to support the activities that help create a business-friendly environment including KISAN's existing work on the Seed Summit. KISAN's work in strengthening the existing seed industry association and establishing a seed industry council with members to help develop actionable policies will have synergistic effects on growing the private seed sector. At this stage in the private seed industry, it is essential that KISAN improve the understanding of the larger seed business landscape by working closely with identified companies to develop their business plans. Once these companies understand the actions they must take in order to grow, they will require support in technical areas like breeding, seed production and quality control, and marketing and branding. This will help in focusing on the major barriers to growth and showcase examples of success before KISAN ends.

## **II. INTRODUCTION**

To improve food security, USAID/Nepal's Knowledge-based Integrated Sustainable Agriculture and Nutrition (KISAN) Project is improving farmer access to improved quality seed. Farmers have a very low seed replacement rate and few use improved varieties, primarily because farmers lack access to quality improved seed. Farmers do not typically invest in good quality seeds as they cannot always trust the seeds they purchase from their local agrovet. KISAN is increasing farmers' access to improved quality seed by 1) increasing the production of improved quality seed, 2) increasing seed companies reach to farmers in KISAN districts, and 3) training farmers on how to raise quality seeds. Based on a recent modification to the project's scope, USAID has requested that KISAN strengthen the private seed sector to produce more seed in KISAN districts and sell more seed through KISAN and other agrovets.

Winrock International engaged the consultancy services of Mr. Gurbinder Gill to assess the private sector in order to identify ways to strengthen their business and expand production and distribution to KISAN districts. In addition, Winrock requested Mr. Gill to work with the team on the proposed Seed Summit.

The specific activities as per the Terms of Reference (TOR) were to:

1. Support the Seed Summit.
2. Work with targeted private sector companies to expand reach.
3. Identify why Indian companies are not investing in Nepal.
4. Other duties as needed.

On arrival in Nepal, and after discussions with the KISAN COP and team, the consultant focused on the following activities during the trip:

- Support the Seed Summit.
- Work with the KISAN team to identify activities to strengthen private seed sector engagement and also meet with some of the seed sector facilitators like the UN Food and Agriculture Organization (FAO), World Bank, International Food Policy Research Institute (IFPRI), National Banks, and seed companies to:
  - Understand existing capacity building programs and grants being implemented by other stakeholders to strengthen the private seed sector; and
  - Understand the overall development of the seed sector.

See Annex I for the complete TOR. A detailed agenda of the trip is included in Annex 6.

### **III. SUPPORT THE SEED SUMMIT**

The Government of Nepal (GON), in association with farmers groups, seed industry associations, international donor organizations, and USAID-supported programs KISAN, CGIAR through CIMMYT, and others, will conduct a seed summit in early 2015 to explore ways to improve farmers access to increased quantities of quality seed.

In Nepal, more farmers use informal seed sources than formal sources. The informal seed system is characterized by farmers producing and preserving their own seeds, exchanging and selling with/to neighbours, and the informal/illegal import of registered and unregistered seeds.

The formal seed system is characterized by vertically-organized production and distribution of tested and released/registered varieties by public and private organizations using agreed upon quality control mechanisms. It is comprised of different phases of the seed cycle: breeder, foundation/source, and certified and improved seeds. In Nepal, the formal seed system includes seed production by Nepal Agriculture Research Council (NARC)/Department of Agriculture (in Nepal, DOA) farms and stations,

contract seed production by farmers for National Seed Companies (NSC), Private Seed Companies (PSC), NGOs like CEAPRED, LI-BIRD, and FORWARD, and imports (SEAN, agrovets, importers, and distributors). The Community Based Seed Production (CBSP), District Self Sufficiency Seed Programme (DISSPRO) could be considered semi-private (supported by the government, INGOs, and NGOs) along with international institutions/donors' collaborating projects involved in seed sector development. Both formal and informal seed systems are not mutually exclusive but are interlinked and can complement each other for continued selection and maintenance of preferred varieties. Currently, the formal seed sector accounts for 11.6% of seed transactions (88.4% are in the informal sector) in Nepal<sup>1</sup> for rice, wheat, and maize.

Recognizing the challenges, the GON has developed a long-term strategy, "Seed Vision 2025", which is an ambitious plan that envisions the rapid involvement of the private sector in seed production and distribution and a substantial investment to develop the sector. The Seed Vision 2025 authors note that some of the most significant challenges to be addressed are the lack of adequate varieties suitable for different ecosystems, excessive use of non-endorsed and untested exotic breeds (for example for hybrid maize, hybrid rice, and vegetables) due to an open border with India, inability to assess the quality of seeds in the market, low access and availability of high quality source (foundation and breeder) seeds, inadequate facilities for seed processing and storage, lack of proactive marketing mechanisms, and farmers' low seed replacement rate. Seed Vision 2025 also aims to export seed for some commodities, which could require considerable investment and higher involvement of the public and private sectors and donor agencies.

In order to prepare Nepal to meet the goals set forth in the National Seed Vision 2025, the proposed Seed Summit is being organized to gather stakeholders on one platform to highlight the challenges and discuss the way forward.

## **A. CONCEPT PAPER AND THE THEMATIC AREAS**

The consultant participated in technical group meetings and also in small group meetings with the KISAN team to discuss the main issues, develop the objectives of the Summit, define thematic areas, and suggest additional participants. The team identified four main thematic areas:

- Policy Environment
- R&D/Support Services in Seed Production
- Seed Quality and Marketing

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<sup>1</sup> SQCC 2012. Annual Report 2011-12. Seed Quality Control Center, MOAD, Kathmandu.

- Seed Enterprise Development

The consultant along with the Seed Summit Technical Working Group Chair, Dr. Hari Upadhyaya, helped develop the concept paper and short write-ups for two of the thematic areas: Seed Quality and Marketing and Seed Enterprise Development (see sections A.1 and A.2). The consultant also developed specific guidance and a template for the thematic papers to ensure that writers accurately capture the outcome for each of their sectors in a more organized and quantitative manner. The consultant will review the final thematic papers and work with the KISAN representative to revise them as required. Based on the progress of the Seed Summit activities, KISAN may ask the consultant to return to Nepal (if required); if not, the consultant will be expected to return to Nepal to attend the Seed Summit.

### **A.1 SEED QUALITY CONTROL AND MARKETING**

The main focus of this theme will be on the critical assessment of the two primary pillars in the value chain: seed quality control and marketing. Currently, seed quality control is limited to ~12% of the market. For Nepal to produce high quality seeds and effectively market them, it needs to focus on quality control, marketing, marketing research, information systems and forecasting, product sourcing, new product development, and distribution in addition to seed production.

### **A.2 SEED ENTERPRISE DEVELOPMENT**

Strengths of both public and private sectors can be capitalized on for developing a competitive seed industry. In Public Private Partnership (PPP), the role of public sector is primarily facilitation and support from the broader policy perspective and the private seed sector invests in activities throughout the seed value chain from R&D of new varieties/hybrids to marketing and distribution. The key issues to be addressed are: what will make Nepal and its seed industry attract initial capital from the local banks at a reasonable cost and then how to scale up to bring in investments from international and local large businesses/companies.

The concept paper along with the modalities and way forward has been submitted to GON Ministry of Agriculture Development (MOAD) for adaptation and finalization of the thematic papers.

See Annex 5 for the detailed concept note along with the thematic areas and guidance to capture the final outcome along with the planned modalities.

## **IV. IDENTIFY ACTIVITIES TO STRENGTHEN KISAN'S PRIVATE SEED SECTOR ENGAGEMENT**

In the original TOR, one of the primary consultant activities was to work with targeted companies to expand their reach. After discussions in country, the consultant and the KISAN team decided that the consultant should identify key activities where KISAN can play a role in strengthening private seed

sector engagement in addition to meeting with some of the targeted seed companies. In order to ensure that the consultant and the team plan KISAN’s approach to private seed sector initiatives, the consultant met with all the key stakeholders who are involved in strengthening the PSCs and further explored the seed industry market dynamics.

## A. APPROACH TO ACHIEVE THIS OBJECTIVE

The consultant worked with the KISAN team to understand what is required in creating an enabling environment for private seed sector enterprise growth. The team organized meetings with all of the major stakeholders. The stakeholders were divided into subgroups (see Table I).

**Table I. List of stakeholders interviewed**

<b>Seed Companies</b>	<b>Other Donor Agencies</b>
<ul style="list-style-type: none"> <li>• Large Businesses/Companies: CG/DUGGAR/GOLCHA</li> <li>• Small/Medium Companies: Unique, Panchkanya, Dhangarhi</li> <li>• Seed Cooperatives/NGOs: Seed cooperatives in Kanpur, Jasrol, and Kanchanpur/CEAPRED</li> </ul>	<ul style="list-style-type: none"> <li>• FAO</li> <li>• World Bank and Pact</li> <li>• SAMARTH</li> </ul>
<b>Banks/Enabling Organizations</b>	<b>Government Offices/Trade Associations</b>
<ul style="list-style-type: none"> <li>• ACE Development Bank</li> <li>• NABIL Bank</li> <li>• DISSPROS</li> </ul>	<ul style="list-style-type: none"> <li>• CDD/SQCC/NARC</li> <li>• FNCC/AEC/SEAN</li> </ul>

The purpose of these meetings was to understand the Nepal seed market structure and size, and to explore the roles they play in the seed system. The different viewpoints were necessary and informative as each stakeholder has a vested interest in strengthening the seed sector. Summaries of discussions with the various stakeholder subgroups are in the following sections.

## B. SUMMARY OF DISCUSSIONS WITH THE SEED COMPANIES

**Large companies:** The consultant, accompanied by Mona Sharma (KISAN/Nepal), met with the CG, GOLCHA, AND DUGGAR Group. These companies had tried to enter the seed business in the past, however the low profit margins in cereal OPVs did not justify the return on investment and effort. Only the CG Group is now setting up a processing unit and planning to work on vegetable hybrids seed production and marketing. They also plan to do some work on wheat seed but that is primarily to utilize the processing facility’s full capacity.

**Small and medium companies:** The consultant met with two small seed companies in Dhangadi (Unique Seed and Panchkanya Seeds). Like all of the seed companies, these also source breeder seed from NARC and are in the cereal OPV business. The small business size is primarily due to lack of access to capital, both for infrastructure and working capital. Panchkanya Seeds hired a part time breeder who helped them to carry out maintenance breeding for the breeders' seed which they had acquired from NARC. The consultant also met with Dr. Budhathoki from Gorkha Seed. Dr. Budhathoki is a breeder himself and was part of the NARC team which bred the only hybrid type of tomato so far (Srijana I). They are carrying out their own research and have developed two new tomato hybrids which have recently been commercialized.

### **C. SUMMARY OF DISCUSSIONS WITH DONOR AGENCIES**

**World Bank/FAO:** The consultant and a KISAN representative met with Mr. Purna B Chhetri, Senior Rural Development Specialist at the World Bank. They work closely with the GON focusing on improving public expenditure efficiency and accountability. In the seed sector, the World Bank-funded Project for Agriculture Commercialization and Trade (PACT), with the GON, helps farmers groups and cooperatives engage in profitable market-oriented production, and improves access to markets through the provision of technology and information services, critical public infrastructure, and linkages to agribusiness. Mr. Y K Karki, Project Director, briefed the consultant on project progress: they have already supported 22 small seed companies, community-based seed producer groups, and cooperatives in upgrading their processing machinery through a matching grant. These are primarily cooperatives but some of the seed companies have also benefitted from similar interventions.

At the FAO office, the consultant met with Dr. Shyam Paudel who said that FAO in Nepal is more focused on working with the GON to improve the Seed Replacement Rate (SRR) for the cereals. They support the GON initiatives for adoption of technology in the rural areas by strengthening the Farmer Field Schools and also support farmers' cooperatives in building their crop/quality inspection.

**SAMARTH:** The consultant met with Tim Cook, SAMARTH, who described their work across Nepal to improve the pro-poor performance of rural sectors leading to increased incomes for smallholder farmers and small scale entrepreneurs. Their focus is to increase the market access for small farmer groups and entrepreneurs.

### **D. SUMMARY OF DISCUSSIONS WITH BANKS/ENABLING ORGANIZATIONS**

**Banks:** One of the major factors limiting small farmer cooperatives and groups' growth is access to capital at competitive costs. If they have to get a better rate then they have to follow the collateral route. The lead banks reach the small seed companies/farmers cooperatives through Micro Finance Development Banks (MFDB) or Financial Intermediate NGOs (FINGO) as they do not have access and

manpower to service these loans directly. To understand their perspective, the consultant, along with the KISAN team, met with Mr. Suyog Shreshta, Acting Chief Executive Officer, ACE Development Bank and Mr. Sanjay Nepal, Senior Relationship Manager, NABIL Bank. The following are the primary issues raised during the discussion:

- They are willing to work directly with farmers cooperatives, provided they have some kind of credit guarantee support.
- Both banks, particularly NABIL Bank, are willing to work in the project area but need to improve their understanding of the project and context and develop a specific program. KISAN staff will follow up with them.

**DIPPROS:** During the discussion, DIPPROS representatives said that if the farmers/cooperative groups are provided guidance to meet the requirements of the cooperative federations in terms of the appointments of key positions, conducting regular elections, and maintaining financial records, they can negotiate with some C Class banks to provide loans at competitive rates.

## **E. SUMMARY OF DISCUSSIONS WITH GOVERNMENT AGENCIES**

The consultant met with Dr. Mahendra Khanal, Senior Seed Development Officer at SQCC, Mr. Dila Ram Bhandari, Program Director, Crop Development Directorate and Vegetable Breeding Team of NARC.

- The Crop Development Directorate and SQCC are more focused on the formal seed sector, but they do acknowledge the need for strengthening the private seed enterprises, particularly in the area of quality assurance.
- NARC vegetable breeding has increased their focus on developing hybrid vegetables so as to meet the targets defined in the National Seed Vision. The real challenge for them is the shortage of qualified manpower.

## **F. SUMMARY OF DISCUSSIONS WITH TRADE ASSOCIATIONS**

**FNCCI** (Federation of Nepalese Chamber of Commerce and Industry): The consultant met with Mr. Hari Bhakta Sharma, Vice President. FNCCI is the apex trade body, but is not very active in agriculture and the seed sector in particular. Mr. Sharma is very supportive of working on any supportive policy for encouraging investment in the seed sector. They have promoted Agro Enterprise Center (AEC) to focus on agriculture related issues.

**AEC:** The consultant met with Mr. Pradip Maharjan, Executive Director of AEC, the agriculture branch of FNCCI. AEC works across the agriculture sector and is also supportive of the seed sector. AEC can

facilitate building linkages with companies across the border and work with the government for policy reforms.

**SEAN** (Seed Entrepreneur Association of Nepal): The consultant met with Mr. Durga Adhikari, General Secretary, SEAN, an association of seed agrovets, entrepreneurs, and seed companies. They are actively involved in all seed-related committees in the government and donor community. They have about 150 members; about 50 members have established a seed company by the name SEAN Seed Co.

The complete list of stakeholders met during this assignment is attached in Annex 6.

These interactions helped illuminate the current situation and also how the various stakeholders are working towards strengthening the private seed sector. During the assignment, the consultant worked with the following key people from KISAN: Bill Collis, Dr. Purshottam Mainali, Praveen Baidya, Mona Sharma, and Laxmi Prasad Sharma. This also helped the consultant understand KISAN's current role, and what role KISAN intends to play in strengthening private seed sector enterprises.

## **G. OUTCOME OF THE DISCUSSIONS WITH RELEVANT STAKEHOLDERS**

The approach was to review what KISAN is currently doing and then identify how the current engagement can be further strengthened. With this objective in consideration, the consultant divided the whole engagement in the following two subsets:

- Create enabling environment for private seed sector enterprise growth through:
  - Strengthening the industry association;
  - Establishing a mechanism to highlight the industry needs with the government; and
  - Increased interface and collaboration between the private and public sector.
- Work with small, medium, and large private seed enterprises in the project area to:
  - Build capacity to increase business;
  - Grow beyond the current level of business state; and
  - Identify key areas of constraints and support (thru grants) for enabling business's to grow.

## **V. SEED INDUSTRY STATUS**

Below is a brief overview of the private seed sector in Nepal.

Private seed businesses can be divided in two parts:

1. Cereal Seed
2. Vegetable seed

Companies involved in the seed business fall into three categories:

1. Large seed companies– investigated why they are no longer interested in investing; profit margins do not justify return on investments since Nepal companies are currently only processing OPV cereals
2. Medium private sector companies and cooperatives – understand their challenges and constraints as these businesses are not scaling up and there are few new entrants to the seed industry
3. Small scale companies and cooperatives – explored what is stopping them from scaling up

Based on the information reviewed and gathered from the discussions with the stakeholders, there are currently over 20 registered seed companies, 1,500 seed entrepreneurs, 300 DISSPRO Farmers Groups, 50 DFID/RIU and NGO supported seed producer groups, and 200 HMRP-CBSP groups involved in seed production and marketing.

## A. SIZE OF THE SEED MARKET

There is limited accurate data available for the commercial seed market other than what is available for the formal seed sector in cereals. Based on secondary information and discussions with the people from seed businesses, the consultant estimated the seed market size (see Table 2).

**Table 2. Size of the seed market (cereals and vegetables)**

Crop			Salient Features
<b>Cereals</b>			
<i>OPV</i>	<b>Qty (Mt)</b>	<b>Value (Min USD)</b>	<ul style="list-style-type: none"> <li>• Out of the total volume of 32,000 Mt, hybrids are only 4,000 Mt but value-wise they have equal share</li> <li>• About 10 main companies handling &gt;500 Mt with total value of NPR 50 crores</li> <li>• Business being annual in nature and high working capital needs restricts the growth of the seed companies</li> <li>• Primarily OPVs but hybrids are getting popular in maize and rice</li> <li>• Hybrid market over next five years is projected to be 8,000 Mt for maize and 4,000 Mt for rice</li> </ul>
Rice	14,000	7.22	
Maize	2,500	1.29	
Wheat	11,500	7.11	
Total	28,000	15.62	
<i>Hybrid</i>			
Rice	2,000	8.25	
Maize	2,000	7.22	
Total	4,000	15.46	

**Table 2. Size of the seed market (cereals and vegetables)**

Crop			Salient Features
			<ul style="list-style-type: none"> <li>All hybrids are imported (approx. 50% reach through illegal channels)</li> <li>OPVs yields per hectare are 4-5 Mt in rice and 3-4 Mt in maize</li> <li>Hybrid yields per hectare are 6-8 Mt in rice and 8-10 Mt in maize</li> </ul>
<b>Vegetables</b>			
OPV Local	1,000	2.58	<ul style="list-style-type: none"> <li>1,000 Mt (50.5%) of the requirement is met from domestic production of OPVs other than a small quantity of tomato Srijana Hybrid</li> <li>Approx. 8 companies are involved in local OPVs</li> <li>Balance 950 Mt (49.5%) of the requirement is met through imports of which nearly one third are hybrids</li> <li>Substantial quantity of imported seeds are not registered in the country</li> <li>Very few companies involved in vegetable</li> </ul>
OPV Import	650	3.55	
Hybrid Import	300	24.74	
Total	1,950	30.67	

Exchange Rate: USD = 97 NPR

It is quite evident that public sector (government and government-supported semi-private) contribute nearly 75% of cereal OPVs, while private contributes nearly 100% of hybrids. Similarly, public sector contributes only 30% of vegetable OPVs compared to 70% by the private sector. The private sector contributes nearly 95% of vegetable hybrids. See Table 3 for additional details.

**Table 3. Contribution (in percent) of public and private sector in the formal seed system**

Seed System	Public Sector	Private Sector	Remarks
Cereal (OPVs)	75%	25%	Primarily local other than some rice varieties from India
Cereal (Hybrids)	0%	100%	India, China
Vegetable (OPVs)	30%	70%	60% local, 40% import
Vegetable (Hybrids)	5%	95%	India, Taiwan, Korea, Japan, China, Thailand, Italy, New Zealand

Note: There is little published information on the size of the informal markets. These estimates are based on industry consultation carried out in person or via telephone.

## B. RESEARCH IN THE PRIVATE SECTOR

An important factor to consider when examining the seed system in Nepal is that the private sector is conducting little to no research. During the assignment, the consultant only met one seed company,

Gorkha Seeds, which has been promoted by a breeder, and did not come across any companies that have hired breeders.

NARC is the primary entity producing breeder seed (BS) and foundation seed (FS), with some provision for FS production to NSC and 16 registered authorised private seed companies. Certified and improved/label seeds are produced by NSCL, STC, PSC, and seed production programs supported under DISSPRO, CBSP, CSPP, and Community Seed Banks (CSB). They all produce seeds using individual farmers, farmers groups, and cooperatives. In the absence of any technical resources with the private/cooperative system, there are likely significant quality losses in the production system.

The quantity of breeder and foundation seeds being produced exceed the current demand. In 2012-13 the demand for rice BS was 7.2 Mt while the supply was 29.9 Mt; demand for FS was 268.3 Mt while supply was 551.7 Mt. Similar trends were found in wheat and maize. The imbalance between supply and demand is largely a result of poor planning. There is complete mismatch between what farmers need and what BS/FS is being produced by the public system.

**Table 4. Major private sector institutions and their roles in seeds**

<b>Private Sector Agency</b>	<b>Role</b>
Seed Entrepreneurs Association of Nepal (SEAN)	Association of the seed distributors: works on capacity building for quality seed production, seed regulations, and policy feedback to government on existing laws, regulations, and procedures
Private Seed Companies (PSC)	Cereals OPV: Seed production, processing, conditioning and marketing Cereal Hybrids: Import and distribution Vegetables OPV: Seed production, processing, conditioning, and marketing Vegetable Hybrids: Import & distribution
SEAN Seeds	Seed company promoted by some members of SEAN association Primarily in vegetable seeds Recently entered in development of the maize hybrid
Seed retailers (Agrovet)	Primary channel to sell seed to the farmers (formal & informal)
Seed growers (seed groups and cooperatives)	Get registered in district agriculture offices through CDD/SQCC, seed production planning, and contract signing with seed buyers.
Non-government organizations, community-based organizations (CBSP, CSPP, CSB), civil society organizations (NGO/CBO)	Implement programs to support seed growers for quality seed production, processing, and marketing Support research for variety development and

**Table 4. Major private sector institutions and their roles in seeds**

<b>Private Sector Agency</b>	<b>Role</b>
	seed production in partnership with GON
Financial institutions (banks, cooperatives, insurance companies)	Role is to provide short- and long-term credits required for seed industry development – not adequately catering the seed business development initiatives
Public universities and seed laboratories	Role is to develop human resources for seed related disciplines, conduct trainings on seed science and technology, and provide seed testing services to seed growers and seed traders Both need to review to meet the changing technical and business requirements of the seed sector

*Source: Industry Consultation*

### **C. OBSERVATIONS ON THE SEED INDUSTRY**

Based on discussions and meetings with large, medium, and small private seed enterprises, the consultant provided the following summary analysis of the current situation.

- Large seed enterprises
  - Low profit margins due to the focus on the use, production, and sale of OPVs with little to no production of hybrid seeds in Nepal
  - Profit margins do not justify the return on investment and therefore the seed business is not viewed as a growth engine in the business portfolio
  - Scared of being singled out in case of seed failure due to climatic reasons
- Medium seed enterprises
  - Primary player in the cereal varieties business
  - Working capital needs restricts growth
  - Lack of production and marketing/branding initiatives
- Small seed enterprises
  - Primarily in some form of cooperative
  - Practice seed multiplication either for corn or hybrid tomato
  - Lack of proper storage, production, and marketing/branding initiatives

## **D. MAJOR CONSTRAINTS FOR THE ENTIRE SECTOR**

- No country-level interface (interaction, collaboration/cooperation) between the private and public sector to understand each other's perspective
- Primarily focused on or involved in the use, production, and sale of OPVs which restricts the growth and profit margins in the business
- Lack of access to finance
- No private sector research – policy does not encourage private sector research, dependent on public sector research
- Very limited level of branding and marketing in the private sector across all levels of companies
- Limited capability to verify quality at the production/factory level

## **VI. THE WAY FORWARD FOR KISAN – CREATE ENABLING ENVIRONMENT**

Creating an enabling environment for seed sector expansion is very important to improve seed production and the overall performance in the sector. KISAN can create and strengthen the enabling environment by:

- Strengthening the industry association;
- Establishing a mechanism to highlight the industry needs with the GON; and
- Increased interaction and collaboration between the private and public sector.

Based on interactions with seed industry stakeholders and an understanding of the local context, the consultant made recommendations for several interventions that KISAN could undertake.

### **A. SEED INDUSTRY COUNCIL**

Seed industry councils are required for the private and public sectors to work in close partnership. Currently there is very little interaction or cooperation at the national level. The seed council can facilitate better understanding within both sectors of the overall industry as well as provide a platform to build a strong working relationship. The consultant suggested that KISAN help establish two seed industry councils:

- Cereals Seed Industry Council
- Vegetables Seed Industry Council

The consultant suggested that each council have a team of 10 people – a mix of private and public sector representatives and policymakers. The councils should meet at least twice a year (not in Kathmandu) so that progress on the agenda can be measured and subsequently updated and pushed forward. The councils should also have an effective secretariat that could initially be under KISAN while these councils move towards self-sustainability.

The key objectives are:

- Get the leaders out of their day-to-day work environment so that they can more effectively brainstorm and collaborate
- Provide a neutral platform where members can discuss important issues and policies
- Informal engagement with a structured agenda where stakeholders can gain a better understanding of each other's needs

If KISAN leadership moves forward with this activity, the consultant can work with the team to develop the scope, define the cost, help in recruiting, and lead the bi-annual meetings. A rough estimate of the cost is around USD 100,000 over the two years. This grant can be made to identified National Chamber of Commerce; however it is very important is to keep the leadership under KISAN.

## **B. STRENGTHENING THE EXISTING SEED ASSOCIATION**

Currently there is one major industry association, the Seed Entrepreneurs Association of Nepal (SEAN), which has about 150 agrovets as their members. Some of the small seed companies are also members. Some of SEAN's members also established a seed business, SEAN Seed Company.

The association has elected officers but not an effective secretariat. Associations need strong secretariats in order to be productive. The consultant suggested that KISAN support the staffing of this association for a period of two years.

SEAN would also benefit from an Executive Director (ED), typically a retired bureaucrat who understands how the government system works and helps the industry to articulate their requirements in a manner that the public sector understands. Most of the time industry associations end up meeting government officials when issues are at a critical stage which often leads to direct confrontation. The role of the ED is to smooth the interaction between the industry and policymakers in a proactive manner. The ED also develops industry position papers with the help of his or her team which can then be used by the policymakers to make decisions. An Assistant Director Technical supports the ED in technical matters and in developing the industry position papers, and develops the training/capacity building programs for the industry.

The activities that this Secretariat could undertake include:

- Create and continuously update the association website
- Organize the following activities on regular basis:
  - Yearly National Seed Conference
  - Increase association memberships
  - Industry policy issues and interface with policymakers
  - Organize industry papers – status and needs
  - Plan and execute yearly calendar for capacity building training for members
  - Organize database on Nepal’s seed industry, which can be referenced for growth and policy issues
  - Showcase the strength of Nepal’s seed industry to national/international investors and other external stakeholders

Based on the budget, KISAN could also plan for sending these two resources (SEAN and seed industry council) to two international seed conferences (National Seed Association of India annual conference or Asia Pacific Seed Association annual meeting) for international exposure. The consultant suggested that KISAN also support a database project which will begin developing the seed industry database, a significant need for the overall seed business in Nepal.

The cost of this intervention for KISAN is estimated to be USD 100,000. These funds could be dispersed as six-month grants, based on performance and progress. This SEAN team will require an advisory team from its membership in the initial period to scope out, hire, and set up the secretariat and approach needed to achieve desired objectives. If guided and managed properly, this can become a self-sustaining activity for SEAN within a couple of years.

<b>Activity/Hiring Cost</b>	<b>Cost (USD)</b>
Executive Director	37,500
Assistant Director	25,000
Research Assistant	12,500
Website Development and Maintenance	5,000
Participation in International Conferences	10,000
Project Database Development	10,000
<b>Total</b>	<b>100,000</b>

## VII. THE WAY FORWARD FOR KISAN – DIRECT ENGAGEMENT WITH THE PRIVATE SECTOR

The consultant suggested that KISAN base its approach to engaging private sector entities on the size of the business. Though there are a few approaches or activities that will apply to all private sector actors, interventions for large, medium, and small seed companies should be tailored to the respective size.

### A. LARGE SEED COMPANIES

**Target** – to have an established business in three years across the value chain

The consultant identified CG Group as a potential company to work with as they have already made some investments in developing vegetable hybrids and registering them and setting up a seed processing plant. Their focus is mainly on hybrids with small production of wheat OPVs to utilize the plant's full capacity.

Based on discussions and understanding of their business, the major challenge CG Group has is the absence of a business plan due to a lack of understanding how to develop an enterprise that takes local and international markets/context into consideration.

They have recently restarted the business after exiting from the pure wheat/rice OPV subsector about two years ago. The consultant suggested working with them, as the company has the capacity to scale up and has demonstrated capacity in other business areas outside of agriculture in Nepal.

The consultant suggested that KISAN could actively engage CG Group by:

- Providing guidance on developing a business plan, both commercial and for R&D
- Exposing them to successful commercial seed businesses by facilitating connections or a visit to an Indian seed company
- Establishing connections with potential partners based on the crops they plan to produce and build backward linkages with the farmers for seed production in the targeted areas
- Strengthening the breeding capacity (see Annex I for details)
- Assisting in setting up a quality laboratory and providing technical staff to manage the seed laboratory on a cost sharing basis

The last two interventions apply to large, medium, and small seed enterprises; a common approach will be cost effective for KISAN. Developing a business plan is also common for each category; however these will vary significantly depending on the size of the business.

## **A.1 LARGE END USERS WHO NEED GOOD SEED FOR QUALITY PRODUCTION**

**Target** – build backward linkages – lentils

Currently, the volume of lentil seed being produced commercially is small, but the overall lentil business is large and growing. KISAN is already exploring ways to strengthen project beneficiaries by working with the large processors. Mona Sharma, who is leading this effort for KISAN, and the consultant met with Golcha, Dugar, and Nimbus groups to evaluate the opportunity to build backward linkages in the project area, a potentially useful initiative to develop the lentil seed business.

- The main purpose of these backward linkages is to find a market for quality produce achieved as a result of high quality seeds in the project area.
- The groups like Dugar and Golcha are interested in a partnership (these groups would purchase high quality lentil produced by KISAN farmers groups using improved seeds).
- This will help the project farmers to earn better prices for their produce.
- This will also help the seed companies in the project area to maximize their margins and encourage more formal seed sector involvement in lentils.

Mona Sharma has taken lead in establishing these linkages and finalizing the MOUs for lentils with Dugar and another for corn with Nimbus. Once these agreements are signed, KISAN should develop a detailed actionable business plan for this intervention and a KISAN advisory team should monitor this on a quarterly basis. The consultant can then work with the KISAN team to develop sustainable business plans for these activities.

## **B. MEDIUM SEED COMPANIES**

**Target** – Develop business, quality, and marketing capabilities in two years

- Identified Panchkanya and Unique in Dhangadi area and two others can be selected from Nepalganj
- All of these companies are currently in cereals (wheat/rice/maize/lentils)

Based on the meetings and analysis of the current situation, the consultant suggested the following interventions for this subsector.

### ***Business Planning and Development - Capacity Building***

Medium seed enterprises have the potential to become bigger players in Nepal. In order to achieve this, their management teams need training and/or mentoring in business. The consultant suggested that KISAN assist selected seed companies in business development activities, particularly in designing a strategic plan for three to five years, which will move Nepal closer to the Seed Vision 2025.

Suggested Deliverables:

- Business plan, with guidance from KISAN, summarizing main challenges and opportunities for selected seed businesses.
- 3-5 year strategy documents for selected seed businesses along with financial projections.
- Two one-on-one coaching sessions each year for continued support as well as assistance with crucial activities.

### ***Financial Planning Capability Development***

Medium seed enterprises are primarily involved in production and sale of cereal OPVs – this restricts the growth and profit margins in the business. They are also not functioning at their full potential because of issues with access to finance; in particular, working capital needs are restricting their growth. They also require marketing and branding efforts to expand their reach.

The consultant suggested KISAN take steps to facilitate partnerships between medium-sized seed enterprises and local financial institutions. The consultant met with some of the key banking institutions and found that banking institutions do not have a clear understanding of the seed/agriculture sector's financial needs. KISAN could implement a program to improve bankers' understanding of agribusiness with a Bankers Agribusiness Skills Enhancement (BASE) course (a brief outline is provided in Annex 3).

This activity will also involve meeting with the main financial sector players in Nepal, and assessing their interest and criteria for investing in seed companies. KISAN should work with selected seed businesses to develop a plan for accessing finance and making them investment ready. According to the current analysis, these businesses need training on proper financial bookkeeping. KISAN could also explore alternative financing arrangements, such as credit guarantees, depending on the financial services market. This intervention will help the seed businesses address their working capital needs, and may also result in capital expenditure investments which will further boost sector growth.

Suggested Deliverables:

- Report summarizing findings from top lenders and a formal approach to meet financial requirements and maintain accounts in an organized, accurate manner. This is very important before approaching the banker for working capital and investment loans.
- Mentor or guide selected seed businesses and assist them in putting together a financial package.

### ***Seed Production Capacity Building***

These production and distribution companies need a comprehensive training package on seed production techniques. This information is required across the seed subsectors. KISAN could develop a program similar to the breeding intervention approach or could develop the program with the help of a specialist.

Suggested Deliverables:

- Training material.
- Design program using a training of trainers model.
- Conduct at least four trainings in next two years, just prior to production season.

### ***Marketing and Branding***

Medium as well as small seed enterprises have very low levels of marketing and branding. Marketing is crucial to increasing product awareness and sales. Currently, most medium and all small seed enterprises have not worked on any brand recognition, which KISAN can address through training on marketing, promotion, and branding. The consultant suggested that KISAN conduct two trainings per year with 10-20 seed businesses companies/channel partners as participants. The training will help the companies develop/design their marketing strategies/initiatives; the participants would leave the training with a branding identity and marketing plan.

Suggested Deliverables:

- Design a marketing and branding training toolkit.
- Deliver the training to invited seed companies. The training will result in participants designing a marketing plan.

Small marketing grants issued to seed enterprises could further assist in improving and expanding market outreach. Following the above training, the companies could apply for a grant from the marketing fund to implement the plan they designed in the training. The consultant suggested that the grants range in size between \$10,000 and \$20,000, depending on the size of the seed company (total allocation for these grants of USD 100,000). In two years, about ten companies could benefit.

### ***Build Breeding Capability***

There are no breeders in the private sector, which lacks the technical capability to produce quality BS. The consultant suggested providing grants to two universities to develop Plant Breeding 101 courses with assistance from an international breeding consultant. See Annex 2 for additional details.

### ***Quality Control***

The current approach to quality control and systems in Nepal is very poor. The consultant suggested KISAN assist in setting up a quality laboratory and providing a technical staff to manage the seed laboratory on a cost sharing basis. A grant of about USD 20,000 per identified company will help achieve this objective.

### ***Scientific Storage***

In most medium-sized companies, there is no scientific storage for the germplasm and any seed that is not sold during the sowing season. The storage rooms and techniques need improvement. The consultant suggested that KISAN partner with an international seed storage expert and develop courses with the local universities as suggested for the breeding initiative and:

- Provide training on scientific storage; training conducted by an expert; and
- KISAN can support each of the identified businesses plus others – there are about 20 medium-sized seed companies in Nepal. A grant for hermetic storage bags for at least FS material will contribute towards improved products and productivity.

## **C. SMALL SEED COMPANIES**

The small seed enterprises are primarily in the form of cooperatives and have low entrepreneurial capacity. These enterprises are mainly involved in multiplication of corn or hybrid tomatoes. The operations are characterized by low productivity, and a lack of marketing, branding, and storage technology.

### ***Entrepreneurial Capacity Building***

Small seed enterprises need business development focusing on increasing quality and distribution in order to increase sales, profits, and potential for scale up. Along with providing support in developing their business plans, KISAN could also:

- Increase understanding of the seed industry so that participants can fill/capitalize on gaps in the industry; and
- Explore ways to improve the distribution system as well as quality control of seeds during the training.

Over two years, the consultant recommended that KISAN organize four refresher courses for trainers.

Suggested Deliverables:

- Mentor/guide at least four cooperatives over the next two years.
- Entrepreneurship training material/toolkit, integrating participatory adult learning methodologies.
- Training of trainers, conduct trainings and four refresher trainings.
- Training evaluations, and update training materials in year 2, as needed.

#### *Alternative approach for developing entrepreneurial capacity*

A holistic approach could be implemented in a slightly different manner, as shown in Annex 3. A detailed intervention for small seed enterprises, and for the entire seed sector, could use strategies and templates including:

- 5 Why's/Customer interview/ Validation Road Map;
- **Human Centered Design** strategies to better understand the perspective of each party, and then cater normal business mapping to their needs;
- Strategies include a path such as: self-documentation, then community self-discovery, then interviews, and actionable next steps, which in this case would involve business assessment; and
- **Business Model Canvas** to help participants think of key partners in their chain of going from idea to business.

The KISAN team would need to determine how to design and implement this approach and develop a budget.

#### ***Seed Production Capacity Building***

These production and distribution companies need a comprehensive training package on seed production techniques, similar to what medium-sized enterprises need. This information is required across the seed subsectors. KISAN could develop a program similar to the breeding intervention approach or could develop the program with the help of a specialist.

- Training material.
- Design program using the training of trainers model.
- Conduct at least four trainings in the next two years, just prior to production season.

### ***Marketing and Promotion***

Small seed enterprises have no marketing exposure. The consultant suggested that KISAN support the identified four cooperatives by hiring a sales and marketing person who can be trained by an identified seed industry expert so that he or she can work with the identified cooperatives/CBSPs to help them develop their marketing plan, branding, and outreach campaign to promote products/increase sales. Small grants of USD 10,000 per cooperative should be given for two years for marketing and promotional materials.

### ***Quality Control***

The current approach to quality control and systems in Nepal is very poor. The consultant suggested approach is that KISAN assist in setting up a quality laboratory and providing a technical staff to manage the seed laboratory on a cost sharing basis. A grant of about USD 20,000 per identified company will help achieve this objective. Technical staff based in these laboratories should provide guidance for CBSPs and provide support to other farmers groups working in the area.

### ***Scientific Storage***

In most small companies, there is no scientific storage for the germplasm. However, since they handle smaller quantities and have smaller overall operations, these companies do fare better than medium-size enterprises (regarding storage). The consultant suggested that KISAN:

- Provide training in scientific storage, to be conducted by an expert
- Support each of the identified companies plus others. A grant for hermetic storage bags for foundation seed material will contribute towards improved products and productivity.

After an evaluation and with the storage expert's advice, small storage grants ranging around USD 10,000 could be made to the identified companies.

## **VIII. OVERALL RECOMMENDATIONS AND NEXT STEPS**

Though there is substantial need to support the private seed sector in Nepal, KISAN should also continue to support the activities that help create a business-friendly environment including KISAN's existing work on the Seed Summit. KISAN's work in strengthening the existing seed industry association and establishing a seed industry council with members to help develop actionable policies will have synergistic effects on growing the private seed sector. At this stage in the private seed industry, it is essential that KISAN improve the understanding of the larger seed business landscape by working closely with identified companies to develop their business plans. Once these companies understand the actions they must take in order to grow, they will require support in technical areas like breeding, seed

production and quality control, and marketing and branding. This will help in focusing on the major barriers to growth and showcase examples of success before KISAN ends.

Table 6 summarizes the consultant's recommendations.

**Table 6. Summary of Recommendations**

<b>Activity</b>	<b>Recommendation</b>	<b>Possible Resources</b>
Supporting the seed summit	The progress on appointing the thematic paper writers is still pending with the government.	The consultant can contribute to the thematic area of Seed Enterprise Development as the KISAN team had proposed to the technical committee that Gurbinder Gill can work on this. Once the decision is finalized, the thematic group writers can undertake this activity. Given the experience gained over the last couple of months by the consultant in Nepal, most of this can be done in the home country and about a week's time in Nepal, which can coincide with the other activities. The consultant can also support the KISAN team from the home country to review the papers written by other thematic writers.
Establishing the Seed Industry Council	Finalize the concept note along with the KISAN team and initiate recruitment for the council.	The consultant can develop the detailed concept note along with the planned activities/ expected roles and responsibilities for the council (this can be done in the home country). Carry out a half-day kick-off workshop for this council to align all the members on the key objectives and deliverables. The consultant will require a week's time in Nepal in order to work with the KISAN team to carry out this activity.
Strengthening the existing seed association	Showcase to the existing association the benefits of the strengthened secretariat. Assist the association in designing a yearlong work plan for the	The National Seed Association of India's annual conference is scheduled on February 14-15 in Agra, Delhi. This will be a good opportunity to send the current

**Table 6. Summary of Recommendations**

<b>Activity</b>	<b>Recommendation</b>	<b>Possible Resources</b>
	secretariat.	association leadership to attend and learn more about the seed association in India. The consultant can accompany them and help in organizing meetings with the leadership of Indian Seed Industry Association. Once the recruitment is done for the Secretariat, the consultant can spend one week with the association team and develop a yearlong actionable plan which can be reviewed periodically.
Business Planning and Development Capability	Two-day workshop with the participants from all the three sectors on the basics of the business plan development and coach them to develop their initial business plans. KISAN will guide these identified companies in developing the business plans. Then work for two months with each of the identified companies a one-on-one basis and guide them in improving the business plans.	The consultant can organize a two-day workshop and later spend time with individual companies after two months to review and improve on what they have developed in the interim period.
Bankers Agribusiness Skill Enhancement Training	Identify the resources to carry out the training workshop with the leading bankers in Nepal, Design the workshop and align all the stakeholders, Conduct workshop.	The consultant can help identify the resources for this training and can play the role of the coordinator for smooth execution of the workshop. Recent experience with the Nepal seed industry and its stakeholders will help the consultant to create an effective design and execution.
Marketing and Branding capacity building	A two-day workshop across all the categories. KISAN team to help them develop marketing and promotion plans. Periodic review of the identified companies to help them improve	The consultant can work along with a marketing resource to deliver the workshop. After two months, the consultant can visit each of the identified companies to help improve the plan and provide guidance on effective

**Table 6. Summary of Recommendations**

<b>Activity</b>	<b>Recommendation</b>	<b>Possible Resources</b>
	and execute the plan.	implementation.
Build Breeding capacity	Identify a global breeding resource who can work with NARC/University to develop the Seed 101 program.	The consultant can help KISAN to identify such a resource.
Seed Production/Quality Control/Scientific storage Capacity building	Identify global resources who can work with the local seed companies.	The consultant can help KISAN to identify such resources.

### ***KISAN External Resource Requirement and Budget***

The four key external resources will be required:

1. Strategic business planning resource, with experience in marketing/promotion and supply chain;
2. Breeding resource/expert;
3. Seed production agronomist; and
4. Seed quality control expert.

Budgets can be developed in consultation with KISAN after discussing the level of support they intend to provide. If KISAN decides to use the approach suggested in Annex 2 for the breeding intervention, which will help the companies KISAN wants to work with, build the capacity of public sector institutions, and train a larger number of people, then each of these interventions will cost around USD 200,000 over the next two years.

## **ANNEX I: KISAN TERMS OF REFERENCE**

**POSITION TITLE:** Short-Term Seed Expert

**LOCATION:** Kathmandu, Nepal with travel to field, possible work from home base and/or India

**LENGTH:** 3 weeks in Nepal with another two weeks from home between August and January

### **INTRODUCTION:**

The USAID/Nepal funded KISAN project is improving food security in twenty hill and Terai districts in the western parts of the country. The project is starting its third of five years. One objective is to increase the availability of quality inputs. Many farmers lack access to quality seed - both improved varieties and hybrids. With higher seed replacement, farmers could greatly increase their yields. KISAN is focusing on improving the private sector's role in producing and supplying quality seed to farmers in the western districts.

### **OBJECTIVE OF THE ASSIGNMENT:**

The objective of the assignment is help KISAN increase the production of seed for farmers in KISAN districts. First, the consultant will help plan for the Seed Summit working group and assist KISAN and the concerned GON technical committee prepare thematic papers required for the seed summit. Second, the consultant will work with targeted private sector companies to strengthen and expand their ability to produce quality seed and sell it to farmers in the western regions. Based on the initial assessment, the priority areas of focus would be to 1) increase working capital available for seed companies 2) strengthen seed companies so that they can grow and scale up their business 3) assess why Indian companies haven't invested in Nepal. Third, the consultant will help design RFAs for grants to support the private sector seed production.

### **ACTIVITIES AND TASKS:**

- I. *Support Seed Summit.* The GON with support from KISAN USAID, CIMMYT, SMARTH and others will conduct a seed summit in at the end of 2014 to explore ways to increase seed production in Nepal. While in Kathmandu, the consultant will meet with the key stakeholders GON (MOAD, NARC,DOA), Donors/Implementers (USAID, CSISA, SMARTH, KISAN and others), NGOs (CEAPRED) and private sector players (SEAN and others as necessary) to develop the objectives of the Summit, define thematic areas (see attachment of suggested ideas) and suggest additional participants. With the Seed Summit Technical working Group, the consultant will help develop short write-ups for each thematic area and identify experts to develop papers. Upon returning home, the Consultant will review full papers written on the thematic areas. The consultant will be expected to return to Nepal at the end of the year to attend the Seed Summit.

- Details of this work may change depending on outcomes or decisions made by the various committees involved in preparation of the Seed Summit.

2. Work with targeted private sector companies to expand reach.

The consultant will work with existing seed companies to develop strategic plans which will include:

- a. Assessing their capital needs, weakness in their companies, and challenges in production and identify ways to address their problems which may include linking them to mentors. The mentors could be the successful industry leaders from seed / pesticide/ feed sectors.
- b. Establishing linkages between the producers based in the Terai with the seed producers groups in hills for production of winter seed for Terai region which will facilitate the following:
  - Create linkages between hill seed groups and Terai producer groups taking advantage of seasonal differences in production.
  - Create Linkages with the seed companies both domestic/global by offering them the trial services/facilities through these producer companies. This will be a source of revenue and also the group will be able to see the performance of all the best seeds.
- c. Assess Infrastructure needs in terms of processing/storage/mechanization which could be provided initially by linking to existing government schemes or by way of grants from KISAN
- d. Marketing and promotion – KISAN can help them develop the advertisement and promotion material for the first two years. Here also the control group should be identified and the gains should be measured quantitatively for the micro seed enterprise which are supported.

3. Identify why Indian companies are not investing in Nepal.

4. Other duties as needed.

Deliverables:

- Seed Summit TOR
- Thematic Areas with write ups
- 3 Strategic plans developed for seed companies
- Assessment of Indian seed companies that could work in Nepal with an assessment of why they haven't invested already.

## **ANNEX 2: BREEDING CAPACITY BUILDING ACROSS SEED INDUSTRIES IN NEPAL**

**Breeding :** Although the level of breeding initiative will vary according to the size of the company, there is little to no breeding currently implemented by private seed sector players (other than one or two companies). However, there is a basic need for maintenance breeding in all seed companies. Furthermore, the general education and knowledge of breeding outside NARC and universities is lacking. These institutions must be encouraged and guided to set up training programs to meet this industry need.

A grant could be made to two universities in Nepal to establish a training program, Plant Breeding 101 (focus on maintenance breeding), for the seed industry with the following potential activities:

- Develop a course and training material for Plant Breeding 101, which can be delivered in groups to the seed companies.
- KISAN could serve as a mentor initially for two years after which universities should be able to sustain the program by itself by making the program fee-based. Once the program showcases its potential, companies will likely pay to participate in the program.

Within two years, KISAN/University should organize at least four one-week Plant Breeding 101 programs across the seed companies.

The proposed International Breeder should be from the industry, and should have experience directing, handling, and training the breeders as well as in facilitating breeding programs in commercial seed companies.

**Budget:** Estimated cost over two years is USD 200,000

### **Structure outline**

International Breeding Consultant – 15 days evaluation trip to Nepal

Development of the course material – 30 days in native country + 15 days from a national consultant to help the International Breeding Consultant

Four visits of 20 days each for the international consultant over the next two years: 5 days for training + 4 days of travel + 3 days for in-country travel and preparation + 8 days working with identified seed companies. A local consultant should accompany the international consultant for the eight days spent with companies to observe his or her approach and be a resource for the companies as-needed.

### **Structure of the program**

In addition to providing guidance for the identified seed enterprises, KISAN should develop a five-day training program along with the local partner and administer. At least four such programs should be organized over the next two years.

**Other programs that can be similarly designed and per requirement are in the areas of:**

1. **Entrepreneurial Capacity Development** for small and medium cooperatives which are involved in the seed business.
2. **Quality Control Systems and Infrastructure Development** across the seed companies in Nepal.
3. **Seed Business 101** for existing and potential players.

## ANNEX 3: SEED INDUSTRY AND ENTREPRENEURSHIP

### Background

The seed industry in Nepal has many actors or entities from producers to processors to consumers. While these different actors may influence the quality or variety of seed in other regions, in Nepal, they are not acting on the entrepreneurial opportunity to develop, sell, and invest in higher yielding and more effective seed varieties. This can lead to an economy that is less secure, flexible, and productive overall.

### Needs

- Entrepreneurial training and capacity building for seed producer cooperatives and distributors/sellers;
- A visual, cross-cultural way to describe the potential and value of R&D investment in seeds;
- Clear examples of success in seed innovation elsewhere;
- Focused understanding of the bottlenecks in the “seed innovation” pipeline; and
- Local understanding of the marketing trends and consumer decisions when it comes to buying seed.

### Proposed Actions

- Put together a tailored entrepreneurial training program that involves actual scenarios and simple cost analysis;
- Leverage local groups, [Seed Entrepreneurs' Association of Nepal](#) members, and farmer cooperatives to interview key stakeholders on both the industry and consumer side; and
- Deliver clear templates for strategizing seed innovation and the value behind such practices that can be beneficial for both producers and seed distributors.

### Mechanisms for Completing Actions

- Using strategies/templates from the UC Davis Entrepreneurial Academies, including:
  - 5 Why's
  - Customer interview
  - Validation Road Map
- Utilize [Human Centered Design](#) strategies to better understand the perspective of each party, and then cater normal business mapping to their needs.

- Such strategies include a path such as: self-documentation, community self-discovery, interviews, and actionable next steps, which in this case would involve business assessment.
- Utilizing the [Business Model Canvas](#) to help participants think of key partners in their chain of going from idea to business.

### *Summary*

It seems that the issue is not lack of opportunity but lack of foresight or perspective to have that opportunity come to fruition with regards to processors and producers of seed in Nepal. This leaves multiple viable strategies ranging from entrepreneurial training to human-centered design interviews.

## **ANNEX 4: BANKERS' AGRIBUSINESS SKILLS ENHANCEMENT**

Programs aimed at improving bankers' agribusiness skills have been conducted with USAID in many countries; Nepal could benefit from this type of program. KISAN could spearhead this effort and run four such programs over the next two years. Though this report focuses on the seed sector, the course should help bankers in the seed sector as well as agribusiness in general.

The success of these courses depends on how they are structured for sectors where KISAN is working and interventions that will help the private sector grow. In the current situation, potential sectors for these courses could be seed and fresh/processed fruits and vegetables.

### **Objective**

The objective of the training course is to improve bankers' understanding of and train them how to successfully appraise agribusiness projects, particularly in the seed sector. The course follows the systems approach to improve understanding of agribusiness and does not focus on providing technical information. The objective of the training program will be to launch the alumni network, familiarize the participants of the commercial potential of the sector, sensitize them to the need for such training in taking advantage of this potential, and encourage them to actively support the alumni network.

### **Training approach**

The training needs to follow an interactive approach incorporating lectures, case studies (both International and Indian), and field trips to successful agribusinesses that have developed effective backward and forward linkages to ensure trainees have a clear understanding. Entrepreneurs and experts in specific areas such as venture finance and quality control in agribusiness should be invited to speak to the participants and share their experiences.

### **Participants**

The first course should target decision makers, such as the leadership team of the banks. About 15 of such officers belonging to commercial banks and equity financing institutions should attend.

The participation of the senior management team in the first course is necessary to educate them on the needs of agribusinesses and to get their support to execute such initiatives at their banks. The subsequent three courses can be structured for managers who are actually going to appraise the projects.

**Budgets:** Budgets should be developed following a decision by KISAN leadership.

## ANNEX 5: NEPAL SEED SUMMIT – RATIONALE AND SCOPE

### I. RATIONALE

#### A. Current Status and Potential of Seed Subsector

Nepalese agriculture is mostly smallholder, subsistence farming dominated by cereal crops, which account for over 90% of the cropped area and 46% of the agricultural GDP. About 94% of the 3.7 million agricultural holdings with an average size of 0.7 hectare grow cereals. About 60% of these holdings do not produce enough to meet their household food requirement for the whole year.<sup>2</sup> Among food deficit households, 44% face food shortage for 4-6 months, 23% for 7-9 months, and 15% for 10-12 months.

There is a wide gap between the actual and potential crop yields at the farm level.<sup>3</sup> A significant part of this gap is attributable to a lack of adequate access to improved seeds. Current seed replacement rate (SRR) in main cereals (rice, maize, and wheat) is low ranging from about 9% in rice and wheat to 11.5% in maize. In vegetables, the SRR is higher – about 75% – largely due to the use of hybrid seeds. Informed sources suggest that use of improved seeds alone can increase yield by at least 20% in cereal crops. But the supply of improved seeds is severely constrained. Presently, the share of formal sector in the entire seed subsector is only about 12%.

While most hybrid seeds in Nepal are imported, the share of domestic production in open-pollinated (OP) seeds varies according to the crop. In vegetables, domestic production meets a large part of the requirement for OP seeds. But in cereals, it accounts for only a small part of the requirement. For example, in 2010, the quantity of OP maize seeds produced in the country was 1,592 tons compared to the requirement of 6,132 tons estimated on the basis of an SRR of 25%.<sup>4</sup> The requirement of hybrid maize seeds, all of which are currently supplied via import, is projected to grow from 1,275 tons in 2010 to 3,750 tons in 2025.

The large and growing gap between the domestic seed supply and demand offers a great opportunity for Nepal's seed subsector to contribute to increasing crop productivity by enhancing seed availability and supply at the local level. In addition, the vast ecological and climatic diversities that exist within the country provide uniquely favorable natural conditions to produce a wide range of seeds for both domestic and export markets. There is a huge, untapped potential for expanding commercial seed

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<sup>2</sup> Central Bureau of Statistics (2012b), National Sample Census of Agriculture, 2011/12, Government of Nepal, Kathmandu.

<sup>3</sup> Based on discussion with agricultural scientists

<sup>4</sup> Ministry of Agriculture Development (2013), Seed Vision 2025, Government of Nepal, Kathmandu.

production as a profitable business – especially in rural areas where alternative economic opportunities are rare or non-existent – and as a means to promote economic growth, improve livelihoods, and reduce poverty in those areas.<sup>5</sup>

Commercial seed production is an excellent local employment opportunity for rural youth who have been migrating to urban areas and foreign countries for work. For example, an average of 1,237 workers left Nepal each day during the first half of 2013/2014.<sup>6</sup> As a result of this labor outflow, agriculture is becoming increasingly dependent on women and aged population and rural areas are facing a serious labor shortage especially during peak seasons.<sup>7</sup> The potential long-term negative social and economic impacts of this migration may outweigh the short-term positive impacts (inflow of remittances).

## B. Policy and External Support in Seed Subsector

In recent years, the policy and external support environment in Nepal has become increasingly supportive for the growth of the domestic seed subsector. The Government of Nepal (GON), with support from the Asian Development Bank and a range of other donors, drafted a long-term Agriculture Development Strategy (ADS) to replace the Agricultural Perspective Plan (1995-2015). The ADS focuses on four strategic pillars of agriculture-led economic growth: governance, productivity, commercialization, and competitiveness. Improvement in the supply of quality seeds is critical to the achievement of ADS's goal. In Nepal's present context, increased commercialization is not possible without increased competitiveness and the latter is not possible without increased productivity. And an increase in productivity will not be possible without improving the supply of quality seeds/breeds.

Following the introduction of a new Seed Act, the GON has passed a new Seed Policy and Seed Regulations. This has paved the way for the implementation of the new Seed Act, which empowers the private sector and non-governmental organizations (NGOs) to play a wider role in seed subsector development, including seed production, inspection, testing, and accurate labeling. GON has also formulated the Seed Vision 2025 with the objective to increase crop productivity, raise income, and

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<sup>5</sup> The experiences of the Vegetable Seed Project of CEAPRED and Hill Maize Research Project of CIMMYT support this conclusion.

<sup>6</sup> Asian Development Bank (Feb 2014), Macroeconomic Update, Volume 2. No. 1, Manila

<sup>7</sup> According to a study (CEAPRED, 2012) conducted in five districts of Terai, about 20% of the households reported labor shortage throughout the year, whereas about 80% experienced this problem during peak agriculture seasons. An overwhelming majority (80%) reported labor shortage during transplanting and harvesting of rice. The labor shortage reportedly caused delayed transplanting (in some cases, no transplanting at all) and delayed harvesting, both resulting in significant crop loss.

generate employment through self-sufficiency, import substitution, and export promotion of quality seeds.

Over the past few years, the seed subsector has received increased support from bilateral and multilateral development partners, which are funding projects with one or more components focused on seeds. Such partners include the Asian Development Bank funding the “High Mountain Agriculture and Livelihood Improvement” and “Raising Incomes of Small and Marginal Farmers” projects, the International Fund for Agricultural Development funding “Improved Seeds for Farmers” and “High-Value Agriculture” projects, the United States Agency for International Development (USAID) funding the “Hill Maize Research Project (HMRP)”, and the Swiss Agency for International Cooperation (SDC) co-funding HMRP and additionally funding CEAPRED’s “Vegetable Seed Project”.

The current environment is favorable (and the on-going developments will make it even more favorable) for concerted and result-oriented actions towards the overall development of Nepal’s seed subsector. The Seed Quality Control Centre (SQCC) and other related agencies under the Ministry of Agriculture Development (MOAD) are currently working towards implementing the new Seed Act and Seed Vision. There is a growing interest and willingness on the part of both the national and international development partners to support further actions to complement and/or expedite the ongoing and future initiatives in the subsector. The challenge is how to make best use of the current supportive environment to accelerate the development of the subsector.

### C. The Seed Summit to Identify Future Courses of Actions in the Seed Subsector

What future actions to take to develop the subsector will depend on what vision we have of the seed subsector. In the past, the development efforts in the subsector seemed to be generally guided by the need to change a part of the subsector – that is, by the need to enhance access to seeds by the farmers. Other actors and aspects in the seed value chain were not given due recognition. There is a need to adopt a broader and more holistic perspective of developing a competitive, rapidly growing, and sustainable seed industry in Nepal. This approach takes into account roles and functions of all actors in the value chain, thereby helping to develop the entire seed system in a more efficient, responsive, and sustainable manner. Simultaneously, this will ensure that markets work effectively and efficiently to make quality seeds available to farmers in a timely and transparent manner.

In looking at the “big picture”, identification and elaboration of an effective and actionable strategy and roadmap for rapid and sustainable growth in the seed subsector will ideally involve consultations, discussions, and agreement among all related national and international stakeholders from the public, private, and non-government sectors. Consultation processes held at the individual level would be cumbersome and time-consuming and sometimes may not lead to any strategy and plan of actions

involving shared roles and responsibilities. Typically, a large forum such as a Seed Summit with participation by a majority, if not all, related stakeholders offers a promising alternative.

It is in the above context that the first Nepal Seed Summit is being held by the GON in close consultation and cooperation with other stakeholders. Summit participants will include government officials and policy makers, the representatives of major political parties, private sector agencies, NGOs, farmer organizations, international development partners, national and international businesses, and academia.

## **II. SCOPE**

### **A. Purpose and Scope of the Summit**

The main purpose of the Summit is to identify and elaborate a common strategy and plan of actions with shared roles and responsibilities to develop a competitive, fast growing, and sustainable seed subsector in Nepal. The specific objectives and expected outputs of the Summit will be outlined later in the course of discussion and deliberations in the Steering Committee and Technical Committee meetings.

The Summit will cover problems, issues, and options related to (a) the value chain functions and (b) the value chain environment. In other words, it will cover all major aspects of the seed value chain encompassing the production, processing, and marketing sectors as well as the policy and regulatory environment in which the value chain operates.

The following four interrelated thematic areas have been identified for the purpose of developing four thematic papers:

- i. Policy Environment
- ii. Support Services in Seed Production
- iii. Seed Quality and Marketing
- iv. Seed Enterprise Development

Each paper will provide a critical assessment, review, and recommendations in relation to that thematic area. A more detailed account of the specific issues and questions to be addressed by the assessment under each thematic area is discussed below.

### **B. Scope of Thematic Papers**

#### *1. Policy Environment*

The main focus of this theme will be on a critical assessment of existing policies, legislations, and regulations affecting the seed subsector; identification and analysis of problems and constraints; and

elaboration of specific reform measures to address those problems and constraints. The assessment is driven by the need to create an enabling policy environment supporting the development of a competitive, fast growing, and sustainable seed subsector in Nepal, bearing in mind that this should not only contribute to economic growth and poverty reduction through growth of business and employment, but should also ensure farms have timely and affordable access to quality seeds.

Policies affect the entire value chain by changing the institutional arrangement and incentive structure, which affect the participation and functions of value chain actors in both input and output markets. The assessment will, therefore, include an analysis of how and to what extent the existing policies are affecting the smooth operation of the national seed system through their effect on the participation and functioning of related public and private sector agencies in the delivery of support services, input supplies, and output marketing. The assessment will address, but is not limited to, the following questions:

- How are the current policies affecting the entry and expansion of private sector investment and business in seed subsector? What are the specific policy constraints facing the private sector in relation to their increased involvement in various aspects and stages of seed value chain?
- What are the current policy and regulatory measures adopted by the concerned government agencies towards registration and release of new varieties – both domestic and foreign – and how are these measures affecting the prices and availability of quality seeds to farmers?
- How effective are current policies in relation to public sector involvement in research and development in the seed subsector? Where and in what ways are the current policies favoring or constraining the involvement of non-state actors (private sector, NGOs, and cooperatives) in varietal development research (both hybrid and open-pollinated) and seed production – especially the source seed production?
- What are the policies and how are they affecting the timely and affordable supply of quality seeds at the local level?
- How are the imports and use of different types of seeds (OP, hybrid, and GMOs) monitored and regulated?
- How favorable or constraining are the current import and export tariffs and other barriers, if any, to the competitiveness and growth of domestic seed industries as well as to the expansion of an export market for domestic seeds?

The assessment will help identify the specific policy gaps or constraints affecting the development of the seed subsector. The ultimate purpose is the identification and elaboration of specific policy reforms and

expected results from each of the reforms. A review and or reference of successful policies adopted by other countries having strong seed subsector will provide supporting evidence and will add strength to the recommended reforms.

## *2. Research and Support Services in Seed Production*

The key question to be addressed in this theme is what are the current weaknesses of the support service system in seed production and how to make it more effective to sustainably increase the scale of production and expand seed business. Emergence and growth of large seed industries and businesses in Nepal is not possible without substantial increase in the current scale of seed production. Although the domestic seed production has significantly grown over the past two decades, the total volume is still very small relative to the country's seed production potential. The seed market is still largely confined in relatively accessible areas, where the private sector mostly operates.

There is potential for increasing seed production for domestic markets. First, in more remote rural areas, the supply chain is very weak and unavailability of seeds is still a significant constraint. With improvement in supply chain, domestic markets can absorb a much larger volume of seeds than is currently produced and marketed. Second, demand for hybrid seeds is rapidly growing and is being met by increased level of imports; this demand could be met by producing hybrid seeds domestically for import substitution.

Of course, there is a huge untapped potential for seed export from Nepal, but this will critically depend on the competitiveness of Nepalese seeds, which currently appears to be low. There are concerns that local seed prices in Nepal are higher than in neighboring countries and that, if the situation persists, Nepalese seeds are likely to be replaced by imported seeds even in the domestic market. A number of factors may be affecting the competitiveness of Nepalese seeds including low productivity, poor seed quality, and high cost of production and marketing.

The key questions to be addressed by the assessment under this theme include the following:

- What is the current status of provision of physical inputs and other support services for seed production – who is delivering what, how effective and efficient is the delivery system, and where are the bottlenecks and gaps?
- What is the potential for enhancing the role of private sector and other non-state actors (such as NGOs and cooperatives) as providers of research, extension, and marketing services?
- What are the key constraints to increased seed production and productivity?
- What are the specific problems and issues associated with the supply of breeder, source/foundation and improved seeds, and how are they affecting production and productivity?

- What and how efficient are the seed marketing networks and channels?

The assessment will come out with clear and specific recommendations and a plan of action to address the issues and gaps in relation to each of the above questions. The plan of action should ideally specify the roles and responsibilities of main actors in the value chain, and elaborate the institutional and implementing arrangements, particularly if reforms in the existing arrangements are recommended.

### 3. *Seed Quality and Marketing*

The main focus of this theme is on the critical assessment of the two main pillars of the value chain i.e. seed quality control and marketing. Currently seed quality control is limited to ~12% of the market. For Nepal to produce high quality seeds and effectively market them, it needs to focus not only on seed production but also on quality control, marketing, marketing research, information systems and forecasting, product sourcing, new product development, and distribution.

The current challenge regarding seed quality control is how to accurately and efficiently check or evaluate large quantities being imported through informal channels. The immediate need is to step up the efforts to set up more capacity in terms of infrastructure as well as the trained manpower. This has to be in place not only for the seeds which are being imported but also to manage the seed industry growth as envisioned in the Seed Vision 2025.

Seed marketing should aim to meet farmers' demand for reliable supply of a range of improved seed varieties of assured quality at a reasonable price. However, the difficulties associated with organizing effective seed delivery systems, especially to small scale farmers, have often been underestimated in comparison with the attention given to other seed industry activities. Historically, more attention and resources have been devoted to the physical aspects of seed production and storage than to the difficult organizational issues involved in managing sales and distribution. The main issue this analysis needs to address is whether we really know what varieties/hybrids farmers require and if so, do we have enough germplasm base to deliver these.

The key questions for the seed quality control and marketing are:

- Assessment and evaluation of the current process and infrastructure: Is it sufficient to take care of the current levels of production and envisaged growth as per the Seed Vision? What is the capability of the private sector for quality testing and control? What improvements and upgrades are required to meet the growing need of increasing quantities as envisaged in the Seed Vision? What is the situation on the human resource availability and capacity building for consistent delivery of quality seed?

- How are we benchmarked with the global standards so that our seed exporters are able to meet and compete in the global market – for compliance with the import regulations of the targeted countries?
- How are farmers making the decisions on which variety to grow? What kinds of varieties are required by the poultry and agro processing units? Are we producing the varieties which are required by the farmers/end users? Is the understanding of the market is common across the stakeholders i.e. farmers, trade channel, and government?
- Do we have formal mechanism in place for exporters to understand demand?
- Do we have enough germplasm base so as to provide improved seeds to our farmers when required? What are the efforts being made to license in germplasm/varieties for supplying to the export markets competitively based on the need assessment of the targeted markets?
- What is the current status and outreach of the current distribution systems? Where is there weakness in distribution and how can these weaknesses be addressed?

Seed quality control is very important for the industry to flourish. The assessment will develop an analysis of the current state of seed production and provide recommendations on how the public and private sectors can increase their capacity for quality testing and control. On the marketing side, the report will provide a complete landscape of the sector with a focus on understanding the requirement of the end users so as to develop the required characteristics in the new varieties/hybrids.

#### *D. Seed Enterprise Development*

Strengths of both public and private sectors can be capitalized on for developing a competitive seed industry. In Public Private Partnership (PPP), the role of public sector is primarily facilitation and support from the broader policy perspective. The key issue to address is what will make Nepal and its seed industry attractive to investments from global as well local large businesses.

Understanding the investment needs of the seed sector is very important. Investments channeled in the right direction using a holistic approach that considers improving the entire seed value chain can drive remarkable progress. Vehicles such as public private partnerships, joint ventures, and investments by global players need to be explored and encouraged to achieve full potential.

To develop a greater understanding of this area an analysis on the following is required:

- What is the current size of the seed market (cereals and vegetables) inclusive of the formal and informal sectors? The need is to quantify both in terms of volume and value.

- What is the profitability across the public and private sector for sustainable breeding, production, and marketing initiatives?
- What is our competitiveness and in which crops in particular to export seed from Nepal? Have we carried out the need assessment of the targeted markets so that our research and production techniques are channelized to achieve the desired goals?
- How have the existing medium-scale seed enterprises built their businesses? What are strengths and limitations of supporting community-scale seed enterprises? What role the cooperatives can play?
- What are the opportunities and constraints for growth? Including for new entrants? Why, as of now, hasn't any of the large Nepal industry players invested in the seed sector yet?
- What will it require to set up four mega seed companies by 2025 as envisioned in the Seed Vision?

### **III. EXPECTED OUTPUTS**

The main output of the Seed Summit will be an agreed upon roadmap and strategy or plan of action within each of the four thematic areas to be implemented in the short, medium, and long-term in order to develop a competitive, fast growing, and sustainable seed subsector in Nepal.

The seed value chains are not uniform across crops/commodity subsectors. The value chain functions and actors may vary between cereal and vegetable crops and between OPVs and hybrid varieties within each crop. Therefore, the plan of action may also vary across crops and varieties within a crop. The expected outputs of the Seed Summit are summarized in the following two tables.

**Expected Outputs of the Seed Summit: Rice/Maize/Wheat/Vegetable**

Thematic Areas	Open Pollinated Varieties						Hybrid Varieties							
<b>Policy Environment</b>	<b>Current issues</b>	<b>Action Suggested</b>						<b>Current issues</b>	<b>Action Suggested</b>					
		<b>Immediate (0-3 Yrs)</b>		<b>Medium (3-5 Yrs)</b>		<b>Long (Beyond 5 Yrs)</b>			<b>Immediate (0-3 Yrs)</b>		<b>Medium (3-5 Yrs)</b>		<b>Long (Beyond 5 Yrs)</b>	
		<i>Resources</i>	<i>Responsibility</i>	<i>Resource</i>	<i>Responsibility</i>	<i>Resource</i>	<i>Responsibility</i>		<i>Resource</i>	<i>Responsibility</i>	<i>Resource</i>	<i>Responsibility</i>	<i>Resource</i>	<i>Responsibility</i>
<b>Research and Support Services</b>	<b>Current issues</b>	<b>Action Suggested</b>						<b>Current issues</b>	<b>Action Suggested</b>					
		<b>Immediate (0-3 Yrs)</b>		<b>Medium (3-5 Yrs)</b>		<b>Long (Beyond 5 Yrs)</b>			<b>Immediate (0-3 Yrs)</b>		<b>Medium (3-5 Yrs)</b>		<b>Long (Beyond 5 Yrs)</b>	
		<i>Resource</i>	<i>Responsibility</i>	<i>Resource</i>	<i>Responsibility</i>	<i>Resource</i>	<i>Responsibility</i>		<i>Resource</i>	<i>Responsibility</i>	<i>Resource</i>	<i>Responsibility</i>	<i>Resource</i>	<i>Responsibility</i>
<b>Seed Quality and Marketing</b>	<b>Current issues</b>	<b>Action Suggested</b>						<b>Current issues</b>	<b>Action Suggested</b>					
		<b>Immediate (0-3 Yrs)</b>		<b>Medium (3-5 Yrs)</b>		<b>Long (Beyond 5 Yrs)</b>			<b>Immediate (0-3 Yrs)</b>		<b>Medium (3-5 Yrs)</b>		<b>Long (Beyond 5 Yrs)</b>	
		<i>Resource</i>	<i>Responsibility</i>	<i>Resource</i>	<i>Responsibility</i>	<i>Resource</i>	<i>Responsibility</i>		<i>Resource</i>	<i>Responsibility</i>	<i>Resource</i>	<i>Responsibility</i>	<i>Resource</i>	<i>Responsibility</i>

Seed Enterprise Development	Current issues	Action Suggested						Current issues	Action Suggested					
		Immediate (0-3 Yrs)		Medium (3-5 Yrs)		Long (Beyond 5 Yrs)			Immediate (0-3 Yrs)		Medium (3-5 Yrs)		Long (Beyond 5 Yrs)	
		Resource	Responsibility	Resource	Responsibility	Resource	Responsibility		Resource	Responsibility	Resource	Responsibility	Resource	Responsibility

**Expected Outputs in each thematic area and crop by variety (hybrid or OP)**

<b>Current issues/Problems</b>	<b>Suggested Actions</b>			<b>Responsible Agency</b>	<b>Resources</b>
	<i>Immediate (0-3 years)</i>	<i>Medium term (3-5 years)</i>	<i>Long term (&gt;5 years)</i>		

#### **IV. IMPLEMENTING ARRANGEMENTS**

##### **A. Formation of a Technical Committee**

##### **B. Formation of Thematic Groups**

###### **i. Policy Environment**

Dr Hari Bahadur KC

Mr Binod Bhattarai

Mr Arun Kafle

Representative of donor community

###### **ii. Research and Support Services in Seed Production**

Mr Dila Ram Bhandari

Mr Madan Thapa

Mr Anil Acharya

Representative of donor community

###### **iii. Seed Quality Control and Marketing**

Dr Mahendra Prasad Khanal

Mr Bhoj Raj Sapkota

Mr Durga Adhikari

Representative of donor community

###### **iv. Seed Enterprise Development**

Dr Pradyumna Raj Pandey

Dr Ram Chandra Bhusal

Mr Pradip Maharjan (AEC)\*

Representative of donor community

#### **V. TIMEFRAME**

The Summit has been tentatively scheduled for mid-March 2015. The date will be finalized by mid-December 2014 to allow sufficient time for revision and finalization of the Thematic/Keynote and issue-

specific papers and preparation for international participants. Keeping this timeframe in mind, the specific deadlines for completion of key activities or milestones are as follows:

#### A. Technical Activities

- |       |   |                   |
|-------|---|-------------------|
| i.    | Identification and finalization of thematic areas                   | 15 August 2014    |
| ii.   | Preparation of draft Concept Note for the Summit                    | 31 August 2014    |
| iii.  | Preparation of full Concept Note                                    | 15 September 2014 |
| iv.   | Finalization of Thematic Groups (TGs)                               | 15 September 2014 |
| v.    | Review and finalization of the Concept Note                         | 30 September 2014 |
| vi.   | Identification of Paper writers                                     | 30 September 2014 |
| vii.  | Preparation of draft papers<br>(Thematic and issue-specific papers) | 30 November 2014  |
| viii. | Review of papers by peer reviewers                                  | 15 December 2014  |
| ix.   | Revision and finalization of Papers                                 | 15 January 2015   |

#### B. Management/Logistic Activities

- |       |   |                   |
|-------|---|-------------------|
| i.    | Establishment of Summit Secretariat   | 15 September 2014 |
| ii.   | Mobilization of financial and technical assistance  | 15 October 2014   |
| iii.  | Preparation of Summit brochure/flyer  | 15 November 2014  |
| iv.   | Identification of Summit participants   | 15 December 2014  |
| v.    | Drafting of Summit program schedule   | 15 December 2014  |
| vi.   | Finalization of the program schedule  | 31 December 2014  |
| vii.  | Formation of various sub-committees   | 1 January 2015    |
| viii. | Invitation sent to Summit participants  | 15 January 2015   |
| ix.   | Final list of participants  | 15 February 2015  |
| x.    | Final logistic arrangements<br>(Venue, accommodation, meals/snacks, transport facilities, etc.) | 15 February 2015  |

## ANNEX 6: LIST OF THE KEY PEOPLE MET DURING THE VISIT

Date	Organization/Group	Officials
17-Aug-14	Sri Shiv Shakti Vegetable Seed Production Cooperative Ltd, Kanpur VDC-7, Kottimal, Kavre	Dev Raj Khakurel (CP), Psang Dorje, Praman singh, Krishna Prasad Bhurtel, Randi and Ramdev Shaha from CEAPRED
17-Aug-14	Vegetable Seed Production Cooperative, Jorsal, Kavre	Rudra Bhadur Bisankhe (CP)
18-Aug-14	NARC, Khumaltar, Lalitpur	Raj Pandey, Surendra Shrestha and Deepa Singh Mob.No.:9849189955, e-mail.com:
	SQCC DOA, Harihar Bhawan, Pulchowk, Lalitpur	Mahendra Khanal PhD , Senior Seed Development Officer, SQCC Centre, Hariharbhawan, Lalitpur, Nepal Tel: 01 5534258 Office E mail: <a href="mailto:Khanal.mp@gmail.com">Khanal.mp@gmail.com</a>
19-Aug-14	ACE Bank, Naxal, Narayanchour	Suyog Shrestha Acting Chief Executive Officer, ACE Development Bank Limited, PO BOX 13383,Narayan Chour,Naxal, Kathmandu, Nepal Tel. No.: 014441110 E-mail: <a href="mailto:suyog@ace.com.np">suyog@ace.com.np</a>
20-Aug-14	World Bank	Purna Bahadur Chhetry ,Sr Rural Development Specialist, The World Bank, Nepal Country Office, Yak and Yeti Hotel Complex, Durbar Marg, Kathmandu, Nepal Tel: 014226792/4439571 (O), E- mail:pchettri@worldbank.org
	FAO/AFSP, Gairidhara	Shyam Paudel (Program Manager of Agriculture and Food Security Project, Mob.No.:9841365913
	CEAPRED Chairperson and ED	Hari Krishna Upadhaya (CP), Mob No.9801013140, e-mail.: hari.upadhyaya@ceapred.org.np, Bharat Upadhayay (ED), Mob. 9851106743, e-mail: bharat.upadhyay@ceapred.org.np
21-Aug-14	Gorkha Seeds	Kedar Budhathoki, Gorkha Seed and Agro Traders,Kalanki,Kathmandu,Nepal Tel: 9841307324 Email: <a href="mailto:gorkhaseed@gmail.com">gorkhaseed@gmail.com</a>

	Nabil Bank, Head Office, Tindhara, Kantipath, KTM	Sanjay Nepal, Senior Relationship Manager, Corporate Banking, Nabil Bank Limited, "NABIL CENTRE" Beena Marg, Teendhara, Durbar marg, Kathmandu Tel: 4227181 Email: sanjay.nepal@nabilbank.com
<b>22-Aug-14</b>	FNCCI/AEC, Teku, KTM	Pradeep Maharjan, Program Manager (Himali Project, Mob.No:9851007865.
	DIPPROS	Krishna Prasad Neupane (Sr Project Coordinator), Mob. No.:9851197922, e-mail:
<b>25-Aug-14</b>	IFPRI, Mandikatar	Dr. Dev Bhakta Shakya, Team Leader, Mob. No. 9851066062
	DoA/Crop Development Directorate, Pulchowk, Hariharbhawan	Mr. Dila Ram Bhandari, Program Director, Crop Development Directorate, Department of Agriculture, Hariharbhawan, Lalitpur, Nepal Tel: 01 5528129 E mail:dilarambhandhari@yahoo.com
<b>26-Aug-14</b>	CG/Khumaltar,	Abinash Pant (CEO of CG Seeds) Mob.No.:9851024482, E-mail: apant@wlink.com.np)
	CG Seeds	
	SAMARTH Project, Patan Dhoka, Lalitpur	Tim , Country Director
<b>27-Aug-14</b>	PACT Project, DoA	Yogendra Karki ,Project Director, PACT, Sallaghari, Maharajgunj, Nepal Tel: 01 4017765 E mail: mail@pact.gov.np
<b>28-Aug-14</b>	Fly to Dhangadhi and interaction with Unique Seed Company in Dhangadhi, Kailali	Lok Raj Joshi (Manager), Mob. No.:9848625995
	Interaction with Panchasakti seed company, Dhangadhi, Kailali	Kumar Gaire, Mob.No.:9848420318
	Binayak Agro-vet, Sripur-4, Belauri, Kanchanpur	
	Paddy Seed production Plot visited in Sripur-4, Kanchanpur	Lali Gurans Farmers Group found involved in Paddy seed production taking one hectare of land on lease. Variety used was Radha-4.

	Interaction with Kishan Jagaran Multipurpose Cooperative Ltd, Punarbash Municipality-6, Town, Tribhuwan Basti, Kanchanpur	Shankar Bhadyr KC ( Chairperson), Mob.No: 9815600050, Yam Prasad Paudel (Secretary), Mob.No.:9848862436, Nabin Kumar Timilsina (Member), Mob No.:9848664804
	Kishan Sahayog Kendra, Dhangadhi, Kailali	Parakash Chaudhary
<b>I-Sep-14</b>	KL Dugad Group, Dillibazar, Kathmandu	Pradeep (Incharge of Food processing and seed production)