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# KISAN PROJECT

CONSULTANT REPORT — MARCH – APRIL 2015  
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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

AV	Agro-vet
CC	Collection Center
CSISA	Cereal Systems Initiative for Southeast Asia
DADO	District Agriculture Development Office
DEPROSC	Development Project Service Center
EIG	Education for Income Generation Project
GON	Government of Nepal
KISAN	Knowledge-based Integrated Agriculture and Nutrition (KISAN) project
NGO	Non-governmental organization
KISAN	Knowledge-based Integrated Sustainable Agriculture and Nutrition
LSP	Local Service Provider
MARD	Market Access and Rural Development Project
MF	Micro-finance
MOAD	Ministry of Agriculture Development
MOU	Memorandum of Understanding
MPC	Market Planning Committee
MT	Metric ton
NARC	Nepal Agricultural Research Council
NEAT	Nepal Economic, Agriculture and Trade Activity
NR	Nepali Rupees
OPV	Open Pollinated Varieties
PACT	Project for Agriculture Commercialization and Trade
PP	Production Pocket
PS	Private Sector
SACCO	Savings and Credit Cooperative Organization
SIMI	Smallholder Irrigation for Market Initiative
SMARTH	UKAID Nepal Market Development Program
VC	Value Chain

## INTRODUCTION

The Knowledge-based Integrated Sustainable Agriculture and Nutrition (KISAN) Project is USAID's five-year Feed the Future flagship project in Nepal, implemented by Winrock International. KISAN promotes sustainable solutions to reduce poverty and hunger by achieving inclusive growth in the agriculture sector, increasing the income of farm families, and linkages with on- and off-farm agribusiness enterprises. KISAN targets the agricultural subsectors of rice, maize, lentils, and vegetables. Project implementation is in the 20 Feed the Future (FtF) districts identified by USAID Nepal in the Western, Mid-Western, and Far-Western Regions of Nepal. These 20 districts are Baitadi, Dadeldhura, Kanchanpur, Doti, Achham, Kailali, Dailekh, Surkhet, Bardiya, Banke, Rukum, Jajarkot, Salyan, Rolpa, Dang, Pyuthan, Palpa, Gulmi, Arghakhanchi, and Kapilvastu divided into four clusters (West, Bheri, Rapti, and Far-West).

The Project is in its third of five years. One of the project's objectives is to improve the efficiency and productivity of agricultural supply value chains (VC) in target districts. Many of the farmers in Nepal, particularly rural smallholder farmers, lack access to quality inputs, innovative technologies, market information, and markets. Improving the efficiency value chains, and expanding their reach to rural farmers, will help increase smallholder farmers' productivity and income, and, by extension, their physical and financial access to food security.

To date, KISAN has employed a multi-dimensional approach to strengthening VC weaknesses, using a market-led approach working from end-market opportunities back through the VC strengthening weak links as identified in VC assessments. This has been carried out primarily through a series of staff-facilitated technical trainings, demonstrations and other forms of assistance, building off and scaling up the successes of prior USAID-funded project activities (MARD, SIMI, EIG, and NEAT).

The successful result of this approach has allowed the project to evolve to the point where it now seeks to institutionalize staff-facilitated supply functions in the VC actors themselves. To this end, USAID and KISAN have agreed to engage in pilot activities to empower interested and capable VC actors to expand the scope of their enterprises to directly provide input and output service functions.

To meet this goal, two key nodes along VCs will be targeted for intervention: apex-level lead firms and regional-and-district-level farmer organizations, input dealers, processors, and markets. On the apex level, lead firm drivers such as input distributors have entered into agreements with wholesale buyers/processors. Through these agreements, KISAN will support lead firm expansion of input and output support services including crop input, technical training, market information, storage, and market opportunities to West and Far-West districts. These partnerships will serve to provide farmers with needed inputs and market outlets and provide apex-level firms with raw product to meet their expanding processing and market demand needs. KISAN has begun this process with agreements between lead firms NIMBUS, K. L. Dugar, and Agricare.

Development and institutionalization of sustainable linkages with apex-level lead firms is first-and-foremost predicated on trust which is a function of developing the chain awareness, infrastructure and

enabling environment required to facilitate the win-win scenarios envisioned in long term viable partnerships. As these relationships are developing, KISAN is also seeking to strengthen existing relationships with select VC drivers on regional and district levels. These drivers have evolved over time as trusted local institutions, vertically and horizontally integrated, providing input and output services which in time will be the channels through which apex-level lead firms and farmer-level organizations develop their win-win relationships. These partnerships will increase VC efficiencies through pooling resources and sharing risks resulting in a collaborative advantage that benefits all parties.

### **ASSIGNMENT PURPOSE**

The purpose of this assignment is to identify a group of value chain actors that are interested and have the capacity to participate in the first round of a pilot grant program designed to transition the delivery of training and technical assistance from KISAN's direct implementation to VC private sector service providers; and to provide recommendations to facilitate operationalizing the program based on observations from field consultations with program candidates and KISAN staff. Project staff will assist select enterprises develop applications for project support. The information presented is derived from observations, discussions, and face-to-face meetings with KISAN staff, development organizations, and VC actors. See Annex 2 for a list of meetings.

The grant program is in response to KISAN's recent contractual modification that seeks to facilitate private sector firms taking on, and institutionalizing, the role of KISAN in providing training and technical services to project beneficiary organizations. Findings from this pilot program will enhance the long-term sustainability of project activities.

### **ASSIGNMENT OBJECTIVE**

The assignment objective is to carry out a series of activities in support of the assignment purpose. Activities in support of this objective include: discussions with KISAN Kathmandu managers, field staff, and partner and resource development organizations to discuss best practices of embedded service methodologies and assimilate lessons learned in support such activities in Nepal; determine how reallocation of resources within the project can best support transitioning from project-driven assistance to private sector entities taking up the role of VC support service; a rapid assessment of value chain actors in the rice, maize, vegetable, and lentil VCs in Surkhet, Dang, Banke, and Kailali districts to gauge VC actors' abilities and interest in assuming service and support functions; consultations with targeted enterprises identified by KISAN staff to identify gaps and interventions to address those gaps; identification of potential partners to pilot embedded services activities; identification of potential pitfalls and challenges pilot activities should consider in operationalizing the grant program; and provide recommendations on how best to proceed.

The report is presented in three sections and an annexure. Section One, Value Chain Actors and Summary of Their Roles, is a primer on who the relevant VC actors are, their functions/contributions to the VCs, and recommendations on how they should be supported. Section Two, Operational Observations for Consideration, is a listing of observations for consideration in operationalizing the grants program. Section Three, Summary of Actors – Assessment Score, is a table identifying those

enterprises best suited for immediate follow up for grant application development by KISAN staff. Section Three is based on discussion with KISAN staff, field observations, contents of the KISAN Grant Manual, and the consultant's experience in grant program design and management.

Please note there is a wealth of information on Nepal's agricultural VCs and their associated actors, such as those listed in this report, which can be easily found through basic internet research, professional networks or bibliography reviews, and, subsequently, is not repeated in this document.

Furthermore, the information presented in this report is based on a series of meetings and interviews with a range of project-related partners. The findings and recommendations emerging from this assessment cannot be generalized to the entire farmer population in Nepal but do provide a framework that the KISAN Project can utilize to successfully implement a pilot approach for transitioning to private sector provision of value chain support services.

## **SECTION ONE – VALUE CHAIN ACTORS AND SUMMARY OF THEIR ROLES**

This section presents an overview of private sector VC drivers that provide support services to KISAN's four target value chains. Strengthening these actors through grant program support will enhance the ability of existing service providers to better meet the critical technical, financial, and business needs of chain enterprises increasing their efficiencies and productivity to benefit from market opportunities. This section is weighted towards regional- and district-level enterprises. National-level firms are obviously important for their capacity to provide multiple integrated services; however these firms are in the development phase of establishing support services in the target districts. Furthermore, business relationships are based on trust and the pilot activity is better served initiating with local firms that already have trust-based relationships with other chain actors.

### **SACCOS**

Savings and Credit Cooperatives (SACCO) provide a valuable service to VC participants. These organizations vary in size, range of credit products, and geographic presence and may be found embedded in cooperatives or community organizations or operating independently. Additionally, some have spun off entities to form partner formal development banks and agricultural cooperatives. Loans provided by these organizations range from NR 1,000 to hundreds of thousands with terms of months or years. Informal credit is also available and is a traditional form of finance in many areas. SACCOs' core business is savings and lending, and although much of this is for agriculture, few have a formal technical agriculture development capacity. SACCOs generally provide an array of financial, business, and organizational training services for their clients and have a wide geographic presence. SACCOs consulted with have a solid capital base, are administratively and managerially sound, and view developing their agriculture development capacity as an additional revenue stream and method of expanding their client base. Given the nature of this activity as a pilot project and the length of time required to institutionalize agriculture development as a core capacity, SACCOs are not viewed as a priority grant recipient at this time.

**Recommendation:** Do not provide grants for SACCOs for developing agriculture services but utilize their services for strategic/business planning or related training.

## **AGRICULTURE AND MULTI-PURPOSE COOPERATIVES**

Agriculture cooperatives play an important role in all target VCs. As with any contributing set of VC actors there are many levels of capacity, sophistication, and geographic reach within the organizations assessed. In many instances cooperatives provide services and linkages, horizontal and vertical, which are central to VC participants' success. For example, several cooperatives consulted had been established some 20 years and were found to have embedded agro-vets, credit, collection center, marketing and technical assistance services as well as proven organizational administrative capacity which is requisite for grant collaboration. Furthermore, many have strategic visions such as seed packaging and distribution to diversify their revenue streams and lower costs to and increase adoption of quality inputs by rural farmers. Cooperative staff may be in the development stage or well-trained and educated, including MSc-level graduates, and members that are or have been technical local service provider (LSP) staff.

Additionally, some of these organizations' development profiles include project management and implementation with, for example, the World Bank (WB), Asian Development Bank (ADB), DIFID, Government of Nepal (GON), and USAID. Some cooperatives are majority women-operated and membership-dominated. What is important about these VC actors is that many have been established over numerous donor projects including USAID; Rapti projects in the 80s and 90s, MARD, SIMI, EIG, NEAT, and KISAN and well networked to government at local, regional, and national levels.

Cooperatives will continue to play vital roles in agriculture development well into the future.

**Recommendation:** Provide grant support to well-established, service-oriented cooperatives to improve their technical, business, and management operations and provision of VC services to members and non-members.

## **AGRO-VETS**

Agriculture input dealers play a critical role in the agriculture VC service and support system. Agro-vets (AVs), varying in size and services provided, are found operating independently and/or as distributors and suppliers to regional AV shop networks, small VDC-level shops, and embedded in cooperatives. Agro-vets are networked with MPCs, government District Agriculture Development Offices (DADOs), and Agro Service Centers (which offer a source of AV-beneficial subsidies to clients, new clients, and referrals), NGOs, markets, and other VC actors. Owners and/or staff may have advanced degrees from agriculture universities or no technical training whatsoever; strengthening agro-vet technical capability is widely reported to be vitally important.

Products are sourced directly from all over Nepal, India, Thailand, Europe, and other countries or indirectly through traders, cooperatives, and other intermediaries. Products include all varieties and qualities of agriculture and veterinarian supplies. Most AVs report that farmers are not willing to pay for improved inputs and new technology adoption is a gradual process. Many AVs provide credit to farmers as a necessity of doing business competitively and are paid at harvest, although some report tens of millions in outstanding loans. AVs may or may not provide technical trainings, demonstrations, or attend

agro-fairs unless compensated; those that do report nominal impact with the best advertisement being trust, relations, and word of mouth. Some advertise via radio or newspapers but similarly report no remarkable impact. Revenues range from NR 500,000 to hundreds of millions per year. Farmer client numbers range from several hundred to an estimated 5,000. Greater cost items are not inventoried and must be ordered but source networks are extensive and AV owners are natural traders. Few AVs report difficulty in sourcing products and most all are willing to expand their business through cooperation with KISAN.

Agro-vets represent a valuable link in VCs and opportunities for KISAN to provide and upgrade AV technical (seen as very important) and business training, and partner/support to institutionalize training and technical assistance, access to inputs, and dissemination of knowledge and technologies.

**Recommendation:** Provide grant support to AVs in developing AV technical capacity, business planning and management for operations and expansion, dealer networking, service and product branding, and provision of technical assistance/trainings and demonstrations as embedded services.

### **MECHANIZATION DEALERS AND LARGE-SCALE IRRIGATION VENDORS**

Mechanical equipment dealers sell small walk-behind tillers, larger “driven” cultivators, and an assortment of attachments including reapers, grain thrashers, pumps, and wheat seed drills. Dealers also provide maintenance and service. All vendors report their products and sales to be of Chinese manufacture. These machines are of much lesser quality than Indian manufacture but substantially less costly and subsequently the choice of local buyers. Warranty is for one year on engine and gear box only. For an individual operator, such machines will last three to five years after which vendors believe the owner will buy a new one, trading in the old one for a modest discount which serves the vendor for spare parts. Machines that are bought for continuous use selling custom services have a shorter life but are reported to pay themselves off within that period (one to two years).

The value of this equipment is its labor-saving capacity, especially in areas reporting labor shortages, and reported increased productivity of land tilled and planted mechanically. One kattha of land (1/30 hectare or 333.3 square meters) requires one complete day of hand/oxen labor to till or 1 – 2 hours of mechanical tilling. The cost is approximately the same but the tiller is reported to dig deeper and leave the soil in finer condition facilitating planting and management.

Separate irrigation pump-set shops sell larger irrigation equipment such as gas-, diesel-, and kerosene-driven surface pumps for borings and shallow tube wells, electric submersible pumps for deeper wells, and flexible plastic pipe (to direct water to different fields). Interestingly these are specialty shops in that AVs or tiller vendors rarely carry pump-sets, although they will order them as required and especially if procured by projects. They are also available through “hardware” stores. These units come in various sizes and are transportable by cart. Repairs are done by most anyone and service is rarely required. Custom irrigation is a traditional service provided by individuals and farmer organizations.

Larger-scale irrigation is reported as a production constraint in the Terai. This is especially significant for areas not served by larger canal systems now expanding in the West and Far-West regions; cooperatives in Kailali have identified irrigation as a significant constraint. Support of this input will

expand crop cultivation seasons, number of crops per year, varieties planted, and crop productivity, and offer opportunities to plant on the shoulder months (before and after normal crop seasons) to take advantage of early or late markets and avoid traditional market gluts.

**Recommendation:** Support established mechanization and irrigation dealers in coordination with DADOs, CIMMYT, and projects that subsidize sales to expand their services through business planning and management; mechanical technical training on service and maintenance; development of use of operation and maintenance guides for farmers; and provision of technical assistance/trainings and demonstrations.

## **WHOLESALE MARKETS**

Wholesale markets operate in the vegetable VC and provide a crucial role in the vertical integration of production-to-consumer activities. Wholesale markets reduce per unit marketing costs, promote price stability for local produce, reduce post-harvest losses, encourage increased output and productivity, and provide market information, inputs, and premiums for quality products and value addition. On the KISAN Project-level, wholesale markets are linked to farmer organizations through market planning committees (MPC) acting as service and product intermediaries up and down the VC. As with other value chain actors, wholesale markets vary in size and services provided. Markets may be privately owned and operated but more often are a combination of government and private ownership and operation with individual traders/vendors renting stall space. Management of public/private owned markets is committee-based and may or may not have a strategic vision and leadership. In markets with less focused leadership, traders renting stalls often operate on short-term leases which limit their ability to invest in upgrading their operations or investing in expansion of services.

Public/private markets established and managed by MPCs and/or cooperatives may also have a strategic vision developed through a long association with high-value horticulture development projects. These markets provide training and technical assistance to project-and-non-project-related farmers in production, post-harvest, and marketing and are characterized by an extensive network of sourcing and supply to international, national, regional, and local markets. These markets are well respected by farmer and buyer organizations and have a strategic interest in expanding its business and farmer organization support.

**Note:** A comprehensive vegetable value chain and market assessment was completed by KISAN in January 2014. This document details constraints and recommendations that can be useful in consideration of activities supporting wholesale market and vegetable chain interventions.

**Recommendation:** Individual market stall operators with limited product throughput or ability to expand operations should not be considered for immediate grant support. In the short term, these operators will benefit from increased throughput volume resulting from strengthened input supply chains and increased farmer productivity. Medium- or long-term grant opportunities should be based on stall owner strategic planning supported by market management or as part of a MPC strategy that develops business relationships with specific stall owners.

**Recommendation:** Support more strategically-focused markets with a history of service provision, such as Babu and Sahi, with staff to provide technical assistance and training for production through post-harvest activities and coordinate with public or employ private horticulturalist that can recommend varieties of onions or other high-value crops that are not “traditional” and conducive to agro-environment.

**Note:** Wholesale markets, with their 24/7 operations, are representative of VC actors that are capable and interested in participating in grant program activities but request that application procedures and processes be efficient and application support be offered to facilitate the application process.

## **SEED PRODUCERS, VENDORS, AND TRADERS**

The field trip and consultations were conducted along economic corridors near the Indian border. Responses from consultations on seed issues indicated no significant lack of physical access to improved seeds although some cooperatives reported the need to source improved cereal seeds from multiple government sources. Hybrid vegetable seed is primarily sourced from Indian distributors.

Notwithstanding the above observations, quality seed is often cited a major limiting factor in crop productivity. Cost and availability of improved open pollinated varieties (OPV) and hybrid seed are reasons cited for low adoption rates especially in areas remote from economic corridors where farmers use farmer-saved cereals/vegetable seeds resulting in a low seed replacement ratio. One reason for reported high prices is that locally-produced seed is often sold in bulk to seed companies in Kathmandu or Chitawan, repackaged in smaller volumes, and transported back to their place of origin for resale.

Cooperatives and AVs often produce or aggregate seed that is sold to national seed companies which clean and repackage seed to be resold locally. Many of these organizations are selling under “truth in labeling” criteria which requires laboratory testing (germination, purity, moisture content, and traceability) and are administratively and technically capable of receiving, managing, and implementing grants to produce, clean, package, and distribute seeds to local farmers, AVs, and other similar entities.

**Recommendation:** Support processing and packaging of locally produced and processed seeds in saleable size packages.

Seed research has traditionally has been the responsibility of NARC, the National Seed Company (NSC), and government seed programs that dealt with production and marketing of nationally bred and released varieties; seed multiplication and distribution has been the responsibility of the private sector. More recently, private sector involvement in production, processing, and marketing of both improved domestic and improved and imported hybrid varieties is increasing substantially. These entrepreneurs include plant breeders on their staff and are beginning to produce improved cereal breeder seed and vegetable hybrid seed and are investing in their own seed certification laboratories.

**Recommendation:** Support individual seed entrepreneurs in the propagation of breeder and hybrid seed.

Seed traders are middlemen that aggregate seed from farmers and farmer organizations and sell to local seed finishers and national seed companies. They provide an essential service but there is no reason to

support their activities through a grant program. However, their transaction costs may be reduced and buyers receive improved market information through ICT support if this is an identified and feasible need. This is a component of the SMILES grant in Kavre.

**Recommendation:** Monitor the SMILES grant in Kavre district to see if replication is warranted in other districts.

## **SEED AND FEED MILLS**

Value chain processing mills consulted with include rice and wheat seed finishing mills, livestock feed mills, and lentil food grain mills. Cereal flour mills were not included. Mills are found in a variety of sizes, technologies, and storage capacities. Smaller seed processing mills process between 50 and 150 MT per year and larger mills processing feed, seed, and lentil for consumption operate from 250 to 10,000 MT per year. Given the reported donor project linkages and signage outside mills, the ADB, WB, GON, and other international donors are or have been active supporters in grain and feed milling. Not all linkages are disclosed to external consultants.

Raw products are sourced from farmer organizations. One seed processor reported contractual relationships with farmer organizations but also reported problems with compliance. As a rule, contract farming is not a reliable business relationship in Nepal due, in part, to having no codified contract farming law. The result is that farmer organizations are essentially price seekers and primarily uninterested in contract compliance or buyer/vendor business relationships. Subsequently, it is usually trader intermediaries that aggregate cereal grain from individual farmers, farmer organizations, or buy directly from farmer organizations. Incentives to secure raw product from farmers is also used, generally through provision of seed and other inputs.

Consultations identified raw product quality as a major issue for all cereals. Poorly dried seed with a high moisture content, seed infected with fungus, and a high percentage of foreign matter, mixed varieties, etc. in raw seed lowers prices offered to farmers and reportedly wears down processing machinery resulting in poorer quality finished product. Product quality can reportedly be addressed through better production and post-harvest training and investments in assets such as farm-level cleaning machines, drying technologies, and improved storage. Presently, value addition is done by traders who buy low quality, low cost product from farmers, grade product as per buyer standards, and clean product prior to delivery. Farmers could receive a premium for this value added step.

**Recommendation:** Support farmer or farmer organization-level post-harvest grain technical assistance in handling and drying and investment in grain cleaning and grading machinery; development of forward sales agreements between farmer organizations and millers; and investment in improved milling equipment for millers.

## **LEAD FIRMS**

Lead firms are established companies that have extensive forward or backward linkages with other businesses in value chains such as traders, established farmer organizations, exporters, processors, and input supply companies. Lead firms generally provide a wide array of support services from input provision to market opportunities and develop business relationships in which all participants profit.

KISAN has developed MoUs with respected lead firms NIMBUS, K.L. Dugar Group, and Agricare, the details of which are available through the KISAN office. These lead organizations endeavor to expand their operations in the West and Far-West to offer support services including technical, input, and marketing as they seek to increase their access to and market share of raw product. Most of the surveyed organizations from the field trip know of or have communicated with these lead firms; none of the surveyed organizations report having entered into business relations with them. At this point, the lead firms are getting established and unable to offer many services as most services are dependent on scale to be economically viable, which is not been reached at this point. Other national-level lead firms include input such as seed distributors and buyers have relationships with, and sell to, many of the regional and district organizations surveyed. There are also numerous input and output lead firms from India with substantial linkages in the target VCs.

**Recommendation:** Continue improving business relationships between farmer organizations and existing regional and district-level established VC enterprises that are active in target areas; develop business relationships with national-level lead firms and regional and district-level enterprises

### **WAREHOUSE RECEIPTS ACTIVITY**

A note is warranted on the technical feasibility and economic viability of a warehouse receipts program which is mentioned in the TOR and MoUs between KISAN and NIMBUS and Dugar. The concept was broadly discussed in field trip consultations and development partner meetings. It is widely believed that such a program has its need, merits, and risks and in best practice functions ideally with three separate, independent entities: farmers' organizations, financial institutions, and warehouses.

There are no known operating warehouse receipts programs aside from Dugar's new DIFID-supported storage and warehouse receipts program in Nepalgunj where DIFID has contributed a 50/50 cost share for rental of a facility, off-site from Dugar's Nepalgunj facility, and support of facility-related staff for a period of three years. The storage facility is set up to receive rice, wheat, lentil, and mustard seed. Currently, no collection service or transportation to the facility is provided. Product is received, graded, and weighed after which price discovery occurs, a price settled upon, and farmers receive a receipt. Farmers may use the receipt for 70% of product value and redeem it one of two participating banks, Global IME or Mega Bank, three days after the receipt is issued. Farmers may also elect to sell, speculatively, in future installments. Cost of storage is NR 12 per month per quintal. At present, one farmer has availed of this new opportunity but over time many more may participate.

NIMBUS is developing a plan to sell one of its operations and invest revenues into a storage and warehouse receipts program. This program will be supported by NIMBUS' technical assistance and input Agro-vet program. NIMBUS will offer collection center (CC) and transport services, and offer farmers three options: sell at auction in which NIMBUS will be a bidder; sell directly to NIMBUS at prevailing market price; or store in the warehouse, receive a receipt that can be redeemed at 70% of product value, and sell in tranches over time. NIMBUS will always offer a market to farmers if there are no other buyers or the bank wants to call back loan. NIMBUS intends to go public with this operation and offer shares to farmers and farmers' organizations as well as other interested parties. NIMBUS is interested in

working with KISAN and sees KISAN's strengths as networking with farmers and providing an awareness of NIMBUS' plans to offer its services.

MFI's have expressed interest in warehouse receipts primarily because they have the capital but they acknowledge that such an activity would be new for them and may be outside of the scope of the pilot program. Several other large locally-based feed mills expressed interest but would prefer to operate the warehouse themselves which may or may not be economically viable to the farmers and is unlikely to take place in the short or medium term with more immediate supply available from India and increased availability of Nepal-produced product.

**Recommendation:** Improve horizontal integration of producer CCs to develop economies of scale and market power; continue to work with Dugar and NIMBUS and see how their efforts evolve.

## **PARTNER SELECTION**

Selection of grant partners should be done and based on their existing interventions with value chain partners or potential to do so. The objective is to look at the larger market system, understand its constraints, the functions of the existing players, and work with them to develop sustainable market-based activities to grow their businesses through provision of VC support services.

### *Criteria for Selecting Grant Participants*

- Innovators and drivers of growth in the industry/value chain
- Provide, or will provide, embedded support services such as pre-financing, technical advice and/or inputs, market information, etc. in order to address gaps and ensure a quality product that meets market standards
- Have existing commercial linkages and a strong demand exists for the products or services
- Have sufficient financial strength to make cost-share investments, dedicate resources to business operations
- Have the potential to change the institutionalized standards in the industry that reward farmers for using sustainable growing practices, volume, or quality that will result in improved and/or expanded relations with and higher returns to farmers
- Willing and able to make long term commitments and sustain its relationship with farmers after the project ends
- Have an acceptable record and reputation as businesses/enterprise
- Have potential to influence other firms and actors in the value chain – proven confidence and trust of VC actors (pillar of embedded service success)
- Have potential to increase the amount of product purchased directly from farms, cooperatives, or farmers groups

- Have potential to expand sustainable market opportunities including value addition through strategies such as certifications
- Have existing vision, strategic/business plans, articulated vision to facilitate ramp-up and be completed within grant window of opportunity
- Have needs that can be addressed through grant/smart subsidies interventions

*Examples of activities that can create scale and sustainable benefits with farmers:*

- Assisting firms to structure mutually beneficial arrangement for procurement operations with small-scale farmers and farmer organizations
- Working with traders to develop new market places closer to farmer production pockets or targeted markets
- Working with organized groups to provide market access, aggregate production for market power and market information
- Embedding services such as credit and training into relationships, producing more and better quality products that fairly compensate farmers

## **SECTION TWO – OPERATIONAL OBSERVATIONS FOR CONSIDERATION**

To facilitate the pilot embedded services, KISAN will implement a grants program. The program will provide financial support to private sector value chain actors to undertake the role of training and technical service provision that KISAN now provides directly. Section Two, Operational Observations for Consideration, is a listing of observations for consideration in operationalizing the grants program.

### **BUSINESS PLANNING**

KISAN conducted a number of three-day business plan trainings for beneficiary organizations over the last year. These trainings provide a valuable awareness of the importance of business planning and management but additional support is needed to produce viable plans that organizations can utilize to manage their enterprises. Furthermore, the grant program supports business expansion and diversification. It is important that all enterprises, aside from lead firms, be supported with strategic and business planning to assist them in managing organizational change and have a viable plan for transitioning off of subsidies.

Note the ICT grant took two to three months to complete requisite business planning due to difficulty finding a consultant that both knew the subject matter and had the ability to write a business plan.

**Recommendation:** Organizations approved for formal grant application, as per the Grants Manual, requiring administrative capacity support for grant implementation should be the recipient of strategic and appropriately-sophisticated business planning as soon as possible; support strategic and business plan development to ensure all grant recipients have a plan to transition off of subsidies; work with

organizations that will not be immediate candidates for application to develop a strategic vision and plan (this will allow them to better define what they want and need and facilitate future grant application processes); consider procurement of business planning software that allows for a consistent and easily developed, appropriately sophisticated business plan (business plan needs to be defined); engage a sufficient number of short-term agriculture economists or SACCOs to carry out any strategic and/or business planning assistance required.

### **BUSINESS SERVICE AND PROCESS OUTSOURCING**

Discussions with KISAN partners, consultations with value chain actors, and lessons learned from embedded service support experience reveal that staff subsidized with grant funding may not be economically viable after funding is withdrawn. Additionally, grant-assisted enterprises often assign existing technical staff with new tasks to meet business needs or to meet donor expectations, for example training an engineer to work sales when the best use of the resource is engineering.

**Recommendation:** Train enterprises in outsourcing needed services and processes (accounting) to third-party providers instead of hiring full time or assigning additional tasks to workers.

### **AVAILABILITY OF TECHNICAL RESOURCES TO PROVIDE TRAINING/TECHNICAL ASSISTANCE**

All potential grant partners consulted during the assignment requested training and technical assistance. Remarkably few requested investment in equipment. The availability of a sufficient number of qualified technical assistance providers in rural areas to meet that demand is unlikely; this obviously depends on the number and location of grants issued. SMARTH mentioned the lack qualified technicians was an obstacle to their service support efforts and hired training firms to train additional LSP staff.

**Recommendation:** Consider crafting a tripartite grant mechanism (recipients/KISAN/Vocational Education Schools) with the *Council of Technical Education and Vocational Training Nepal* which has trained some quality equipment mechanics met during the field visit; utilize SACCOS as trainers and grant application developers and strategic and business plan developers to mitigate the lack of local experts; train enterprises to outsource needed assistance to meet their needs.

### **APPLICATION PROCESS**

The application form in the grant manual is straight forward but effort should be taken to ensure the entire process is as efficient as possible. Many organizations consulted with mentioned past experience working with projects was time consuming and bureaucratic. This is something they want to avoid or they may decline to participate or drop out of grant activity participation. A bottleneck may occur when there are a number of grant application details to write, back and forth communication to confirm details is delayed, or busy schedules simply delay the decision process. Field-level grant application support may be another challenge especially early on as details required by the Kathmandu office may not be fully understood and responded to in a timely manner by field staff. Grant applicant expectations are that they will be assisted in the process.

**Recommendation:** Streamline the application to extent possible; train staff to understand and assist in application development which should include business planning; hire short-term staff with expertise from other grant programs; ensure field-level assistance resources are in place.

### **FIELD VISITS/TOURS**

Madan Pokhera is a mature well-established cooperative, CC, and vegetable trader in the Bhutwal wholesale market. Often recipients of VIP-level visitors showcase their technical and administrative capacity. The organization is impressive. It was also mentioned multiple times as an archetype to be achieved by evolving cooperatives that have visited it and strive to replicate it.

**Recommendation:** Utilize Modern Pokhera, and similar organizations, as a destination for field tours; utilize Moden Pokhera and/or similar organizations as trainers and technical assistance providers.

### **COORDINATION WITH DADO**

DADOs play an important role in providing technical assistance and training, coordinating access to fertilizer and other inputs, liaising with private sector and government entities, providing funding for activities, supporting cooperatives and other farmer organizations, and, in general, creating an enabling environment for agriculture development.

**Recommendation:** Ensure strategic coordination to include DADO and relevant government agencies in VC strengthening and grant activities.

### **POTENTIAL CONFLICT OF INTEREST IN SUPPORTING MORE THAN ONE ORGANIZATION IN A DISTRICT/LOCAL MARKET**

Multiple requests for grant assistance by similar VC actors, for example agro-vets, may be received in one district or market catchment. Supporting multiple providers of the same service may create a difficult working environment.

**Recommendation:** Map grant recipients area of influence/market shed to avoid possible conflict of interest; consult with staff on how best to address this if it is indeed an issue.

### **SMART SUBSIDIES**

Subsidies lead to inefficiencies. Frequent comments were received during field consultations on the use of project and government subsidies and the distortion of local markets. Smart subsidies promote sustainable solutions such as developing the capacity of private sector input (physical, finance, packing shed, technical assistance, etc.) providers so they offer improved products and services to farmers and enterprises in a sustainable manner; promote awareness of these products and services among farmers and enterprises; and contribute to an improved enabling environment. Smart subsidies may also be granted to farmers or farmers' groups for investment into, for example, post-harvest or processing activities.

**Recommendation:** Grant subsidies should be applied strategically to build the capacity of market players to interact more productively among themselves. **Note** that grant activities do not need to be sustainable themselves, but once they are over they should leave behind sustainable market relationships and improved services and products.

## PARALLEL PROJECT INVESTMENTS

Many of the “better” potential grant recipients are seen in the same light by other donors and are presently receiving or have received in the past technical or financial assistance. This is especially true of innovators. Disaggregating impact can be a challenge in such situations. Not all donor supporters are divulged to external consultants.

**Recommendation:** Be aware of double counting.

## GRANT RECIPIENT SELECTION

The organizational capacity of potential partners takes many shapes. Initial grant recipient criteria should be weighed in favor of those that are technically and administratively capable, and have the required infrastructure to implement grant activities with as little supervision as possible. Other promising grant recipients can be strengthened to be recipients in the future. Care should be taken to select recipients early on to avoid a level of oversight that will distract resources from other program activities.

**Recommendation:** Refer to selection criteria above

## ANNUAL PROGRAM STATEMENT ADVERTISEMENT

In asterisk-marked note at bottom of the APS release there is no mention of eligibility.

**Recommendation:** Include wording that KISAN staff and families are not eligible if this may present a conflict of interest.

## SECTION THREE – SUMMARY OF VALUE CHAIN ENTERPRISES ASSESSMENT SCORE

One of the tasks required for this assignment is identification of VC enterprises most suited for a first round of grant applications. All organizations listed are grant candidates. Enterprises are presented by district. The following table presents a summary of the results of the survey conducted during field consultations. The survey is based on the criteria for selecting grant participants presented in Section Two. Scoring is based on a five point ranking: 1 = strongly meets survey criteria to 5 = does not meet criteria. Scoring is then compiled into a ranking of 1-5, 1 being enterprises recommended for first round applications. An example of the survey is in Annex 4. Details on individual enterprises are presented in Annex 1.

**Table 1. Summary of field survey results**

<b>Enterprise</b>	<b>Ranking</b>
<b>Sital Drip Irrigation Technology Industry – Thapa Mold and Die</b> Lalitpur, Nepal 4/1/15	3
<b>Bheri Agriculture Cooperative/MPC (Krishi Bazaar Cooperative LTD.)</b> Lal Bahadur, Surkhet	2
<b>Project Enterprise Center - Cooperative</b> Mehelkuna, Surkhet	1
<b>Ganga Mala Savings and Credit</b> Chhinchu – 7, Surkhet	2

<b>Shital Agro-vet</b> Birendranagar, Surkhet	1
4/2/15 <b>Sahara Traders - Agro-machinery Dealer</b> Birendranagar, Surkhet	4
<b>Baa Ama - Agriculture Cooperative</b> Chinchu, Surkhet	3
<b>Babu and Shahi - Wholesale Market and MPC</b> Birendranagar, Surkhet	1
4/3/15 <b>Bela Agri-Cooperative (Seed Producers)</b> Lamai, Dang	2
<b>Oli Poultry Farm and Feed Mill</b> Ghorai, Dang	5
<b>Harit Karanti Agriculture Cooperative</b> Sonpur- 2, Keureni, Dang	2
4/3/15 <b>Nil Kamal Agro Machinery</b> Lamahi, Dang	N/A
<b>Ghorai Agri-Produce Market</b> Ghorai, Dang	3
<b>Kabila Agriculture Cooperative and Mahadev Saving and Credit Cooperative</b> Saundiyar, Dang	2
<b>Sworga Dwari - Rice Mill</b> Saras, Dang	3
<b>Agri-Nepal Pvt.Ltd</b> Tulsipur, Dang	1
<b>Siddartha Agro Center</b> Ghorahi, Dang	1
<b>Kisan Traders Agri-machinery</b> Lamahi, Dang	3
<b>Rapti Feed Industries</b> Satbariya, Dang	TBD - NA
4/6/15 <b>Kohalpur Wholesale Market</b> Kohalpur, Banke	4
<b>Nepalgung Agro-Product Pvt. Ltd.</b> Nepalgung, Banke	1
<b>Nepal Grain and Agro-vet</b> Nepalgung, Banke	1
<b>Ram Dhal Rice Seed and Cereal Mill</b> Nepalgung, Banke	N/A
4/8/15 <b>Krishi Upakar Multi-purpose Kendra</b> Nepalgung, Banke	2
<b>Dev Var Rice Mill / Processor</b> Nepalgung, Banke	3
<b>Prinyanka Agro Machinery Supplier</b> Uprenda Chaudhay, Owner Nepalgung, Banke Mobile: 9848058085	3
<b>Kisan Bahuddeshiva Sahakari Sanstha Ltd.</b> Lamki Chuha, Kalilali	1
<b>FukFul Tatha Tarkari Babasya Sangle - Wholesale Market</b>	4

Attariya, Kailali	
<b>Unique Seed co. Pvt. Ltd</b> Dangadhi, Kailali	1
4/11/15 <b>Vibek Feed Industries</b> Dhangadhi, Kailali	1
<b>Sri Pariwartan Bahudesiya Sahakari Ltd. - Cooperative</b> Dhangadhi, Kailali	2

## CONCLUSION

Agricultural VC business development services include technical advice and training on production, post-harvest, marketing, business planning, access to credit, advice on farmer organization, linkages with suppliers and buyers, market information and research, etc. These services have been traditionally provided by government and/or donor projects but as budgets become tighter and VC actors see opportunities to provide such services, investment into pilot programs to better understand how best support this transition is warranted.

The KISAN Project's successful approach to strengthening value chains through staff-facilitated interventions has established the base for transitioning delivery of training and technical assistance from KISAN to local private sector delivery channels as embedded services.

The assessment carried out under the terms of reference identified VC actors with the capacity and interest to participate in the first round of a pilot grant program designed to strengthen the capacity of VC actors to develop and institutionalize embedded agricultural services in private sector organizations. Identification criteria used is listed under Partner Selection in Section One.

*Principle observations on building capacity are:*

There is a significant number and variety of enterprises already providing VC support services including finance and credit, technical assistance, market information, and others. Agriculture cooperatives provide the most comprehensive number of services and, along with better-established agro-vets, are seen as the most trusted. Furthermore, many of these organizations have experience working with donor programs and have the administrative and technical capacity to be first tier recipients of the pilot program.

Agro-vets have intimate knowledge of farmers and their needs and are often the most visible presence to farmers. Ensuring they have the capacity to provide accurate information and appropriate products to farmers is necessary.

Regional and district-level organizations are better positioned in the short run to provide VC services as they are locally established, knowledgeable of crops and farmers' needs, and have gained the trust of farmers and farmer organizations.

National-level firms are obviously important for their capacity to provide multiple integrated services such as technical training and market information and markets; however, these firms are in the development phase of establishing support services in the target districts.

The importance of having the capacity to provide quality services is well understood among VC actors. This is borne out by the widespread requests for technical and business strengthening which indicates organizations see technical capacity, financial profitability, and the information they pass along to their clients as essential to their ability to expand their markets.

Outsourcing business processes and services is a viable way to bolster capacity as few organizations are able to hire needed staff on a full-time basis.

Government plays an important role in providing technical assistance and training, coordinating access to fertilizer and other inputs, liaising with private sector and government entities, providing funding for activities, supporting cooperatives and other farmer organizations, and in general creating an enabling environment for agriculture development.

Strategically-focused wholesale markets with a history of technical service provision have gained farmers' trust and are centrally located in VC horizontal and vertical matrices.

Value added processing of locally produced inputs like seeds and bio-fertilizers by cooperatives and seed entrepreneurs will improve availability and access, and by extension adoption, of appropriate varieties of cost-effective inputs.

Post-harvest training and asset investment will benefit farmers and farmer organizations that perform value added cleaning steps for cereal seed and increased shelf life and quality for vegetable farmers. Processors will also benefit through producing better quality product more efficiently.

Availability of quality LSPs to support the transition may be insufficient; subsequently, credit providers and well-established cooperatives should be considered for training roles where there is no conflict of interest. This is especially true for SACCOs that have proven business training programs, wide area coverage, and are interested in expanding their services to new clients. Additionally, technical schools can provide technical training for rural mechanization dealers.

Contract farming exists but it is informal and few examples of where it is successful are seen. There isn't evidence that formal contracts are required for a stronger link between farmers and processors due to weak judicial systems. What is more important for this approach to work is reliable payment, and mutual trust between the players built over time.

The assessment found that many local organizations such as cooperatives, agro-vets, wholesale markets, and seed and cereal processors provide integrated VC services including training and technical assistance and are interested in expanding their operations and improve service delivery. Strengthening these actors through grant program support will enhance the ability of service providers to better meet the critical technical, financial, and business needs of farmers and farmer organizations increasing their efficiencies and productivity to benefit from market opportunities.

## ANNEXES

### ANNEX I: MEETING AND FIELD NOTES IN CHRONICAL ORDER

#### DEPROSC – KISAN MFI provider

DEPROSC is an experienced development NGO working in numerous districts within the country. The NGO is KISAN's microfinance (MF) provider linking organizations to credit and providing training to project beneficiaries. It recently opened DEPROSC Development Bank with equity participation.

Discussion centered on the feasibility and operation of a warehouse receipts program for grains, which is mentioned in two MOUs KISAN has with lead firms, and experience DEPROSC had with such activities. DEPROSC has experience managing the logistics for large quantities of rice for the World Food Program in the Mid-West, with no loss, and, although willing to learn about warehouse receipts, believes it is best to leave such activities to established private sector firms. Other efforts by, for instance, the GON in cold storage, have demonstrated that public or NGO sector entities cannot compete with the private sector (PS) in such activities. Furthermore, DEPROSC had considered establishing a sister PS company that would be involved in PS activities but the GON informed it that such a structure was not allowable under any circumstance. As a result, DEPROSC sees this as outside its core capabilities and legal scope of action. Continued discussion was on the potential viability of such a market outlet for grain farmers and the benefits and risks. There was some concern that large PS companies managing a warehouse might expose supplier organizations to price risks as they may act in their own best interest: not sell in tranches leading up to market peaks, buy large stores from India at Nepal harvest times lowering the prevailing price to local farmers. However, that may occur with or without a warehouse receipts program. Additionally, marketing is speculative and the farmers could ultimately lose on such a proposition; and storage of large quantities could smooth out supplies resulting in more stable but lower average prices.

It was stated that ideally a warehouse system would be composed of three separate entities: finance, warehouse, and farmer organization. Such a system has worked in many different countries and there is a pilot approach in Nepal with one large trader. However, it is seriously doubted that a medium or smaller organization would be able to develop and manage a warehouse receipts program in the short or medium term. Investment and expertise is not available at a smaller scale and scale is needed to be competitive. Project investment into such an activity could be a challenge as there may be questions on which organization received the funds, where it was located or other issues related to transparency that should be avoided.

It was decided that to enhance the market position/power for KISAN farmer organizations, the best short term strategy is to develop horizontal linkages between coops (multi-purpose, agriculture, and consumer) and rural collection centers developing scale in volume and promoting quality to improve market power and maximize their returns. Improved linkages with feed mills to include quality standards and timing as well as storage facilities should be developed. To this end, assistance on the production side to increase productivity and reduce costs will be beneficial but will still make it difficult to deal with

the bigger buyers. Additionally, a government policy setting floor prices, based on fair market prices, would be good but would require a lobby effort that is unlikely.

On embedded services it was decided that cooperatives with a large number of members and offices in three to five VDCs (scale is important) is seen as a more viable option than SACCOs that are smaller and have less administrative and technical capacity. SACCOs would also need financing to add additional staff to provide embedded services, as well as financial/business planning and oversight. However it was stated that there are larger SACCOs that could expand their services and be included in the grants program. Another alternative mentioned was linking SACCOs to formal banks to provide soft loans, but to do this stringent selection criterion as well as a large number of active members, the most productive areas, audited financial documents, staff and office, and volume of transactions is needed to handle it all. All this is probably beyond the scope of SACCOs.

### **SMARTH – Nepal Market Development Program**

Discussions with SMARTH centered on the concept of embedded services and their experience with such services. SMARTH noted that their experience showed that changes in service delivery modalities during a project was a challenge as it took time to adjust the project model, staff take time to understand these changes, and that piloting such change was better done with one sector and with one implementing partner, not a number of VCs all at once.

SMARTH further stated that not all VC support services need to be embedded; most can be outsourced, an example of which is accounting which enterprises all over the world do. Their experience is that outsourcing in mechanization technologies failed as importers and distributors did not give any incentives or compensation for investment into increased sales nor would provide credit as an incentive. Embedding services also tied up existing staff for providing training to increase sales; some staff were engineers or other technicians, which should be doing engineering work. Hiring sales staff was not profitable as margins are low and the cost of hiring and training sales people were not economically justified by increased sales; also some of the work was not a 12-month a year job and no one wanted a part-time job. In SMARTH's experience, it was also best to hire a professional training company to do the training, not company staff, which was paid for by the project. Another example cited the cost of hiring JTAs to promote seed sales which was not justified by the returns to the agro-vets; and in another project that hired JTAs as embedded service technicians much of the extension work JTAs provided was not readily linked to the products in the market. The challenge is how to embed trainings and JTA services in a cost-effective manner. On another level, training needs to be provided to input dealers on technical and extension techniques as this is the greatest weakness in input delivery. This type of training, if not embedded by lead firms, needs to be provided by government or donors but this should be a long term proposition, not a series of three-day trainings, with continuous refresher courses.

### **CIMMYT**

*Andy Macdonald, South Asian Director*

Discussions were held with Andy McDonald, South Asia Director to discuss CIMMYT's activities in target districts, the seed sector, and the general maize and wheat situation in Nepal. CIMMYT's activities in the West and Far-West are centered on field trials, field day demonstrations, coordination with NARC and DADO, cereal diagnostics, advice to KISAN and other development projects, and business mentoring to seed producers. Work on the national level including, variety, registration, fertilizer policy, and continued research was also discussed. Additional funding is being sought to expand activities including a five-year grant from USAID/Nepal which may be signed in the near future. CIMMYT reports advances but work needs to be done in variety registration, seed trials and propagation training. CIMMYT has provided KISAN with a list of cereal production techniques that has been produced in a weather resistant hand-out and distributed to KISAN farmers. They have also participated in production and demonstration events and provided advice through district-based staff in the West and Mid-West which has been disseminated to KISAN beneficiaries. CIMMYT identified constraints including fertilizer, restriction of hybrid seed registration for suitable varieties in the West and Mid-West, post-harvest handling and storage, breeder seed training, adoption of corn as a cash crop in hills, need for seed and input dealer technical training, and expansion of lead firms such as NIMBUS and Dugar in the AV sector storage.

### **Meeting with NIMBUS**

NIMBUS is a well-managed, lead firm with a vision for expansion built on trust. The company is in discussion with DFID to construct a storage silo operation in the West and expand its impressive AV network in the West and Far-West.

NIMBUS is developing a plan to sell one of its operations and invest revenues into storage and warehouse receipts program. It will offer CC and transport services and offer farmers three options: sell at auction in which NIMBUS will be a bidder; sell directly to NIMBUS at prevailing market price; or store in warehouse, receive a receipt that can be redeemed at 70% of product value, and sell in tranches over time. NIMBUS will always offer a market to farmers if there are no other buyers or the bank wants to call back loan. NIMBUS wants to go public with this operation and offer shares to farmers and farmers' organizations as well as other interested parties. NIMBUS is interested in working with KISAN and sees KISAN's strengths as networking with farmers and providing an awareness of NIMBUS' plans to offer its services.

### **Sital Drip Irrigation Technology Industry – Thapa Mold and Dye**

Thapa is a tool and dye maker that machines his own dyes, uses recycled and new plastic to mold small-scale irrigation pipe, emitters, filters, and hold downs (1,000 sq. meter kits for 2 ropani or 3 kattha, with a different emitter hole spacing and number of feeder lines per system). He has seven employees and one engineer. He reported the employees produce 5,000 – 6,000 sets a year with most demand coming from iDE and other projects. He also sells through iDE to overseas markets where iDE has projects. Farmers come to see existing systems and place orders which are mostly in hill districts. He distributes through as many as 45 local dealers but 10-15 are fully active. If Thapa receives a call to work in a new area through the DADO or project he will work through a local dealer to develop a system using local

dealers, providing them training. He also installs systems through VDC subsidies. He has set up demonstrations for advertisement but relies on word of mouth and existing systems for promotion. Demos and embedded technicians do not pay for themselves although he has put sign boards at dealer shops. Outsourcing on an as-needed basis is most economic for them. If demand exists in a district, then there is no real need for promotion. JTs and JTAs also tell farmers. Systems need to be inexpensive or farmers will not buy them. They can train as needed and dealers have spare parts. Systems are not compatible with other systems. Pipe is said to last for 10 years and the system is so simple and requires little maintenance.

Thapa could expand production to double production but would need assistance and new machinery. Larger systems can be designed and built but would require R&D investment – cost share.

### **Bheri Agriculture Cooperative (Krishi Bazaar Cooperative LTD)**

The cooperative has some 550 members comprising of 26 groups of 15-25 farmers per group. The cooperative's physical structures are located on a main transportation artery and consist of a CC, retail market, and embedded AV dealer that communicates with the MPC to ensure inputs are available and of adequate quality and timing. Members are required to meet once per month and contribute NR 20 at each meeting. The cooperative utilizes the group fund to buy urea for NR 45 and subsidizes the cost to farmers for NR 25 to provide an incentive for vegetable production. Farmers also receive credit for vegetable seed and maize foundation seed from the cooperative and pay back at harvest. Other credit is provided through linkages with an MFI which is positive on lending as risks are reduced with technical assistance provision and market linkages.

The cooperative is involved in vegetable seed production for cereal and vegetables (OPV) and vegetable production for which it provides training to its members. Foundation seed is obtained from local AVs, the government, and AVs in Kathmandu. The cooperative has a stock of OPV seed for corn but foundation seed is insufficient. Farmers grade seed produced with the best seed, the largest, #60, is sold for propagation; smaller, #40, is consumed by members and sold for consumption; and smallest, 16-17, is sold to feed companies.

Farmers are mandated to bring products to cooperative where markets are readily available through the CC and retail outlets. Vegetable production is greater in the off-season, May through July, and although there is less production in other months, middlemen come all year. Production, especially during off-season, has increased which has decreased seed production as vegetables are more profitable. Farmers that once produced on one kattha now produce on two and those with two now work five. Production is directly correlated with proximity to road and market access.

The seed company Global Agri-tech buys about 20 MT of maize from the cooperative, but supply is seen as declining over time. AVs also aggregate seed from farmers by hiring a truck and sending it to AVs and seed companies in Kualpur. The cooperative has two JTAs that it cannot afford but sees the value in providing training to members and non-members.

The cooperative has requested lead farmer trainings and refresher courses for all members, business training, leadership training, and continued literacy classes. In terms of equipment, it has requested plastic crates, scales, push carts, and an expansion to its market and storage area.

Strategic and business planning are needed to learn how to budget and track costs and expenditures to pay for increased operational expenses of business expansion and increase its cash base.

### **Project Enterprise Center – Cooperative**

The Coop has been established for 15 years, has 1,340 members with 32 producer groups working in five VDCs, and has a 13 member Executive Committee with several sub-committees.

Members are involved in vegetable and cereal production for consumption markets and seed production. Vegetables are sold through its CC. Corn seed is collected in bulk and sold to buyers in the district, Chitwan, KTM, including Nepal AgroSeed and to other buyers.

The cooperative produces some 100 MT of seed per year of 12 varieties of vegetables including 26 MT of radish seed. One of its most active members is Yogi, a retired CEAPRED technician with excellent English and programming and operations ability that will greatly assist the cooperative in developing and executing activities.

Vegetables are profitable but seed is the coop's future focus and it has identified some opportunities. Presently, for example, okra seed is sold for NR 90/kg to buyers. Losses are 5% and there is a 5% interest on working capital loans so they end up breaking even. The same seeds are repackaged by larger seed companies in small packages, transported back to Surkhet and reportedly resold for NR 1,800 per kg. In negotiations, buyers increasingly ask for lower margins so the cooperative wants to produce its own brand and smaller packages for distribution to AVs and retail sales directly in the district. It does this now, on a small scale, with its seeds lab tested by NARC's Regional Seed Laboratory and in compliance with the Truth-in-Labeling law required for seed sales but sees an opportunity in expansion as well as making improved seeds available to a wider range of farmers who presently used saved seeds.

Other activities include retail and wholesale vegetable and grain sales, ongoing business capacity training through development project and government sources, and a new focus on value added marketing. A new building is being constructed on cooperative land and packaging material has been procured. Some assistance is being provided from OXFAM in women operated seed and enterprise development. The cooperative has four technicians working in the district whereas the DFID-assisted buyer Sichann has only one.

Executive members have visited wholesalers in all major cities in Nepal and have received interest on the part of many AVs and distributors for seed packaging and sales. This coupled with its local sales has focused the cooperative's increase on seed production including opening membership to new members who have expressed interest in seed production.

The cooperative is interested in partnering with KISAN and has requested assistance with completing the building seed drying floor, branding and labeling, packaging, and hiring of more Technicians.

## **Ganga Mala Savings and Credit Institute**

The MFI has some 4,000 members, 31 staff, and more than NR 100 million in capital. Its primary activities are buying and selling Nepal Rupees; support of small agri-development and livestock projects through training and credit; money transfers and remittances; credit and technical training such as integrated pest management and crop management; and literacy trainings. Its savings and development groups must attend monthly trainings, provide contributions, and engage in economic activities to remain in good standing. It has a long history of working with development organizations in the district. Its primary activities are in the eastern part of the district but it seeks to expand its branches and membership. One of its objectives is to improve its technical staffing in agriculture. The MFI provides loans of up to NR 200,000 for terms of six months to four years.

The MFI wants to link with KISAN agricultural activities and partner with VC participants needing credit and finance as well as receiving funds for curriculum improvement, technical staff, and strategic and business planning. It has substantial office and training infrastructure, is capable of product storage, and offers a range of services for additional revenue streams. Of interest is exploring the feasibility of warehouse storage on a pilot basis acknowledging the need for expansion to scale to offer competitive services.

## **Shital Agro-vet**

This AV was established more than 10 years ago, before the SIMI project, after the owner received his BS in agriculture, worked as a government JT, and private input sales agent and area manager in Mechi Zone, working his way to a gold medal employee as sales agent. He left Mechi and started this shop with NR 18,000 and now services most of the 150 AVs in Surkhet, Jumla, Dailech, Jagerkot, and Humla. The owner provides advice to individuals through frequent trainings and demonstrations to farmers and AVs and works with whatever development project is working in his area of operation. Half of his sales are outside the district.

Inputs are bought from Kathmandu (70%), Nepalgunj (15 %), and India (10%). He has been approached by NIMBUS, and other larger distributors, to sell poultry feed but has decided not to become part of their operation (he is aware of larger input dealers coming into this region but feels his reputation and trust will see him through). No incentive has been offered from large vendors. In discussions they say their prices are fixed. He sells all types of hybrid vegetable seeds, OPV, machinery, hand and electric huskers, thrashers, sprayers, and the like but not wheeled tractors or tillers. He has excellent relations with farmers and sees the trainings and demos strengthening them as well as his business – this is mostly done with project support. He also sells bio-pesticides from Agro-XX in Chitwan and mentions the product perform very well. He sells hybrid corn seed from India but big suppliers do not provide any incentives for increased sales either. Products are distributed by truck, bus, and plane to outlying areas. He provides credit to farmers but has problems getting paid and has some NR 10 million outstanding. Subsequently, he is trying to develop linkages between farmers and MFIs but farmers prefer to work through him as he charges no interest (it is not known if some cushion is built into price but he still must remain competitive). Sales are rising and he foresees continued growth. He has two agro-vets/JTAs

that work for him. Of the 150 AVs in his area of operation, he indicates that only 5% are competent and that training in livestock and all areas of agriculture is needed for them to be able to give the farmers better advice. Some 85% of farmers approach AVs for advice.

He is working on an incentive program where AVs selling more than NR 2 million in veterinary products will receive a 10% discount and those selling more than NR 20 – 40 million in agri inputs. He also has a promotion scheme where he gives mobile sets or high quality blankets to high-volume AVs saying the blanket is best as recipients like to show it as a status symbol to guests.

He reports farmers need continued assistance in all aspects of high-value vegetables, production through marketing. AVs need training in all aspects including on obtaining licenses, which is three months for some categories of products. There is much abuse of agri-chemicals and he notes that at some point buyers will check for residues so it is a good idea to prepare for this.

The challenge to operating a seed company is that seeds procured locally are sold in bulk and sent to large companies for repackaging which raises the costs substantially, and example which is OP vegetable seeds sold for NR 800/kg, repackaged and sold for NR 720/10 grams subsequently farmers cannot afford the better quality seeds. One idea is to sell shares to cooperatives to give them a sense of ownership which he says if large seed companies had done in this region this would have stimulated development of hybrid seeds.

Poultry is a rapidly growing opportunity that he is interested in. He has started Ratna Poultry Feed Company and buys 250 kg/day of mustard cake, minerals, corn rice and bran. Local corn can be bought for similar prices as Indian corn and quality can be as good but there are issues with post-harvest. Also Indian corn offers a continuous supply and quality is as good or better but he supports local production as there are many added economic benefits for farmers and poultry growers.

He will conduct trainings and demos with KISAN if they work with him and offset some of the costs through a grant. He has two proposals that he will share with KISAN which should facilitate the application process. Like many operators his opinion is that the application process are difficult and lengthy and at the end of the day it is rarely worth the bother.

### **Sahara Traders (Agro-machinery Dealer)**

Sahara sells Chinese tillers and rototillers subsidized through the DADO and to individual clients paying full price. He sells larger tractors as well but all units must be ordered; there is no inventory. Business depends a lot on government subsidies and project referrals/assistance as well as planting and harvest seasons. Some of the units have thrashing, seed grading/dressing drum, and seed drill for wheat attachments that can also be ordered.

Units are not well-built and last only a few years. Indian units are much better but more expensive, and seldom sold. The smaller tillers are most often sold to SACCOs for vegetable production especially if government loans or funding is provided. He also promotes them through AV and crops dealers but sales are best on an informal level. He would prefer to have inventory but no units are sold on consignment and he cannot afford to stock them but does stock spare parts and warranties engines and

gear box for one year for which he sends technicians out to fix them if needed. Training technicians is expensive but he has trained some for three months in areas where he sells a lot of units.

He advertises through local newspaper, FM radio, and CSISA demonstrations but demos are expensive for him to do himself. DADO and CSISA also recommend his units and farmers have been subsidized 25% from CSISA and 50–75% from the government. Business is growing and he indicates the best advertising is from customer satisfaction. Farmers like the labor savings of mechanization especially in labor-stressed areas and also say that production is better. It takes one day to till one kattah by oxen but less than an hour with the tiller, which costs NR 500–700/hour.

He requests assistance for advertisements and demos, training mechanics, farmer training, and linkages with MFIs for a credit package but this may not be needed as most get a subsidy or finance themselves.

### **Bha Ama Active Agriculture Center – Cooperative**

The cooperative, established four years ago, has 350 members in 17 groups, carries out NR 12 million per year in transactions and provides loans to members, fertilizer distribution, blood tests for cattle, and seed and vegetable production training. Its business is growing and it had revenues of NR 7.5 million in the last six months from services and vegetable sales. The coop has received NR 250,000 from Oxfam and is moving to a new building where it will integrate an AV and a larger CC. Oxfam also pays for one JTA and two veterinary interns. There are also three volunteers that assist occasionally.

KISAN provided a three-day business training program which the coop wants to follow-up on with business plan support, which it sees as complicated, as well as technical assistance and training, organizational capacity training, and integration of AV into the cooperative.

One of its members sells AV inputs, Pathaba Agro-vet, buying products from Best Agro-vet in Nepalgunj serving 300–400 coop farmers and others with seed, agro-chemicals, pest management, and livestock inputs. With seven or eight AVs in Chhinchu, competition is significant but its revenues are increasing and loans are provided with normal payback at harvest which draws in more farmers.

### **Babu and Sahi Wholesale Market**

The MPC/wholesale market is one of the biggest and best established in Surkhet. Established in the 1990s, the market moves about 10 MT per day buying and trading local and regional fruits and vegetables from individuals, cooperatives, and farmer organizations as well as those from national and Indian markets, much of which is potato and onion. The market has over 30 staff and is expanding its retail stalls. The market's administrative and technical capacity is well known and respected.

The MPC has provided numerous trainings and demonstrations in production, crop management, harvest and post-harvest, packing and packaging, sorting, and grading as well as crop budgeting and planning. It has working agreements with originations and trust among farmers and their organizations. Its reputation is what makes it successful as its main advertisement is word of mouth passed from farmer to farmer.

The market has worked with various development projects participating in some but has found them demanding, not complying with what was expected, and not interested in building sustainable activities

which take much longer to develop than most projects allow. The director indicates that the area is excellent for vegetable production and there are production pockets for infrastructure that can be developed. It is interested in working with KISAN and has several proposals from past projects that it will share with KISAN staff but wants to work in areas that have no other ongoing projects, develop and improve existing crops using its proven production through marketing strategies, introduce new crops such as onion and spices, as well as get local producers' input in programming.

Major constraints it wants to address include: increase production; developing MoUs between the wholesaler and farmers; use of market-led production planning and market information; employing standards such as color, size, variety; consistency of supply; improved grading and packaging; knowledge of cost of production and marketing costs; and building trust and buyer/vendor relations with producer/wholesaler.

Babu and Shahi has requested collaboration on training and demonstrations for all aspects of VC vegetables and hiring several JTAs and experts to provide training and technical assistance.

### **Bela MPC/Agri-Cooperative Seed Producers**

The cooperative has 148 members, produces 90 MT (eight varieties) of OPV rice seed, 25 MT of corn (two varieties), and one ton each of lentil (two varieties) on 65 hectares of land as well as vegetables, beans, and cereal for home consumption. All seed is laboratory tested in compliance with truth in labeling laws. Foundation seed supply has proven difficult as it is expensive and not all varieties are readily available. Rice and corn seed is graded and cleaned mechanically with other seed cleaned winnowing by hand operated machines. Storage consists of drying slabs, a large storage warehouse, and machine room; additional storage is being constructed. Seed is sold through the cooperative to local and district AVs and other local businesses. Most sold in bulk to buyers in to Nepalgunj and Chitawan, where it is repackaged and sent back through AV distributors and sold to local farmers in smaller packages at 10 to 18 times the wholesale price placing improved OPVs out of reach of many smaller farmers. It has a well-established traceability system and tags.

Revenues last year were NR 20 million with a net profit of NR 400,000. Debit consists of a NR 7,000,000 loan from a formal bank. The cooperative has a NR 5,500,000 credit with the bank. Interest is 7–14 % on crop credit and 8–12 % on loans. The cooperative has well-established linkages with credit and inputs dealers. Assistance has been provided by the World Bank, PACT project, and CSISA which has conducted demonstrations and farm observation tours.

The cooperative employs eight staff: one JTA, one social mobilizer, two drivers, and six laborers.

The cooperative's business has expanded and it seeks additional farmer members. It has developed a five-year strategic plan and has received business planning assistance.

The cooperative requests continued assistance in strategic and business planning, technicians training and salary, improved seed cleaning and dressing, packaging, and related mechanization as well as branding and farmer trainings for seed OPV production and hybrid seed production.

### **Oli Poultry Farm and Feed Mill**

The mill processes poultry and fish feed for farm use and requires about 2–3 tons of corn per day of which it sources locally along with other feed ingredients. The owner says that he is a small, independent farmer and neither wants nor needs any loan, credit, or technical assistance from projects. If he wants to expand he will pay for it himself or take out a loan.

### **Harit Karanti Agriculture Cooperative**

The cooperative consists of 99 members, has been established for four years and produced 101 tons of rice and 66 tons of corn seed last year. Its target is 318 total tons this year. Seed is collected from farmers and sold through local AVs, (20%) the South East Asian Seed Company, and district and other buyers in Nepalgunj. Seed is processed and bagged with a husker, separator, and cleaner in a 500 square meter warehouse procured with a 65%/35% cost share with the government. Loans are provided to members and are paid at harvest time. Seed is analyzed by a NARC laboratory for truth in labeling and traceability system.

The cooperative has two experienced production and processing staff, an accountant, and managers. One of the managers has a MSc in agriculture and trains farmers. There are three volunteer trainers that also provide training through a lead farmers program

The cooperative requests technical assistance and training on seed use and production awareness for lead and local farmers to increase the use of improved seed; production, strategic and business planning marketing plan; negotiating and developing agreements with seed companies; integrating horizontally with other rice seed producers for market power; a quality control program; seed packaging machines and material and training; attracting more members through investment and service provision; and developing potato seed production system

### **Nil Kamal Agro Machinery**

Dealer sells tractors, rototiller, and repair shop services. It sells more than 200 units per year of Chinese manufactured equipment. Most of sales are through project and government subsidized programs. Chinese equipment is cheap but of poor quality. Farmer can earn enough to pay for the machine in a year or so of constant custom work and transporting products to markets (ca NR1/KG). Engine and gear box warranted for one year during which breakdown are expected. Shop sends technicians out to repair equipment. Spare parts are readily available. No finance is provided but buyers who do not receive subsidy usually sell farm animals or get loans from family/informal channels.

Owner works through CSISA but does not provide demonstrations on his own. Best advertisement is farmers operating the equipment. Farmers need training on maintenance and use which he provides but does not really want to be involved in training or grant program.

### **Gorai Agri-Produce Market**

Wholesale market trades in all types of vegetables. Market has 42 sellers and 35 stalls/shops on 7 kattah serving some 3,000 farmers in the Ghori agriculture catchment with sales of NR 500–600 million per year. Market management is composed of three farmers, three traders, and three government officials. Throughput averages 15 MT per day, depending on season: 60% bulk, 20% in 5 kg lots to retail sellers,

and 20% retail. In the last two to three years, volume is reported to have declined but prices have increased. Imports from India have taken up much of the supply. There has been an outmigration from the area and youth do not have the knowledge to support continued agriculture production. Irrigation is also a problem. The market remains optimistic on the whole as vegetable production is very profitable. One problem is that the market does not have linkages with AV dealers and technical support. Farmers are reported to buy the cheap inputs although improved ones are available. Farmers do not see credit as a problem as remittances are widely received and MFI is available in area. Farmers do not grade or sort – this is done in the market. Different qualities go to different markets: best, mostly hybrid, going to Pokhera for tourism market, medium quality to Bhutwal, and lesser to local markets.

The municipality has 0.5 hectare of land for a new wholesale market location; the present location will be retail only. When this is complete, additional investment will start. Present rent (NR 45,000) is hard met due to cash flow constraints. A partner is sought to share expenses such as an AV dealer.

The market has requested assistance with market management plan; strategic and business planning documents to meet cash flow needs and develop a cash base; and attracting a business partner such as an AV. Additional assistance is needed for training in administrative market operations, technical training in market operations, post-harvest technologies, and transportation strategies.

The market has a “business plan” from the NEAT project that needs to be shared.

This organization initially opened as a SACCO and has turned its efforts to agriculture cooperative operation as well. It has 105 active members including 38 women involved in vegetable production. It has NR 118,000 in debt, NR 181,500 in investment, NR 71,000 in savings, and share capital of NR 251,000. It received a three-day business training last year from KSAN. Its vision is commercial development with improved income for members. The cooperative has begun to sell AV supplies, provides credit to its members, has developed a CC and storage facility, has good market linkages, and provides some technical assistance to members. One of the members has a tractor/tiller and provides custom farming services and transportation of products to market.

The cooperative desires to expand its operations and membership base. It has a five-year plan which it has begun to implement with proceeds from the AV operation and MFI. It has started an AV shop with seeds and livestock inputs and received a license to sell agro-chemicals, all financed by the cooperative. Its goals are that all farmers install tunnels or greenhouses to protect tomatoes from winter rain and temperatures. It will provide technical seedlings on site through a nursery and sell extra plantlets. It plans to sell vegetables, develop a CC, expand AV sales and service, and buy a power tiller for land preparation and transporting goods to market.

The cooperative requests technical training and assistance, employment of JTAs, funds for demonstrations, and further development of its strategic and business plans and expansion of its AV shop.

### **Sawra Rice Mill**

This rice mill buys and processes rice, wheat and corn from local farmers; 12 MT rice, 2 MT wheat, and 15 MT corn (some lentil) per year through agents and cooperatives. It is reported that Dugar buys only 10% of local production. There is no market problem. All cereals are sold to Bahirahawa, Bhutwal, and other markets or to other large buyers in area. Raw product quality is an issue as there is no consistency of product supply. Better prices would be offered for quality which could be achieved at some at the cooperative level with cleaning machines. Recovery from processing is about 60–65% cereal, 7–8% bran, and 20% husk.

Owner provides loans and some training to farmers but training could be increased. He employs two mechanics and seven to nine laborers. He works with 300 farmers but could expand to 600 with upgraded machinery such as rubber roller technology for husking which causes less damage (broken grains). This would increase prices to farmers. He is willing to add JTAs if project assists to hire them to promote improved OPV technologies and quality.

Mill requests assistance to hire JTAs to improve suppliers' product quality and productivity through production, post-harvest and cleaning machine training; newer technology processing machines; and working capital or linkages with source such as government and/or MFI/bank

### **Madav Agri-Nepal Products**

Agro-vet started nine years ago and now has three staff and his wife who assists. He sells livestock and agri-products, OPV seeds, and irrigation supplies from Kathmandu, produces vegetable seed, and provides loans to farmers. There are five AVs in Tulsipur and all five joined to form Seed Company where they provide foundation seeds to farmers who grow them out for seed and sell to Seed Company. His focus and reason for success is customer service. He looks for interested farmers and lead farmers and provides training and demonstrations (30 per year) from his own resources to farmers. He also contracts to development organizations and teaches farmers to upgrade production through post-harvest processes and technologies. The AV does not advertise on radio as others do; however, DADO recommends his shop but he reports with no particular partiality. AV procures inputs from Kathmandu, Chitawan, including Agri-care, and India. These products are distributed to eight AVs he owns. Owner reports that most AVs do not have technical knowledge, which hurts farmers, and points to an example of them selling small potatoes as seed potatoes.

The owner is a progressive businessman and request assistance providing additional technical services, demonstrations, staff, seed packaging, and marketing services.

### **Siddartha Agro Center**

Agro-vet established 15 years ago sells hired seeds from India, Nepal (Annapurna Seed Company, KTM, Nepal Seed Company), corn seeds from Chitawan, and hybrid seeds from Thailand. Enterprise sells irrigation and various other agro and livestock products from 70–80 companies, including imports that he sells retail. Enterprise has an agreement with DADO office to supply subsidized products but believes PS can do better than subsidies. Works with an estimated 5,000 farmers, 40–50 retailers, and has five full-time staff and two family members. Products are distributed by bus, plane, and truck. Owner has developed a system for providing technical assistance, training, and demonstrations. He has developed

sales agreements with AVs and lets them promote their own items not requiring them to brand as his AV. Owner reports that AV businesses cannot operate without providing credit which is 20% of his sales; livestock medicine is costly and uses much of his operating capital. Government livestock JTAs are not very well trained which negatively impacts farmers. He knows of NIMBUS in Dang where they provide feed items but not in Ghorai and has no intention of working with them. He says that he spends too much time in meetings.

The owner wants to continue to expand business and has requested assistance training livestock and agro JTAs to train farmers and cooperative members but he does not have time to train them so provision needs to be made to do so; training also requested to train operators of his satellite AV shops in business management including strategic development and planning.

### **Kisan Traders Agri-machinery**

Mechanization dealer sells Chinese drive-behind tillers (24 units last year, expect to sell some 75 this year), rototillers and wheat seed drills, thrashers, and fertilizer spreaders. Owner also provides service and repairs and sees business expanding in coming years. Much of his sales are subsidized by DADO, 50/50%. Some sales are to some farmers' organizations who rent services out; six groups bought machines this year. Units sold on credit are paid off in about 4–6 months and most non-subsidized are cash sales. Very few farmers take out loans as they have to pay interest so they sell oxen or other assets to buy machines. If there is a breakdown, the owner sends technicians to field with spare parts. He has not trained local mechanics but this is a possibility that could improve sales. When units are sold, the owner provides two hours of orientation, as margin is low and additional training is not economically viable but he reports the need to provide better technical, operation, and maintenance training.

The biggest savings to farmers using mechanization is labor. Plowing one kattha with oxen takes a full day but by machine only 2 hours, costs the same, and production is reportedly better. KISAN and CSISA provide recommendations to farmers and cooperatives on the utility of mechanization but the owner feels additional promotion to lead farmers and LSPs will enhance awareness and should be done.

Owner requests assistance with subsidies (50/50%), training on power tiller operation especially in seeding, provide seed to farmers, and maintenance and repair training to reduce number of calls he gets for breakdowns. Also, he requests program support to attend agri-fairs, develop a guide for operation and maintenance.

### **Rapti Feed Industries**

The lead for this visit came from Mr. Oli who refused assistance. This entrepreneur is building a broiler grow out facility with four partners and needs to develop a feed mill. He is interested in buying corn and other components for feed for 10 MT per hour in the computerized mill, the requirement for which is approximately about 300 MT per week. The investment into the mill is NR 45 million; total investment 220–250 million. The initial plan was to buy feed from Chitawan or Birgung but it has been decided to source it locally. Investor estimates it will be running in one year.

This operation is a possible candidate for warehouse receipts program as well as a market for corn. The lead investor needs to consult with shareholders but is very interested in working with KISAN to develop a corn source.

### **Kualpur Wholesale Market**

Market was established many years ago by DADO and municipality assistance. SIMI project, government, and CEAPRED have invested into various infrastructure and training initiatives. Owner is former MPC and cooperative leader that decided to establish his own market. There are nine active traders and a haat bazaar which has about 45 daily retailers. There is a 2,400 MT government cold storage in the market compound that charges NR 380 per quintal for up to one year that is mostly used for potatoes and onion. There is a cold store over the border in India where “everything is subsidized” for NR 272 per quintal. Product source is local farmers that have mostly received seed and other inputs from projects. This worked well until projects withdrew and now production is flat partly due to Indian subsidized prices and location of large wholesale market in Nepalgunj where larger volumes are sent. The owner also reports there are many government programs that farmers are not aware of providing inputs, production, crop management, post-harvest, and marketing assistance but it does not extend to all farmers and resources are limited. Occasionally owner will sell on consignment but it takes so long to sell that quality is poor or market price has dropped significantly and it results in a loss for the farmer and his costs of storing and marketing. The municipality government will not let him rent for more than one year at a time which precludes his investment into the market. Neither he nor other traders in the market provide training or assistance to farmers. He has applied for government grant but told his business was not properly registered.

Main constraints are lack of production coordination and understanding of supply and demand; lack of working capital, short term stall lease, competition from other markets and India; and poor market infrastructure.

Owner requests working capital tied to business plan; training for farmers to coordinate production with supply and demand; mini cold store; truck; funds to employ technical staff to train farmers; and low-cost packaging, grading and packing system

### **Nepalgunj Agro-Product Pvt. Ltd.**

This is the seed production mill's second year of operation. Mill buys from traders and processes 100 MT rice seed, 10 MT lentil seed, and 78 MT wheat seed, and grades seed for sale in India. Seed is from OPV improved varieties sourced from about 50 farmers. Owner provides seed and some working capital to farmers. Owner sees business growing and has doubled his processing and trading targets for coming year. Machinery is used and not that efficient. Owner has ample storage until he expands substantially.

Owner requests salary for manager for storage facility; technicians to train farmers' organizations; and quality grading and mixing machine (for treating seeds with chemicals).

### **Nepal Grain and Agro-vet (Global Agri-tech Nepal - GATE)**

The enterprise has four focus crops and processes the following: rice 350 MT, wheat 210 MT, lentil 16 MT, and maize 55MT. Initial assistance came from DFID. Also among its shareholders is FORWARD (Forum for Rural Welfare and Development). The mill supplies OPV foundation seed, technical assistance, credit, and technical seed production services to cooperatives mostly through KISAN, DADO, and NARC. Inputs are sourced by farmers through AVs, government, I/NGOs, and India. The processing and storage facility now occupied is being leased and a new building is being built. The company's vision is to grow. Farmers benefit from markets (offer 15%–20% more than consumption cereals). The company market segment consists of farmers, non-profitable organizations, and AVs. The company is very well managed and business oriented and focused on developing sustainable, profitable partnerships with AVs.

See Link Below for Detailed Information

[https://www.theseus.fi/bitstream/handle/10024/55689/sen\\_ashesh.pdf?sequence=1](https://www.theseus.fi/bitstream/handle/10024/55689/sen_ashesh.pdf?sequence=1)

The company has requested practical production and grading training; marketing assistance for promotions and workshops; and high-quality processing and seed treating mixing machine.

### **Ram Dhal Mill**

Locally in Banke, there are 112 traders, 25 millers, 5 SACCOs, 8 cooperatives, 7 AVs, and organizations that produce, process, and trade. This 1,000 MT per year lentil mill buys its entire lentil from traders as farmers cannot produce the quality, volumes, or timing. Mill capacity is 10,000 MT per year. Source is about 400 farmers in 20 groups on 670 ha of land. Mill would rather buy from farmers if quality is assured but this would cause tensions between farmers and traders. Farmers are not interested in developing buyer/vendor relationships. They often approach the mill to sell but the next day they get a better price they deliver to the better offer. One of the main problems is that there is no contract farming law. Another problem is that farmers are using traditional practices; subsequently, they do not use quality inputs and seed replacement is less than 3%. Weed control and end-crop management are also problems. The sera, a measure of lentil quality, of lentil received are less than 55% locally. In eastern Nepal the average is 95%. All of the mill's lentil is sold in Nepal. Bangladesh market is closed/blocked. Competition is Canada and Australia and some comes through India via illegal channels. Nepal market cannot be satisfied by national production. Price is determined by international and Indian markets; there are no guarantees on price to traders or farmers as the market is very dynamic. The owner reports that continued training on production is needed but also use of lentil cleaning machines would be a great help and increase prices offered to traders and farmers.

The owner's request is to support farmers working with and supplying to his traders with production, seed awareness, crop management, and improvement Sera through use of cleaning machines. Mr. Modi will provide market and identify who traders are after which KISAN can coordinate with them.

Mr. Modi is an experienced, knowledgeable miller that can communicate with traders what will provide farmers with greater returns and is operation with better quality lentil for processing.

### **Krishi Upakar Multi-purpose Kendra Cooperative**

The cooperative, founded 10 years ago, produces rice, wheat, and lentil seeds. Foundation seed is obtained through NARC, however the cooperative often has to visit several NARC offices to get a sufficient amount. Several different varieties are grown and priority for seed is given to cooperative members to receive seed. Inputs are procured from AVs and fertilizer procurement coordinated with the government. Last year 9 MT rice, 16.2 MT wheat, and 6.7 MT lentil seed was produced. This year's target is 50 MT rice, 50 MT wheat, and 20 MT lentil. The seed is laboratory tested for truth in labeling sales after which seed is sent to buyers some 26 different districts based on variety and demand that DADO has collected. Newspaper and FM radio broadcast are also used for advertisement. Seed is sold directly, not through a trader, which saves a minimum 5% on the margin the trader would have charged. District AVs and large buyers receive a discounted rate for volume. Training and technical assistance is provided by NARC, the Agriculture Service Center, and the cooperative. Increased training would increase productivity, reduce costs, and result in improved quality all increasing returns to farmers.

The initial investment for seed grading machinery was cost shared by FORWARD but at this point does not operate effectively. Much rice is broken resulting in a 5–8 % loss. Furthermore, the machine is suited to rice and wheat but not lentil. There is also a mixing machine operated by hand that is only useful for five kgs of lentil or less at a time and does not mix the chemicals and seed effectively.

The cooperative reports it has a business plan developed in coordination with NEAT, for the building, which should be requested by KISAN to see if it can speed up the application process. Improved machinery would result in less damaged seed and better returns from sales.

Additional revenues from improved cleaning and treating machines would be generated by charging other farmers NR 50 per kg. It is reported that up to 25% extra could be received from better-cleaned seed. Aside from machinery, training and technical assistance in production, technologies, and crop management would increase productivity and quality.

### **Dev Var Rice Mill/Processor**

This mill has been in business for 25 years and processes an average 5MT of rice per day all year. Most rice is bought directly from farmers' organizations (approximately 230) and some through traders. No technical training or assistance is provided as owner reports that although he is close to farmers, aside from loans for inputs and providing a market, he does not really understand the farming system and agrees it would be valuable to him and the farmers to develop partnerships. It is reported to him that the main production problem is lack of irrigation. For inputs, he coordinates with AVs and sends farmers to certain ones that he knows have the inputs they need. One of his markets is the Nepal Food Corporation which has a local quota of 50,000 quintals which pays approximately 10% more than market, but selling to the Corporation is complicated and he sells little to it. Often when the quota is filled, the price drops 10–15%. Other markets are the mid- and high-hills which he sells to in 25, 30, and 50 kg bags. Existing equipment includes husker, polisher, paddy grader, separator, and elevator but the equipment is dated and he reports that rice produced in Nepal receives approximately 25% less than that produced in India due to quality, much of which is directly related to processing equipment. Although load shedding is not much of a problem in Nepalgunj, insufficient raw products and labor

shortages do exist and he runs his mill for only 12 hours per day which he claims is underutilized and results in higher operations costs. The owner reports the market for rice is growing in Nepal and he could double his business. Assistance would increase productivity and quality, lower costs, and raise returns for he and the farmers.

The owner requests production training, irrigation installation and management, improved storage and handling techniques and technologies. He is interested in cooperating with KISAN and is interested in ideas that he can implement, identifying and arriving at the win-win partnership scenario between the mill and farmers.

### **Prinyanka Agro Machinery Supplier and Modern Agro Seeds**

Owner supplies mostly larger, Chinese made (NR 12,000 to 25,000 price range) non-drip irrigation pumps and equipment operating on diesel and kerosene. He retails 500 per year to clients and 250 per year to hardware stores. AVs don't really want to deal in these sets because the service and repairs are not associated with their core business. Some sets are subsidized through DADO which has about NR 15,000 to 20,000 lakh budget primarily to farmers groups subsidizing 25% to 75% of cost. What determines the level of subsidy was not clear.

When he started eight years ago, demand was limited as costs of Indian sets was high but now with cheaper sets available from China, demand is growing, and quality is diminishing, and WTO agreement has reduced tariffs. He sells equipment in Bardiya, Surkhet, and Banke; Bardiya is the best sales area as there are fewer tractors with attachments and land plots are more spread out and not on canal systems.

He has one well-trained mechanic that graduated from the Council of Technical Education and Vocational Training Nepal (CTEVT) which he reports is an excellent school. Classes are about six to seven months (it may be of value to link up participants with this school for sourcing trained mechanics). Most farmers know how to do basic maintenance and repairs and get spare parts. Awareness of the utility of these pump sets was built during SIMI and subsequent projects and there are government FM broadcasts that continue awareness dissemination. Sales are to individuals more than groups which rent sets for NR 400 per hour that pump 90 liters per minute and use about 0.5 liter per hour (liter costs NR 90). One new market opening up is the charpi/toilet cleaning market where sewage is pumped out, up to one kilometer away. Its final destination was not identified.

His business is growing and he is interested in expanding his product line to include tillers sprayers and other products. He requests assistance in developing a strategic and business plan as well as technical training to more mechanics.

### **Kisan Bahuddeshiva Sahakari Sanstha Ltd.**

Established in 1993 as an MFI with a license from Nepal Rastrya Bank, the cooperative has some 26,000 members, 24,000 of which are women. The bank has 10 branches in the Terai and hill regions. It has NR 500 million in capital, loans of NR 800 million, 86 headquarter employees, substantial office infrastructure, and provides numerous types of finance products including rural door to door savings and credit services. Interest rates are 12–15% annually. The bank loans to agriculture through group

lending for livestock, cereal, and vegetables; 10,000 borrowers out of 26,000 are for agriculture. Most farmers are subsistence or partially commercial with holdings less than 5 kattah, many much smaller and mainly produce rice with excess sold to middlemen. All other products are sold at local haat bazaars or door-to-door, which does not provide sufficient returns for the inputs. There are no farmer organizations, CCs, or market centers among the borrowers. The bank provides no services to agriculture clients.

Bank wants to lend but people don't know what to do with the money. In short, the bank has money and wants to do something with it. It has no specific agriculture capacity, provides no technical support, aside from requesting the DADO and ASC for assistance on technology and inputs for farmers. It will ask the World Bank, which is to visit soon, if it wants to partner to invest in a cold store and a warehouse. It reports to have no other linkages with projects.

The bank has requested that KISAN work with it to assist it developing its agriculture service capacity. It is interested in small scale irrigation, village level mechanical enterprises, a cold store and a warehouse for potatoes; which it believes should be the focus of its program. In short the bank wants to get involved in agriculture, has resources and has requested assistance in developing it. The bank has no developed plan or strategy. The bank is a valuable partner to have for finance and could provide finance outside of its traditional clients.

### **FulFul Tatha Tarkari Babasya Sangle - Wholesale Market**

Stall in a wholesale market with 24 total stalls, 10 of which are active. Owner received various assistance from projects including government, iDE, Women Empowered Through Irrigation Training, RANI (World Bank), and RVWRMP. MPCs and CCs are not active in the area although the stall owner reports NR 2 million per month in sales. Vegetables are sourced locally when they are available and from India the rest of the year. In brief, the stall owner is satisfied with his existing activities and not particularly interested in

### **Unique Seed Co. Pvt. Ltd**

Company produces rice, wheat, and lentil seed working with 200–300 farmers that receive breeder seed from NARC. Some seed is procured through Pantanagar University, India, when NARC does not have a sufficient amount. Very little certified seed is produced, most is improved OPV seed such as Sarju 52 which is not registered in Nepal but grows well and is what the farmers want. Company has had success with contract farming until recently, which was not elaborated on. Company provides technical assistance and seed and leaves farmers to source and provide the rest of inputs. Fertilizer has not been a problem, through the government, until this year. This year, the company processed 250 MT wheat seed of which 117 MT was sold to government and the rest to AVs and farmers; 40 MT of maize was processed and an insignificant amount of lentil. The company's management and owner are experienced, well-trained visionaries that understand the industry and market. The company has one MSc plant breeder on its staff and seeks to employ more.

The company had storage constraints but has received a grant through the government to build more storage, a seed certification laboratory, and improved cleaning and treating machines. It also plans to

produce hybrid seeds which only a few companies in Nepal produce. This work will have to be supported by scientists and breeders. Power is not regular but grant has provision for generator.

The company requested assistance from KISAN for breeders and scientists to help it get its hybrid seeds program operational. If it begins to produce vegetable seeds it will request assistance for that as well.

### **Vibek Feed Industries**

Company established in 2001 produces day-old chicks (5,500/week) and livestock feed for poultry, cattle, pigs, and fish as well as poultry – 2 kg birds in 35 days. Company has network of 17 dealers who also work with multiple farmers. Feed components are bought from India but owner believes maize can be produced competitively in Nepal if farmers are willing to work at it and technical assistance is provided. Owner cites an example of that opportunity is now, between the wheat/vegetable harvest and rice planting in approximately 2 months. This is a 3+ month window, after lentil, to grow corn but now the fields are empty; maize could be planted. Some feed mills speak of the threat of India closing the border, which would cause a raw product shock, but it is unlikely and there are always alternate routes to and from India. Mill capacity is 5 MT per hour (8 hour shift) and 70% of feed is yellow corn requiring 28 MT per day of maize. Often Indian hybrid is not available and many farmers in hills produce white corn which is not suitable (OPV produces 4 MT/ha; hybrid 8). One variety is available and more eco-niche varieties are needed. Company works with 200 farmers directly and its dealers with an estimated 3,000 more. Corn is low quality and contains much foreign material. Mill pays premium (NR 20/kg) for grade A, buys grade B for prevailing price, and does not buy grade C. Company pays same price for local as does for Indian import; NR 25,000 per MT. This is the time of year when prices are higher and Nepal could take advantage of corn production.

Market is booming as witnessed by ready-made feed fair we attended with scores of feed mill booths and ancillary feed products on display. Fair was officially opened by Minister of MoAL the day before. Essentially, feed mills cannot satisfy farmer demand. Same for quality day-old chicks of which US breeds have been genetically selected and perform very well. Mill is environmentally designed to not produce smoke as it uses rice husk to produce steam.

USAID has visited the mill and the owner reports the agency is positive on supporting it. Other support from projects has been received but no reported assistance at the time of this writing. Company and its management are impressive and offer an excellent opportunity for grant application.

Company requests assistance in training farmers in production and crop management; post-harvest (a major problem); cleaning; storage silos of 150 MT; support to hybrid seed producers; and assistance in expanding poultry chick production.

### **Sri Pariwarta Bahudesiya Sahakari Ltd. - Cooperative**

Cooperative has 478 members, of which 117 are male. The cooperative has a CC selling 100–200 kg/day, provides low-interest loans for agriculture of 6–12 months at 12–16%, and savings accounts at 12% interest. Other activities include bamboo furniture training and production, milk collection, and child care. An MPC has been formed and has good linkages with wholesalers and the cooperative has

established a weekly haat bazaar. CC and cooperative building are on a 10 year rental agreement with first five years rent free with Municipality, and are located on a road with good market access. Irrigation is a constraint that needs to be addressed

Cooperative provides no technical training but KISAN staff and LSP trainers are cooperative members so they provide training. Cooperative members have been on a learning tour to Modan Pakhera MPC/cooperative and want to replicate that very impressive organization. This brings to mind the idea of incorporating a highly successful cooperative as Modan Pokhera on board as paid trainers. Cooperative President is impressive and motivated and grant assistance would be a good investment.

Cooperative has requested training on strategic and business plan development, cooperative administration, irrigation of fields (not small-scale drip), agriculture technical training and assistance for vegetables and cereals, developing an AV operation, and utilization of mechanization including procurement and rental.

## ANNEX 2: LIST OF MEETINGS

Meetings with KISAN staff, MFI partner DESPROSC, SMARTH, CIMMYT, and NIMBUS Holdings Pvt. Ltd. to discuss:

- technical feasibility and economic viability of institutionalizing embedded, or support services in lead firms on national level and established value chain enterprises on regional/district level;
- enabling environment required to institutionalize services in private sector organizations;
- requirements for and progress of lead firms developing warehouse receipts program;
- development of meeting list and schedule of field visits of KISAN private sector value chain enterprises; and
- developing initial selection criteria for grant program candidates.

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**Table 2. List of Meetings**

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**Depart NM 3/19, arrive KTM 3/21, PM**

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4/22

Jeff Apigian, acting COP/Winrock HO staff and Praveen Badiya, Business and Contracts Director, KISAN

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4/23 – 4/31

KISAN/KTM Staff: series of meetings with relevant staff, COP to understand existing project and proposed modifications, grant manual, existing MoUs for private sector, develop schedule, communicate with field staff, develop meeting questions, etc.

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4/30 DEPROSC – KISAN MFI provider

3/30/15

Krishna Neupane, Project Manager KISAN (to be reassigned to a new project

Mr. Toyanath Pandey, Newly signed KISAN project manager

<http://www.deprosc.org.np/>

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4/30

Sital Drip Irrigation Technology Industry – Thapa Mold and Die

Chandra Thapa, Proprietor

Rajan GAire, Manager/Irrigation Technology

Lalitpur, 9849286135; [chandu@tmd.com.np](mailto:chandu@tmd.com.np); [www.tmd.com.np](http://www.tmd.com.np)

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SMARTH – Nepal Market Development Program

Tim Stewart, Portfolio Manager

Latipur, Nepal

977-1-55437 / 5538985

[Tim.STEWART@smarth-nepal.com](mailto:Tim.STEWART@smarth-nepal.com)

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CYMMIT

Andy McDonald, South Asia Regional Director

Kathmandu, Nepal

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NIMBUS

Anand Bagaria, Managing Director

Kathmandu, Nepal

977 | 4467791

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Wednesday, 4/1, Surkhet

2) Bheri Agriculture Cooperative (Krishi Bazaar Cooperative LTD.), Surkhet (MPC)

Lal Bahadur Deshi

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3) Project Enterprise Center - Cooperative

Pashiba Singh Chaudry, What is his title?

Location; phone

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4) Ganga Mala Savings and Credit

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Yanga Prasad Dhakal, Director Chhinchu – 7, Surkhet
5) Shital Agro-vet Owner Address, Surkhet
4/2
6) Sahara Traders (Agro-machinery Dealer Tul Bir Bistha Surkhet 9848231343
7) Bha Ama Active Agriculture Center – Cooperative
8) Babu and Sahi Wholesale market and MPC Surkhet
4/3
9) Bela MPC/Agri-Cooperative Seed Producers Moha Khanal, Contact Person, Coop Leader 9844920277 Lamai, Surkhet
10) Oli Poultry Farm and Feed Mill Shenardhar Oli, Owner 9857921153 Ghorai, Dang
11) Harit Karanti Agriculture Cooperative Sonpur 2, Kenniya, Dang
4/3
12 Nil Kamal Agro Machinery Dang
13) Gorai Agri-Produce Market Gulam Rasul, Chairman Ghorai, Dang 082561420
14) Kabila Agriculture Cooperative Om Pan Desur Dang 082563006
15) Sawra Rice Mill Kishor Raj Giri Dang
16) Madav Agri-Nepal Products KS Madav Tulsipur, Dang
17) Siddartha Agro Center Ghoari, Dang Yek Narrayan Poudel 9857830329
18) Kisan Traders Agri-machinery Radheshyam Chaudhary Lemahi, Dang
19) Rapti Feed Industries Raj Kumar Dili, partner Dang
4/6
20) Kualpur Wholesale Market Kualpur, Banke

Meeeting with KISAN field staff, Nepalgung office to discuss embedded services, warehouse receipts concept, schedule, of visits and agriculture environment in west and far-west
21) Nepalgung Agro-Product Pvt. Ltd. B J Chaudary, Managing Director Banke 97480097054
22) Nepal Grain and Agro-vet Tika Ram Rijal, marketing manager 9858021979
23) Ram Dhal Mill Chadie Lal Modi Banke
4/7 Attend KISAN Workshop, Nepalgung
4/8
24) Krishi Upakar Multi-purpose Kendra Om Prakash Chaudhry 9844888639
25) Dev Var Rice Mill / Processor Arvinda Shar / RameshGupta Banke 9858022603
4/9
26) Prinyanka Agro Machinery Supplier Uprenda Chaudhay Nepalgung, Banke 9848058085
4/10
27) Kisan Bahuddeshiva Sahakari Sanstha Ltd. Dambar Bahadur Shah, Chief Manager Lamki Chuha Kalilali
28) FukFul Tatha Tarkari Babasya Sangle - Wholesale Market Tejraj Paneru Attariya Kailali
29) Unique Seed co. Pvt. Ltd Lok Raj Joshi Dangadhi, Kailali 9848625995
4/11/
30) Vibek Feed Industries Vivek Bhatta, Owner, Managing Director Dhangadhi, Kailali 091523757 / 9858420717
31) Sri Pariwartan Bahudesiya Sahakari Ltd. - Cooperative Nanda Bhatta, President
4/11 Return to KTM, PM

## **ANNEX 3: MEASUREMENT CONVERSIONS**

Reference: Units of Land Measure in Nepal

### **Land Area Measures in Nepal**

Kattha : 20 kattha in one bigha

Bigha : 1 bigha = 0.67 ha, or 1.6 acres, or 8,100 sq yard, or 20 kattha or 13 ropani

Hectare : 1 hectare (ha) = 1.5 bigha, 30 kattha, 20 ropani

Ropani : 1 ropani = 5,476 sq feet, or 0.05 ha or 4 muris

Muri : 1,369 sq feet; 4 muris = 1 ropani

### **Conversion in Local Measurements**

20 Dhur : 1 Kathha

20 Kthha : 1 Bigha

4 Paisa : 1 Aana

16 Aana : 1 Ropani

4 Naali : 1 Ropani (in the Western hills)

1 pair of oxen : 3 Ropani (in the Eastern hills)

### **Quantity Conversion**

8 Maana : 1 Pathi

3 Maana : 1 Kg

20 Pathi : 1 Moori

1 Moori: 80 Kg (paddy), 60 Kg (Maize, millet)

## ANNEX 4: CRITERIA FOR SELECTING GRANT PARTICIPANTS

<b>Enterprise Selection Criteria</b>	<b>Score</b>
Innovators and drivers of growth in the industry/value chain	
Provide, or will, embedded support services such as pre-financing, technical advice and/or inputs, market information, etc. in order to address gaps and ensure a quality product that meets market standards; and interest	
Have existing commercial linkages and a strong demand exists for the products or services	
Have sufficient financial strength to make cost-share investments, dedicate resources to business operations	
Have the potential to change the institutionalized standards in the industry that reward farmers for using sustainable growing practices, volume or quality that will result in improved and/or expanded relations with and higher returns to farmers	
Willing and able to make long term commitments and sustain its relationship with farmers after the project ends	
Have an acceptable record and reputation as businesses/enterprise	
Have potential to influence other firms and actors in the value chain – proven confidence and trust of VC actors (pillar of embedded service success)	
Have potential to increase the amount of product purchased directly from farms, cooperatives or farmers groups	
Have potential to expand sustainable market opportunities including value addition through strategies such as certifications	
Have existing vision, strategic/business plans, articulated vision to facilitate ramp-up and be completed within grant widow of opportunity	