AGROVET STUDY – JANUARY 2016: FINDINGS / RECOMMENDATIONS

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ACROYNMS

CDO	Chief District Officer
CTEVT	Council for Technical Education and Vocational Training
DADO	District Agriculture Development Office
DLSO	District Livestock Support Office
EIG	Education for Income Generation
FM	Frequency Modulation
GIS	Geographical Information System
GoN	Government of Nepal
ICT	Information Communication Technology
I/NGO	International/Non-Governmental Organization
IPM-IL	Integrated Pest Management Innovation Lab
JTA	Junior Technical Assistant
KISAN	Knowledge-based Integrated Sustainable Agriculture and Nutrition
LOC	Line of Credit
LSP	Local Service Provider
MSRP	Manufacturer Suggested Retail Price
NEAT	Nepal Economic Agriculture and Trade
PAN	Permanent Account Number
Rs	Rupees
SEAN	Seed Entrepreneurs' Association of Nepal
SLC	School Leaving Certificate
SMS	Short Message Service
SN	Serial Number
SWOT	Strength Weakness Opportunity Threat
ToT	Training of Trainers
USAID	United States Agency for International Development
VAT	Value Added Tax
VDC	Village Development Committee

I. INTRODUCTION

Given the agricultural orientation of Nepal it's not surprising that agrovets can be found in virtually every large bazaar center and metropolitan area as well as many smaller towns. According to the Seed Entrepreneurs' Association of Nepal (SEAN), a membership organization focused on input retailers, there are more than 2,000 agrovets across the country. Some agribusiness entities, such as NIMBUS, are even in the process of establishing agrovet franchises. Considering this context, and the very limited extension services provided by District Agriculture Development Offices (DADOs), there is a high degree of opportunity for agrovets to fill the information vacuum, and provide farmers with the instruction and technical inputs they need to upscale their practices.

Like pharmacies that dispense medication without prescriptions, agrovets serve a similar purpose in their accessibility for the average farmer. Unlike pharmacists in Nepal, who are required to hold a relevant academic degree, agrovets have minimal training which is surprising given that they dispense inputs that can have a harmful effect on agriculture production if not used properly. Agrovets typically spend more time with customers than pharmacists, as farmers make repeat store visits according to the seasonal calendar, and as problems arise. Fortunately for farmers, agrovets provide more advice on the products they sell than pharmacists who typically draw 'shortcut' instructions on packets of medicine to illustrate dosage amount and time. That said, the quality of agrovet feedback depends on many factors including education and technical training, farming background, familiarity with product line, and patience and interest in educating customers.

"***Agrovets are the front line for farmers in terms of access to technical information and products" – Salyan agrovet.***

To investigate the current state of agrovets in the KISAN coverage area, a qualitative study was carried out in January, 2016 focused on 22 agrovets located in nine districts. The agrovets were equally distributed between Terai and hill districts. The objective of the study was two-fold: to map the agrovets' input supply system including both where they procure and sell their products; and to gain an understanding of the agrovet universe in terms of the type and volume of business they run. Through comprehensive, one-on-one interviews a range of agrovets were encountered from small 'mom and pop' type outlets with a limited product line and number of customers, to mid-level businesses catering to a larger number of clientele across a bigger geographical landscape, to commercial businesses with expansive supplier and customer networks.

The study covered a significant percentage (nearly 13%) of agrovets represented in the KISAN project database (*refer to Figure 1 below of agrovet distribution across KISAN districts).* The assessment framework methodology also took pains to interview a cross-section of agrovets so that the results would be meaningful and have a broader resonance amongst the 20 KISAN project districts. Cumulatively, the agrovets surveyed reported a clientele body numbering nearly 80,000 farmers. This figure is even greater when taking into account the end-users represented by agrovets who are also wholesale suppliers. Likewise, supplies move well beyond the nine districts the study concentrated on. For example, one agrovet wholesaler based in Dang distributes inputs to the entire Rapti Zone, consisting of five districts (all KISAN districts). The supply network of another agrovet in Nepalganj is even larger – servicing 19 districts along with 18 VDCs of Banke District – though his inputs are more limited, with a focus on seed. Interestingly some supplies even moved south of the border, though in far lesser numbers than inputs coming to Nepal from India.

Despite their bottom line sales and profit differences the agrovets all service farmers, though the percentage of their customer base that is comprised of commercial farmers, and how they define the commercial level, varies depending on location. In the hills some agrovets commented that a farmer needs to have at least 3-5 *ropani*[1] in production and earning Rs. 100,000 – 200,000/season to qualify as commercial. In the Terai a number of agrovets put the minimum figure at double this amount. The study uncovered a number of other patterns, such a typical product line and customer complaints, as well as issues faced by agrovets, principally in the form of access to new information for both farmers and agrovets. Lack of farmer knowledge, in particular, was cited by agrovets as one of the biggest barriers to business expansion. These various topics have been organized by theme with findings and recommendation presented in the body of this report.

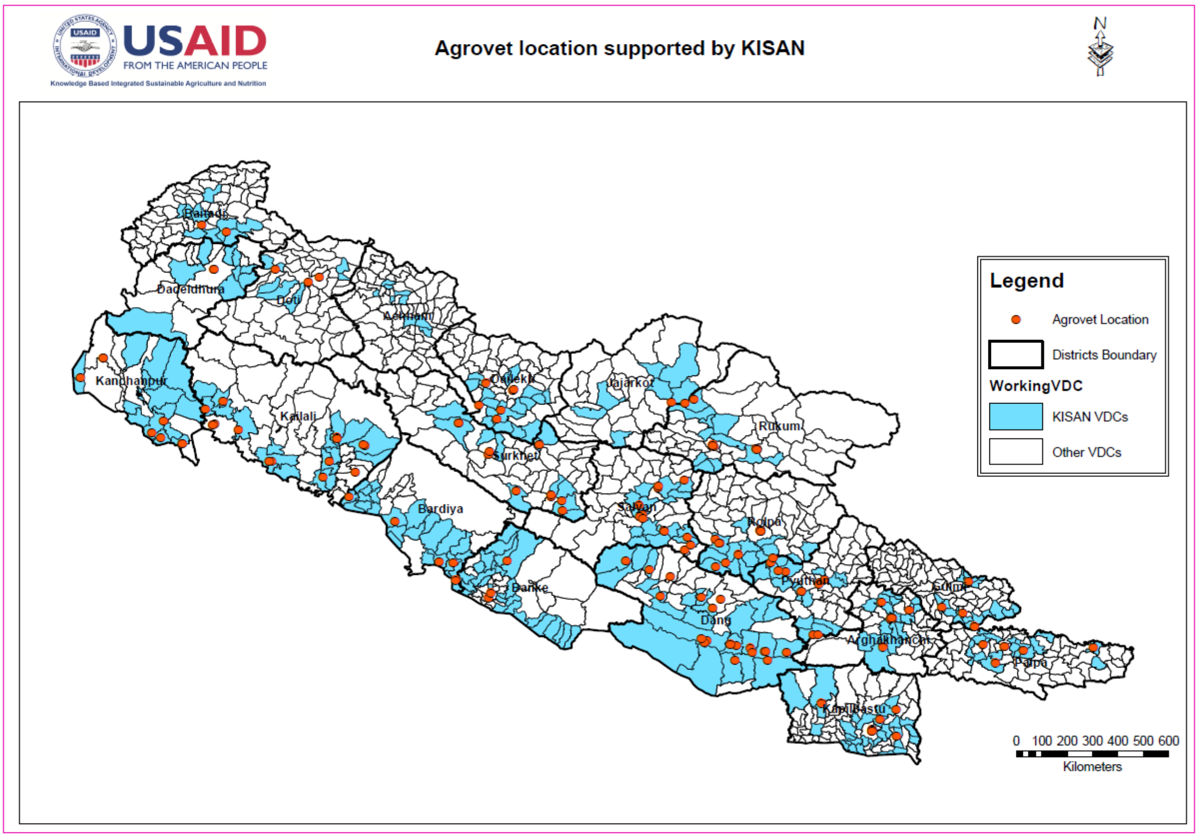


Figure 1. Agrovet coverage across KISAN districts

II. BACKGROUND

Methodology

A detailed questionnaire was used to interview agrovets about a variety of topics related to their business practices including product line, sales and customer profile, line of credit, capital investments, education and training background, and much more. As part of the process mini-

[1] One ropani = 5,476 square feet.

SWOTs were utilized to explore opportunities and constraints to their business operations and scope for potential expansion. As a result of the interviews, as well as interaction with a number of farmer groups who purchase supplies from some of these agrovets, rankings were established that classify agrovets according to their level of sales and dynamic approach to business. This latter aspect is a proxy indicator for potential business growth and ability to educate clients (*refer to Table I, Annex I for a list of the agrovets interviewed, their classification and other salient details).*

In addition, GIS maps were created for each of the nine districts where agrovets were studied tracking the interviewees' input suppliers and sales destinations (*refer to Annex II for the GIS maps)*. The maps represent samples of agrovet coverage in the surveyed districts and are most useful when seen as a whole, or at least regionally, to understand who the dominant suppliers are and how agrovet inputs move.

Capacity development opportunities

To date, KISAN has provided a minimum of 172 agrovets with a range of capacity development opportunities from pesticide retailer training to interaction meetings between Local Service Providers (LSPs) to exposure visits (*refer to Table 1 below for support details*).

Table 1. Agrovet Capacity Development Support Details

SN	Date	Type of Training/Support	No. of Participants	Remarks
1.	Feb. 2014 - April 2015	Interaction meeting between LSPs and Agrovets	40 interaction meetings	Carried out in all 20 districts
2.	June 2014- April 2015	Exposure visits	109	Multiple trips and destinations including to specialized production areas. Typically 2-5 days tour.
3.	Oct. 2014	Pesticide Retailer Training	80	3-day long & jointly delivered with GoN (3 locations)
4.	May – June 2015	Agrovet Capacity Building: technical aspects and business promotion	118	3-day long training (4 locations)
5.	Feb. 2016	Pesticide Retailer Training	33	6-day long training for new agrovets/those still uncertified to sell pesticide
6.	Feb/March 2016	Agrovet Capacity Building: technical aspects and business promotion	128	3-day long training (4 locations)

The focus of the various support opportunities provided by KISAN has been on both technically empowering agrovets while exposing them to better business practices, such as collecting product based orders from customers. Some of the training content, such as for the pesticide retailer training, was compiled with significant input from staff of the Regional Agriculture Training Center in

Banke, DADO Banke, and the Pesticide Registrar Office in Kathmandu. Besides focusing on agrovets for capacity development activities a more limited number of agrovets were also engaged by KISAN as private sector training providers, such as for hosting plastic tunnel or drip irrigation demonstrations. Approximately 20 agrovets have been involved in such activities which include a prepatory four-day long Training of Trainers (ToT) that is typically followed by a two-day long refresher, and thus contribute to further capacity development of agrovets. There is sizeable representation in this specialized pool amongst the agrovets surveyed with eight reporting involvement as trainers. Supporting agrovets to provide demos is an important awareness raising approach for farmers that also positions agrovets as more than just 'product pushers'. This is significant considering the major gap in the agriculture extension system.

Findings and recommendations included in this report have been shared with KISAN staff, including capacity development staff, who have already begun providing the latest in a series of trainings to agrovets.

Besides group activities, active agrovets have also been encouraged to apply for small business grants from KISAN. Four awards have already been made to individuals in Dang, Kapilvastu, Gulmi and Palpa. Another four, from Kanchanpur, Dailekh and Doti, are in the process of clearance. From this combined list three individuals were interviewed and separately assessed as amongst the more dynamic of the larger group. The project is aiming for grant distribution in all 20 KISAN districts.

III. FINDINGS

a. Agrovet Background

- ***Distribution of Agriculture/Veterinary sides of business:*** of the 22 agrovets interviewed the majority (73%) have a greater volume of sales with agriculture than veterinary products. Of this group two are exclusively devoted to the 'agro' side of the business and half of the agrovets reported that at least 70% of their business was generated by agriculture products. Only one agrovet (in Bardiya) reported that a greater percentage of his business (60%) is occupied by the veterinary side though he sees scope in expanding his agriculture line of products. Two of the three regional level wholesale agrovets have a more even distribution amongst the two sides of the business (50/50 and 60/40 agro versus vet respectively), while the third one is exclusively agriculture focused. Agrovets in the Terai were more likely than their counterparts in the hills to carry an equal or close to equal percentage of agriculture and veterinary supplies. Although farming and livestock rearing are closely related in Nepal, the support functions for these activities are different in terms of product line and technical preparation.

- ***Technical knowledge:*** agrovets develop their knowledge through farming and customer feedback (interestingly a number of them grow organic vegetables in their kitchen garden). Most agrovets don't have a technical background – only five are certified as JTAs – and receive technical updates through intermittent training opportunities which are mostly project dependent. The number one constraint voiced by agrovets is lack of technical updates, both in terms of knowledge and practice.

- ***Education:*** the academic background of agrovets is varied and the majority of them do not have relevant degrees (only a little over 20% are JTAs). Refer to *Table 2* below for a breakdown of the agrovets' education qualifications which range from high school drop out to Bachelor of Science holder. This table is telling in that people seem to drift into the agrovet business more because they see a market gap, or lack of other opportunities, than because of appropriate educational preparation. Of the four agrovets who operate larger wholesale businesses, two possess a BA, and the other two have an intermediate level degree.

Table 2. Agrovet Educational Background

SN	Academic Degree[2]	Number of Agrovets	Remarks
1.	Bachelor of Science (BSc)	3	
2.	Intermediate of Science (ISc)	3	One is also a JTA
3.	Bachelor of Education (BEd)	1	
4.	Intermediate of Education (IEd)	2	One is also a JTA
5.	Bachelor of Arts (BA)	1	
6.	Intermediate of Arts (IA) – Nepali	1	
7.	Intermediate of Commerce (IComm)	1	
8.	Junior Technical Assistant (JTA)/ Paravet	2	
9.	School Leaving Certificate (SLC)	6	One is also a JTA
10.	Grade Nine	1	

- ***Agrovet training/certification:*** there are minimal government requirements to operate as an agrovet including: separate seed and pesticide retailing certificates which are issued after administration of tests; a month long certification course for veterinary sales and support; and registration as a business entity with the Department of Cottage and Small Industries. The seed and pesticide retailer certification is done through DADO while veterinary certification is provided by the District Livestock Support Office (DLSO). Amongst the three certifications GoN is most concerned about the pesticide retailer one which is reflected in the fact that agrovets usually post their framed certificated in a visible place, along with their PAN number which is tied to income tax.

- Training for seed and pesticide retailer certification is organized at the district level by DADO a few times per year. However, there is typically limited or no advance notice or advertising to alert potential participants. This particularly affects agrovets not based in the district headquarters. One of the agrovets mentioned receiving seed retail training through the Seed Entrepreneurs' Association of Nepal (SEAN), though certification is still done by the Seed Quality Control Center (under the Ministry of Agricultural Development). In the latter half of 2015 the pesticide retailer training length was increased from three to six days. The seed retailer training is still two days in duration. KISAN has supported two rounds of pesticide retailer

[2] One of the interviewees was not responsive to this question.

training as a way of increasing access to the pre-certification process (actual certification is done through the Pesticide Registrar), benefiting more than 110 agrovets. No trainings have been provided by KISAN for seed retailer certification.

- Even if an agrovet has participated fully in all three types of trainings it doesn't add up to extensive technical expertise.[3] This scenario is further compounded by the fact that agrovets are not well monitored and even those who have passed the very basic operational requirements often leave retail responsibility to unaccredited individuals, typically family members, when they are in the field, or sometimes even working other jobs. This lack of oversight can produce questionable results though agrovets also learn a lot on the job so much depends on the knowledge and experience of the person manning the counter.[4] One of the larger wholesale agrovets commented that it can be problematic for him if he supplies to new agrovets who are not properly licensed.

b. Business Practices

- ***Business management:*** although studying business is not a predictor of commercial success, the agrovet with the highest reported annual sales is the only agrovet surveyed who has actually studied commerce. Just as many agrovets are not academically suited to their chosen profession there is an equally casual business environment. For example, about 25% of the agrovets do not keep track of daily sales. Amongst those who do, the practice is not always rigorous and often entails an end of the day summary. At least three agrovets reported that they used to document daily sales but have stopped doing so (apparently they found that the tedium outweighs the value). At the very least sales and inventory are not necessarily reconciled and retail level agrovets report relying on visual spot checks to see when inventory is low and needs to be re-ordered. One underlying reason for loose record keeping could be that agrovets want to avoid registering for VAT, a requirement for businesses that generate over Rs. 2 million in annual sales. Of course, there are also income tax implications.

- Only four agrovets use computerized software and these are wholesale operations that will lose revenue if they don't keep systematic track of their stock. Software used includes MEDEP, Tally Solution, Dreamer, and Medi-Pro. Dreamer is a locally produced software and Medi-Pro was recommended by a vet products supplier. Only a few of the agrovets mentioned carrying out annual audits (mostly the wholesalers), but this is also linked to clearing credit payments to suppliers at the end of the Nepali fiscal year in the month of Asahr (corresponding to June/July). It's also linked to volume sales.

- ***Staffing:*** the vast majority of agrovets run their business either on their own or with the (unpaid) help of family members. At least three of the agrovets work other jobs, including one full-time teacher whose wife looks after the store during school hours. Slightly less than a third

[3] Some agrovets have also accessed separate DADO provided month long Local Service Provider agriculture training. However, this is not required to run an agrovet store. Rather, it is to prepare them to provide training.

[4] There are anectodal reports of agrovets selling their business, with license, to newcomers who have not officially acquired the certification.

(six) of the agrovets employ paid staff which is an indicator of volume of sales (three of them are wholesale operations), and three are either expanding or diversified businesses. Only one of these agrovets employs JTAs and ironically it is the agrovet with the lowest reported sales amongst this group (he has both a JTA and a JTA/paravet on staff); he also utilizes recent JTA graduates as interns.[5] Three of these agrovets have in-house accountants while the lowest sales generator uses a part-time accountant. The agrovet with the biggest sales employs a total of seven people including a manager.

- ***Marketing:*** like many small businesses in Nepal agrovets cultivate relationships with their customers as one of their primary business retention practices; not just transaction oriented. When queried about what sets them apart from the competition a majority of agrovets responded 'customer treatment'. Many agrovets carry a similar line of products in a similar cost range - the compelling factors in attracting customers are proximity to their home and the added value that the agrovet provides in terms of free advice (*see photo below*). In urban and large bazaar areas there are usually multiple agrovets which translates into a more competitive marketplace. Thus, agrovets spend an inordinate amount of energy on maintaining their customer base as opposed to reaching out to new customers. Sometimes this takes the form of offering samples of new products (typically a few hybrid seeds). Discounts are also usually offered on bulk sales. According to one agrovet in Salyan, "you have to give discounts, otherwise people look elsewhere". His business is located close to Dang and as it is some customers go there to buy cheaper products.

  One of the prime types of marketing employed by virtually all of the agrovets takes the form of ***embedded services*** including field support. It should be noted that not everyone is eligible for field visits as it would be time and cost-prohibitive for an agrovet to service an entire community. Thus, there is a calculus to who benefits from this technical support and tends to include commercial or semi-commercial farmers who purchase bulk inputs. As farmers are not willing to pay for agriculture field support agrovets are forced to recoup field costs in retail sales, and significantly in customer retention. Since agrovet sales, by their very nature, are seasonally focused, it's essential to retain customers as they will keep coming back if satisfied. They will also tell friends and neighbors about where they source their products.

  It is normal practice for agrovets to provide cost-free linkages for their customers, such as in the form of introduction to potential buyers. This is another customer retention strategy which further positions agrovets as a one-stop information/product/connections center. Capitalizing on

[5] As principal at a local CTEVT vocational education branch he has access to a large JTA intern pool of candidates.

this unique role presents major scope for increasing consumer confidence in the agrovet business while contributing to farmer advancement. In some ways the concept of agriculture extension system is being inverted with the good agrovets serving as resource centers.

Information support, usually in the form of input recommendations and instructions on how to use new products, is also part of the embedded service ‘package’ though it is typically limited in terms of time provided - normally 5-15 minutes depending on the person and topic - and the manner in which information is communicated. Typically, instructions are given verbally which has limitations, especially where technical information and multiple steps are concerned. Some agrovets commented on writing down dosage instructions, such as for vet products or pesticides, similar to the way that pharmacists do. Yet there is not a common practice of writing down essential procedures or supplying reference material. Nor do famers usually resort to writing down technical information.

While farmers are unwilling to pay for agriculture support services, they do pay for veterinary field support. As one KISAN staff commented, ‘agriculture doesn’t cry, animals do.’ More to the point, farmers understand that animal health can be jeopardized by untreated disease and that their investment is vulnerable and thus requires a different kind of care than, say, crops (though the latter are also subject to blight, pest invasion, drought and other factors). The vast majority of small scale farmers do not call agrovets to their fields for support though they do sometimes phone in to request information on how to deal with a specific issue; this requires a level of familiarity with the agrovet as a regular customer. One of the Salyan agrovets remarked that collecting a fee for providing such advice would ensure that business disappears. An agrovet in Dadeldhura commented that 90% of farmers are not ready to pay for field service. A caveat to this widespread belief is, as an agrovet in Surkhet noted, commercial farmers will pay for some services, such as soil sample. A wholesale agrovet in Kailali summed up the situation well: “once farming has gone more commercial then agrovets will be able to command fees for services but right now it’s too small scale.”

Besides providing embedded services which are essentially a business requirement, marketing is not the strong point of most agrovets and they tend to rely on external, and cheaper, options such as KISAN to promote their business. One agrovet in Salyan even commented: “As a local (business), if I don’t go to the field to provide farmer support it will jeopardize my business reputation’. Surprisingly, many, if not most, agrovets either did not have business cards or were out of stock. One way that they do advertise with minimal cost is on small packets of local/improved seeds including the name of their business, contact number, and location.

Aside from holiday greetings placed as ads in local newspapers and/or on local FM stations, most of the agrovets do not see value in investing in marketing. Their store signboards and visible wares seem to be the most direct form of advertising which is focused more on street traffic, and typically includes a contact phone number, and in one case even an e-mail address (*see photos below*).

- ***Catering to one's own community:*** a number of the Tharu agrovets pick up much of their business from within the Tharu community. This is partially a function of geography, especially in the Terai with clusters of Tharu villages, but also a matter of trust. Some of the Tharu agrovets in Bardiya report 90% of their clientele comes from the Tharu community despite being located in a mixed bazaar area (*see photo at right*). As a demographic factor, it also helps create a business niche and contributes to low-cost marketing via word of mouth.

- ***Business model:*** while all of the agrovets are interested in making more money, they're not equally interested in the *process of systematic assessment and planning* in order to generate more profit. None of the agrovets have a formal business plan, not to mention a multi-step business plan outlining staffing and financial concerns as the business expands. Many have specific thoughts on what they could do to increase business, but they do not appear to have systematically analyzed the various inputs, linkages/processes required to grow their business. Many mentioned that they have cash liquidity constraints which obviously affects business planning.

  Some of the retail level agrovets are happy to have project support stimulate their sales and do not have any real expansion plans. Most of the agrovets, however, cited specific products and services that they would like to offer. For example, a number of agrovets commented on potential scope in providing polyhouse demos. Yet they also saw drawbacks in terms of the cost required, and one of the wholesale level agrovets in Kailali stated that while the concept of plastic tunnels is good, it really requires a training package for farmers. He further noted that in the far west there is 80% unmet coverage in terms of prospects for increased production. In other words, farmers are only producing at 20% capacity. He was the only agrovet who articulated a desire to physically expand his business in the form of opening a new store in a different region, with access to new markets. He's based in Dhangadhi but sees Kohlpur or Dang as prime spots for expansion. Refer to *Table 3* below for a summary of business ideas which the agrovets expressed as having potential market scope. The most commonly cited business ideas revolve around stocking different plastic items, and working with farmer groups. One retail agrovet in Bardiya acknowledged that the pathway to expansion involves marketing himself more, increasing customer confidence and getting into wholesale supply, but this also requires a large investment.

Table 3. Agrovet Business Ideas

SN	Business Expansion/ Diversification Ideas	No. of Agrovets Commented	Location
1.	Plastic tunnel demos	3	Dadeldhura/Kapilvastu/Salyan
2.	Irrigation demos	1	Dadeldhura
3.	Bio-pesticide demos	1	Dang
4.	Open new shop	1	Kailali
5.	Provide foundation seed	2	Dadeldhura/Bardiya
6.	Working with Farmer Groups	4	Doti/Salyan/Kapilvastu
7.	Increasing field visits (esp. for vet)[6]	1	Kailali
8.	Stocking irrigation materials (e.g. drip and Sithal Thopa brand barrel irrigation)	2	Bardiya/Kapilvastu
9.	Linking with projects such as KISAN	1	Bardiya
10.	Submitting supply tenders to projects (including GoN)	2	Bardiya/Banke
11.	Providing C1 – certified seed	1	Banke
12.	Increasing bio-pesticide stock	1	Surkhet
13.	Stocking insect traps	1	Surkhet
14.	Stocking tools and simple technologies (e.g. hand corn grinder, super grain bag, pruning shears)	3	Surkhet/Banke
15.	Stocking plastic (for tunnels, mulching, folding tanks, as well as Silpaulin)	4	Surkhet/Salyan/ Kapilvastu
16.	Providing technical support on fee basis	1	Dang
17.	Stocking poultry supplies/animal feed	2	Dang/Bardiya
18.	Selling fertilizer	1	Salyan
19.	Stocking horticulture nursery	2	Kapilvastu
20.	Floriculture	1	Kapilvastu
21.	Stocking small mechanized equipment (e.g. power tillers/threshers)	2	Doti/Banke
22.	Hiring a JTA for technical support	1	Banke

[6] There's no MSRP on animal vaccinations so healthy mark ups can be applied.

- ***Communications:*** virtually all of agrovets own smart phones but most do not utilize optimally for business purposes (other than the phone function). One novel smart phone use mentioned by a Salyan agrovet entails taking photos of field issues, such as pest infestation, and then e-mailing the photos to technical resources to identify the species and get other feedback in order to formulate a response to the problem.

  Approximately one third of the agrovets specifically commented on using the internet though they don't appear to use their phones for this purpose. This likely has to do with the fact that data mobile plans are still relatively expensive in Nepal. While Facebook is one of the most common internet destinations, the agrovets use it differently. Two of the agrovets (one in Kailali, one in Bardiya) commented on visiting Facebook pages for new information, such as new product and rate details. Two other agrovets (one in Dang, one in Banke) mentioned using Facebook for marketing their businesses including posting photos. Another agrovet in Surkhet also uses Facebook but looks around more broadly on the internet for product, layout and resource ideas. Refer to *Figure 2* at right, for different ICT options that can be harnessed by agrovets for improved business.

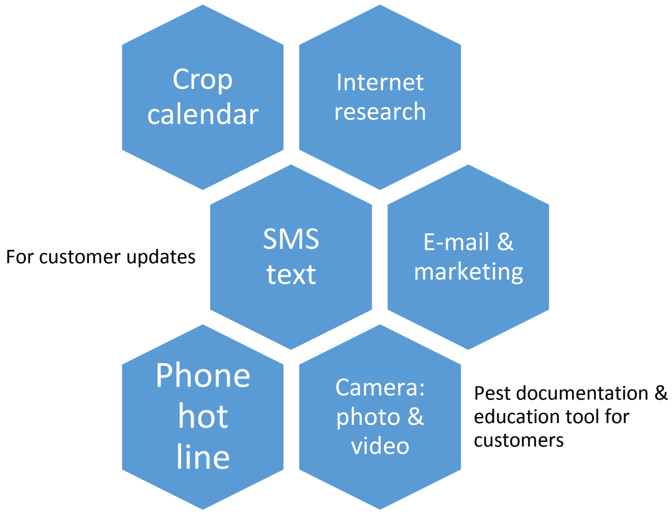


Figure 2. ICT Opportunities Diagram - Using a Smart Phone

- ***Networking:*** all of the agrovets have developed their own networks however local or regional. Yet some of the agrovets, particularly the larger/wholesale level ones, are characterized by a more diverse customer base. One of the wholesalers in Banke who worked for a regional NGO for 12 years across a number of Karnali/Mid-west districts built up his contacts along the way, and currently his business is comprised of sales to farmers (20%), DADO (10%), agrovets (40%) and I/NGOs (30%). Not surprisingly, of all the agrovets interviewed he has the widest distribution channel (*refer to Annex III, Banke GIS map*).

  The wholesale agrovet in Kailali has also cultivated a large supply network – he provides to all nine districts in the Far Western development region with 120 wholesale clients; he also 'houses' supplier marketing staff who collect credit payments for him while in the field marketing for their own companies. Besides the volume suppliers some of the mid-level agrovets have developed their own specialized cross-district networks. For example, one of the agrovets in Surkhet provides plastic and irrigation equipment to Bardiya. In addition to the Banke agrovet mentioned above, at least four others have worked previously for development projects with agriculture components (e.g. EIG, NEAT) or co-operatives and in the process have enjoyed exposure to different communities and developed specialized networks which they have parlayed into business opportunities. Networking is also extended to government agencies, especially DADO and DLSO, which will purchase products and with training hire some agrovets as Local Service Providers.

There are also some district level agrovet associations in existence, such as in Bardiya, but their level of activity is not clear, and they may be more nascent than established. SEAN, on the other hand, has more than 500 agrovets in its database and has District Coordination Committees in 16 districts including Kailali, Dang, Dadeldhura, and Kanchanpur. The main work of these committees is to ensure that agrovets are properly certified and have a PAN number. In the future they plan on getting into monitoring quality control of seeds.

- ***Agrovet age and impact on business evolution:*** while some agrovets have built their business over many years and continue to evolve, generally the more dynamic agrovets are younger, some under 30. There's a clear link between accessing updated information (such as through the internet), sourcing and selling new materials, and making recommendations to customers. Moreover, younger agrovets are focused on building their business – developing their customer and supply networks – and perhaps less risk averse than the older generation (*refer to photo at right, one of the younger agrovets interviewed*). This last factor is important as agrovets, at least those in the hills and more remote parts of the Terai, are more reliant on customer demand and less able to influence customer sales through introduction of new products lines or technologies. This is a catch 22 situation as agrovets have the ability to drive change but they must be willing to take the initiative and engage customers in a long-term dialogue, and educate clients on what inputs (and related practices) are required to upscale agriculture production. The younger generation has the energy and ability to do this.

- ***Educating customers:*** although most agrovets report spending 10-15 minutes/client when selling new products, it's likely that they don't spend this much time, especially during peak season when customers come in throughout the day. Moreover, it is questionable how much of the new information is retained as farmers do not have a practice of writing down information, nor do agrovets seem to provide much in the way of written instructions for their clients. On the positive side, a few of the agrovets post informational charts in their stores, and one of the agrovets in Kapilvastu (who previously worked for the USAID supported NEAT project) also keeps resource material developed by the project on hand (*see photo above*). He reportedly provides photocopies of the reference materials to customers, and stated that "without giving advice to farmers, the business fails." Other agrovets in Kapilvastu and Surkhet display informational flex charts around their store, such as on pest identification.

- ***Value added approaches:*** besides selling the basic array of products, agrovets typically employ other income generating approaches that complement their business. Buy back mechanisms are a common integrated modality whereby agrovets provide inputs on credit and then purchase customer agriculture products, normally seed or vegetables. The buy back guarantee is of double benefit to the farmer as they are able to access credit and have a secured buyer. At least seven agrovets mentioned that they extend buy back options to their clients though to different degrees and for different products. One agrovet in Doti buys cereal seeds from about 10% of his customers. Another agrovet in Dadeldhura has a much bigger buy back operation with improved corn seed and remarked that there's huge demand but he's not able to access sufficient supply. This agrovet provides seed to 80% of VDCs in his own district as well as five other neighboring districts. One of the retail level agrovets in Salyan provides a buy back option for vegetable seed such as peas, beans (kerau) and radish. While there are two agrovets in his vicinity the other one is more vet products focused while he is predominantly agriculture focused, thus reducing competition.

  An agrovet in Surkhet operates his retail business alongside a vegetable and fruit market that he also runs with the help of his wife. He started the vegetable operation after realizing that this was a natural piggyback option that would reinforce his relationship with clients and improve sales. A wholesale agrovet in Salyan is also a vegetable trader, working with 30 farmer groups both for input supply and vegetable purchase which provides him with a readymade market. He mentioned that these days most (commercial oriented) farmers are in farmer groups which makes targeting easier as input purchases and vegetable sales are consolidated through the groups. He's focused on off-season vegetable due to the profit margin but will also buy corn. He commented that previously people used their own seeds, and weren't reliant on packaged seeds, but due to increased yields are now in the practice of buying seeds: a major form of behavior change. One of the retail level agrovets in Surkhet also purchases seed from farmers and commented there is better quality (and less risk) when foundation seeds are provided by projects.

  Other value added approaches include: diversifying product line, providing rental and/or repair services such as for sprayers (*see photo below*), keeping product records, and targeting more than individual customers.[7] Case in point: at least three of the agrovets (Bardiya, Surkhet and Dang) provide products to DADO Agriculture Service Centers, and in some cases to multiple service centers. Another agrovet in Kapilvastu sells to both DADO and DLSO.

[7] One of the agrovets in Surkhet provides foundation seed to a nearby Peace Corps volunteer.

One of the agrovets in Dang is involved in a number of ventures including as a partner in a vegetable seed production company; serving as principal at the local CTEVT vocational education campus; running a bee-keeping business that both supplies honey and serves as a queen bee resource center; and operating an in-house lab where he analyzes plant disease including fungus, nematodes, bacteria and micro-nutrient deficiencies (this is also an excellent form of marketing/promotion for his retail business – *see photo below)*. In addition, he's advocating a service fee model working with a co-operative that has about 60 plastic tunnels in operation that haven't yet been successful.

Although agrovets don't commonly keep customer records, the one agrovet who previously worked in the development sector does keep track of his seed suppliers including disaggregating farmer group/co-operative details on gender, ethnicity, production area size, and crop type. Another agrovet in Kapilvastu shares customer information with one of his seed suppliers so that they can determine which varietals are most suitable for micro-climates. For example, the popular hybrid tomato varietal 'srijana' is reportedly less suitable for the plains and better for hill areas. In return for providing product use 'data' this agrovet is given seed samples which he, in turn, shares with customers.

- **Working with farmer groups:** at least nine of the agrovets have been involved with KISAN or other projects/DADO as trainers. One agrovet in Doti has trained 50 farmer groups. Another one in Kailali has worked with 12 KISAN farmer groups. Still other agrovets have benefited from KISAN referrals even if they haven't worked directly with farmer groups. Working with farmer groups consolidates the customer base and promotes customer confidence. Curiously agrovets didn't mention the role of co-ops as potential customers as much as farmer groups though some of them both buy and sell products to co-ops.

- **Seed guarantees:** despite the fact that seed is the top selling item in most agrovet stores there is very little in the way of consumer protection or quality guarantee. There has been a movement toward truthful labelling which details the expected yield per packet, yet farmers still experience germination problems (the number one complaint issue reported by the agrovets). One best practice that promotes farmer confidence, and is a prime form of added value, is the seed guarantee provided by an agrovet in Kapilvastu. He commented that a "good agro-business starts with providing good quality seed." If the seed that he sells doesn't germinate he'll provide other seed (but if it is due to farmer error then he'll compromise and subsidize half the replacement cost; if the customer is really poor he'll give for free). The other agrovet in Kapilvastu will also provide replacement seed at cost if there are germination problems, minus his profit. In this way he keeps the customer relationship intact while not losing money.

One of the agrovets in Dang (who is also a partner in a seed production company) also offers 'insurance' on seeds in the form of a return back policy in the case of problems, and one of the agrovets in Surkhet provides 50% discount on replacement packets if customers experience problem with seed (e.g. this year there was too much moisture in the pea crop). He feels that he can make up the cost in the form of future business and if the issue is not addressed customers can damage the business through public complaint. Although not a guarantee per se, one of the agrovets from Doti remarked that if he gets enough customer complaints about a specific type of hybrid seed then he will send the remaining stock back to the supplier and request replacements. Most agrovets, however, do not offer a seed replacement policy and claim that customers and companies make mistakes (for which they do not feel responsible); inevitably this causes a credibility problem despite the agrovet having nothing to do with the seed quality.

- **Soil assessment:** when queried about the scope of providing soil sample analysis (or at least facilitating the analysis) for their customers, the agrovets uniformly dismissed the concept and stated that there are government restrictions as well as logistical constraints. Apparently samples must be submitted in bulk (at least 60 samples) and the private sector is not authorized to conduct such assessments. In discussions with the commercial agriculture firm NIMBUS, which is in the process of rolling out an agrovet franchise model, soil sample was mentioned as a simple and cost-effective way of providing farmers with evidence based feedback on what kinds of inputs would be most appropriate given their soil conditions.

c. Agrovet Capacity Development Needs and Challenges

- ***Capacity development needs***: the most pressing need articulated by agrovets is to access new product and technology information – to stay abreast of updates in their field (*refer to Table 4 below for a summary of agrovet capacity development needs*). The top agrovet earner sums up the situation well: although his sales reportedly increase well into the double digit percentages each year, further expansion is tied to increased farmer knowledge and improved farming practice, such as with plastic mulching system (*see photo below of KISAN supported plastic mulching demo plot in Doti*). He says that to develop agrovet capacity the main ingredient to run the business is updated product technologies, such as plastic tunnels, complemented by a communication system, such as demos, to educate farmers. He's lost money trying new technologies but 'you just need to try'.

Another agrovet stated succinctly, "To get new customers you need to be able to communicate updated information, and in a polite way." The same agrovet, who has also been the beneficiary of IPM-IL training (supported by USAID) is impressed with private sector trainings and information as reflected by the comment, "USAID gives good (technical) updates."

Although very few agrovets expressly requested support for developing business plans this is clearly a blindspot for even the most sophisticated and business savvy of them. Of the top five earners one acknowledged that he sees the need for a computer for his business but won't buy one for another year or so. It's not clear whether he's a technophobe or has deeper concerns about tax vulnerability resulting from documenting his earnings; likely both are factors. The fact that many agrovets do not keep proper sales records is indeed an indicator of concern about taxation. This appears to be a major inhibitor for business growth, especially for mid-level agrovets, as they are anxious about the optics of being perceived as generating sales over the Rs. 2 million/annual mark (when VAT registration kicks in). A number of agrovets specifically referred to tax issues while this was the subtext of other conversations.

Table 4. Agrovet Capacity Development Needs

SN	Type of Capacity Development	No. of Agrovets Reporting[8]
1.	New product and technology information	8
2.	Training on business promotion	2
3.	Business management (including stock management & credit collection), and linking to good business practices	2
4.	Access to capital/support for business expansion (including for demos)	2
5.	Business plan development	3
6.	More pesticide retailer training	1
7.	Exposure visits/networking opportunities (including with input suppliers and output traders)	2

- ***Agrovet challenges:*** agrovets face a variety of very real impediments to building their enterprises and besides a specific sales generating idea or two, many are unclear how to sustainably grow their business (*refer to Business Constraints summary below*). None appear to have actual business growth targets and, as evidenced by the grant applications submitted to KISAN's business development wing, most don't know how to properly structure or articulate a one off concept that they are looking to get supported.

[8] Some agrovets reported multiple types of capacity development needs and some were not responsive.

Agrovet Constraints/Business Impediments Summary

- Farmers lack technical knowledge – without this business won't increase for agrovets.
- Risk averse nature of farmers, especially non-commercial farmers that don't have a practice of investing in significant inputs.
- Lack of commercial farmers who purchase stock in volume, especially in the hill districts.
- Difficult to stock new items/technologies without customer demand.
- Mindset of farmers is not geared toward paying for field support. Although some agrovets think that once farmers become more commercially oriented they will be more receptive to investing in field support, others think that they will hire agriculture technicians on staff themselves if they need enough assistance (e.g. not intermittent technical support).
- Customers demand chemical pesticides though many agrovets prefer bio--pesticides. If agrovets don't stock chemical pesticide they lose out on other business.
- Product quality issues, especially with seed.
- No local hybrid seed production so market is held captive to external constraints. Other significant external constraints include the earthquake and Indian embargo. One agrovet commented that the "*naka bandi* (Indian embargo) was 1,000 time worse in terms of disrupting business than the earthquake."
- Collecting credit from customers can be difficult. Also constraints in hiring collections staff.
- Getting adequate stock in time - related to 'in-time' ordering. Often agrovets wait to make bulk orders until farmers have made their individual orders. This results in 'last minute' ordering – common practice among agrovets – and wholesalers have to spread supply around.
- Lack of dynamic market (especially in hill districts) and transport network.
- Capital limitations and cash flow constraints (connected to both providing credit and investing in new products/services). Also, not optimally taking advantage of banking services, such as overdraft protection.
- Lack of meaningful government support (e.g. for training opportunities, taxation on certain stock items).
- Limited marketing/business promotion.
- Challenging finding capable and honest staff.
- Difficult taking time away from agrovet business for trainings.

A mantra repeated by the agrovets throughout the study was that their trade is dependent on consumers who themselves lack information. Thus consumer awareness and education needs to go hand in hand with business expansion/ diversification. Given the far from friendly business market and the *mauka* (opportunity/windfall – think the recent fuel crisis and rampant black marketeering) or monopoly mindset of many business people, however, it's important that agrovets assess their business management practices and make appropriate modifications. For example, one agrovet in the far western hills has a fairly extensive sales supply network that extends outside of his own district yet he identified stock management as a weak spot. He and others commented that collecting credit is also a concern. Although this is a sensitive topic for small businesses and particularly those located in more rural areas, agrovets would benefit from learning how others manage their accounts. Over 100 agrovets have benefited from exposure visits to specialized production areas. They sorely need similar exposure to better business practices. Enlisting the support of more 'established' business people, or at least some of the bigger suppliers and wholesale level agovets, to share personal experience and best practices regarding how they grew their business and overcame the many hurdles faced along the way would be immensely useful (especially for those who have a solid customer/geographical base and supply network in place and are ready to push forward in a more commercial direction).

A number of agrovets mentioned that they have outstanding loans, and capital constraints were also frequently cited as a prime business inhibitor. A financial component focused on accessing, and optimally managing multiple streams of capital (including supplier line of credit) would be well worth incorporating into capacity building efforts. In conjunction with this financial planning it would also be useful to encourage agrovets to undertake a business self-assessment and develop a business plan that includes carrying out a cost/benefit analysis on their identified business expansion approaches so that they can scrutinize and absorb the hard math, and understand what it will take to reach their business goals.

In addition to capacity constraint issues raised by the agrovets a number of other weakness were identified over the course of the study. At least four of the agrovets cited challenges associated with getting stock in time. Although three of the four are located in the far-west and all are situated in the hills, this is a common complaint. Yet on closer scrutiny it seems that at least part of the reason for delays and insufficient stock is linked to the agrovets late orders which is itself a risk mitigation strategy. The retail level agrovets wait until they have a solid indication of customer demand before making their orders. Thus business is not so much predicated on previous seasons' demand as much as on in-hand orders. As one agrovet in Doti commented, 'it's difficult to expand business without a dynamic market and fluid cash flow, and can't take the risk to stock products that consumers don't buy." However, as wholesalers have many customers, seasonal competition for stock is inevitable, and those who wait too long end up with difficulty securing their full order.

Other common weaknesses include lack of fiscal rigor, less than ideal segregation of inputs, and over-reliance on consumer demand, as opposed to helping to stimulate demand.

- ***Policy issues:*** a number of the agrovets were critical of GoN agriculture policies, particularly for what is regarded as a lack of support for (small) farmers. VAT is not applied on the majority of agrovet products but is applied on plastic, sprinklers, and sprayers. Some agrovets complain that this is an anti-farmer regulation especially as these items are becoming more popular. Import tax on inputs is variable with seed, which affects all hybrids, commanding a significantly higher rate than chemical pesticide (up to 8% vs. 1% respectively). The increased price is, of course, passed on to consumers.

  One agrovet mentioned that farmers experience a lot of problems and they need advice right away (but that the extension system is not responsive). Another agrovet stated that farmer knowledge gaps and lack of adaptability are key constraints in bringing farmers along a more modern and commercial path, and for growing his business. He regards the government as negligent in supporting small farmers, and thinks that even groups registered with DADO don't benefit.[9] Moreover, according to him, it's important to demo new practices for farmers, otherwise they won't adapt on their own. A wholesale agrovet echoed this comment and said that, "GoN provides zero input for farmer capacity development." This last comment is notable in that greater DADO monitoring could potentially play a constructive role in agrovet capacity development which would, in turn, support farmer development. However, GoN resources are stretched thin and monitoring is not a priority.

d. Input Details

- ***Product line:*** Typically, agrovets carry a fairly limited range of products consisting of seeds (hybrid, improved and local varieties), pesticides, micronutrients, some vet products, and, depending on the location, also micro-irrigation equipment (for the hills, e.g. sprinkler, drip systems), plastic, tools etc. At least two agrovets, both in Surkhet and both located close to VDCs that are known for organic ginger production that is exported to Europe, mentioned bio-pesticide amongst their commonly sold products. Other agrovets have hesitations in stocking bio-pesticides because of quality control issues and lack of consumer interest which further leads to lack of availability.

  The top selling product is hybrid seed for which there are numerous varietals available with many companies and vegetable types represented. This is a proxy for increasing commercial orientation of farmers since hybrid seeds are much more expensive than local seeds and require more care. As a result, farmers tend to grow local or improved seed for their home consumption, and hybrid seed for commercial sale (this is also a risk mitigation strategy). The consumer preference for hybrid seed has changed dramatically over the last two to three years and represents a major break with traditional farmer practice of using local or improved seed.[10] Unfortunately there are quality control issues from both the production side, and the GoN monitoring side which makes farmers doubly vulnerable.

  Most agrovet stores are laid out in a similar fashion displaying their wares to the public with an open store front. Invariably different companies and varieties of seed, especially hybrid vegetable seed, occupy a prominent place. Seeds are commonly placed within the reach of customers (product placement) who handle and scrutinize the different varietals (*refer to photos below*). By

[9] During the course of this study as well as a parallel studied carried out with KISAN supported farmer groups it was clear that there are some limited resources that farmers can access from DADO, such as subsidized materials (e.g. plastic, seed and in some cases irrigation support), as well as some training opportunities. The breadth and depth of support, however, is certainly questionable.

[10] Although hybrid seed now accounts for greater volume of sales, the mark up on local seeds represents one of the greatest product profit margins.

comparison, chemical pesticides are kept behind the counter and out of reach, if not properly segregated from other stock.[11]

- ***Inventory layout:*** agrovets usually organize products by type, with seeds in one area, micronutrients in another, and pesticides in still a different section. As most retail level agrovets occupy only a single, typically smallish room, all of the products are kept within the room (fertilizer, if sold, tends to be stored elsewhere because of space limitations). Per Nepal law pesticides are supposed to be segregated. However, in practice products are only loosely segregated. In some stores, pesticides are kept behind a glass case. One agrovet who is also a vegetable trader and sells vegetables in front of his store mentioned that DADO had requested him to install a glass case for the pesticides due to proximity with the consumables. This was the one example of government monitoring/enforcement seen during the field trip.

The better stores have a clearly laid out design that is complemented by product information, charts and other education material. Note the clean, orderly and attractive layout of the store at right below. Some of the stores visited had chemical residues on the counter and products were somewhat haphazardly arranged (*see photo at left below*).

- ***Client profile:*** the purchasing power of farmers varies by geographical area, land size, access to irrigation, experience and risk tolerance, but goes from a few hundred rupees up to Rs. 80,000 for commercial level farmers. A more weighted average for seasonal purchases is Rs. 2,000 – 10,000 per household. Customer demand is for a fairly limited range of products including hybrid seed, pesticide, and micronutrients.

[11] Safety measures in regards to storage of chemical inputs was not an explicit part of the study, however fire extinguishers and sand were not visible in most of the stores visited. The WIKISAN database contains information about agrovet safety practices amongst the population supported by the project.

Consumers consist of three levels of famers – smallholders who mostly consume their own production, middle range (some sales) and commercial. The percentage of business from each, as well as the agrovet definition of these categories varies. One agrovet in Kapilvastu mentioned that 80% of his customers are commercial farmers who purchase up to Rs. 20,000 in stock per season and up to Rs. 50,000/year. According to the largest agrovet in Surkhet there aren't really commercial level farmers in that district yet as land holding size is relatively small (he doesn't equate 2-4 *kattha* of land as sufficient for commercial production)[12],

> ***"The biggest challenge with farmers is that they don't have technical knowledge – lacking this business won't increase for agrovets" – Dang agrovet.***

there are irrigation constraints, and many youth are working abroad. Others report a significant range in customer sales. According to one agrovet in Kailali his average customer purchases between Rs. 3,000 - 40,000 year. There wasn't a noticeable difference in average customer sales between the Terai and hill based agrovets. The main differentiator seems to be agrovet business size as the more diverse range of stock they carry the more business they can cater to.

- ***Input supply chain***: typically, agrovet retailers source products regionally (e.g. Doti gets from Dhangadhi, Bardiya gets from Nepalganj). Wholesalers access products from Kathmandu, Birganj, Butwal, Chitwan and India as well as Janakpur and Biratnagar to a lesser extent. Inputs move their way up from Terai to hills both directly from wholesalers in the Terai and from retailers in the hills who also provide some wholesale supply. The biggest wholesale agrovet interviewed has 70 supply sources and sells products to 200 agrovets. Refer to *Annex II* for GIS maps that detail the nine districts surveyed and associated supply chains.

  Due to its physical proximity to both the far western and western districts, and as it is the plains business hub for the Midwestern districts and Karnali Zone, Nepalganj serves as a conduit of agrovet supplies. Agrovets from Salyan to Doti order products from here though their ordering pattern is targeted with general supplies accessed closer to home and specialty supplies ordered farther afield, including from Kathmandu. The most commonly mentioned agrovets in Nepalganj include Trimurti (#1), Annapurna, Chitwan Agrovet (#2), Sagarmatha, Munal and Shining Star (#3) and Modern Agro-Technology (#4).[13] Likewise, the most frequently mentioned suppliers from Kathmandu include Jai Kisan Seed Center (#1), Nepal Seed (#2), Gorkha Seed and Sital

[12] One kattha = c. 3,644.3 square feet. By comparison, an acre is 43,650 square feet.
[13] One of the agrovets interviewed.

Thopa (#3). In the far-west the biggest suppliers are Krishak Support Center[14] and Kisan Agrovet Center, as well as Pet Vet for veterinary supplies.

Amongst the regional suppliers, especially the wholesale agrovets, the product offerings are fairly similar in range even if there are different companies represented. Similarly, some of the bigger suppliers in Kathmandu, such as Jai Kisan Seed Center and Nepal Seed Company, are also involved in importing pesticide. The distribution channels for hybrid seed, however, are more complex. Hybrid seeds are sourced from a range of countries including India, China, Japan, Korea, Taiwan, Thailand, and Italy, but they are channeled through specific traders or distributors. Gorkha Seed Traders, for example, distributes Chia Thai, Linong, Green River, and Duron. Some of the seed companies, such as East West have a global presence with regional distributors, such as in India (*refer to Figure 3 below for details on the input supply chain*).

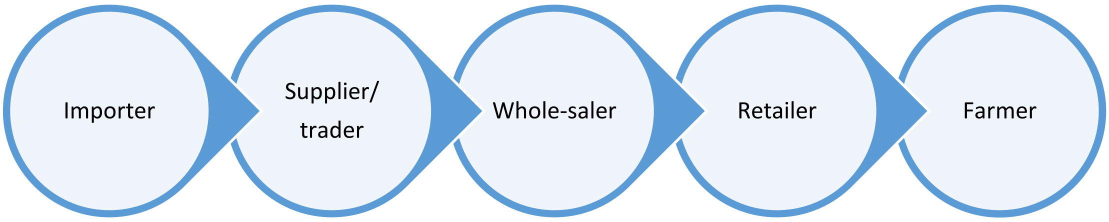


Figure 3. Input supply chain

Some distribution trends can be more easily tracked. For example, Chinese seed is mostly channeled through Kathmandu. Indian seed, on the other hand, makes its way across the border in formal and informal ways. The picture for chemical fertilizer distribution is even murkier. There is a chronic supply deficiency and GoN has theoretically tried to curtail the private sector's involvement in the supply of fertilizer (apparently due to concerns about quality control). Thus chemical fertilizers are supposed to go through government channels with end delivery through co-ops, yet in reality some agrovets are also involved in the trade. As this is a controlled commodity with district level quotas, transportation subsidies for 26 remote districts,[15] and involvement of DADO and even the CDO, it's difficult to quietly sell bulk quantity of fertilizer without official acknowledgement, if not endorsement.

According to a review paper in the Journal of Agriculture and Environment, the fertilizer subsidy is "available for only 100 thousand metric tons, which is far less amount than actual demand. Rest (sic) of the demand is being met through the unofficial import from India. Any change in Indian government gesture on regulating illegal cross-border trade would bring a shock to the internal fertilizer market".[16] As co-ops are not located everywhere some agrovets are filling the

[14] Ibid.
[15] IFPRI Discussion Paper, Takeshima, Hiroyuki et. al., 2016, Determinants of Chemical Fertilizer Use in Nepal: Insights Based on Price Responsiveness and Income Effects.
[16] Shrestha, Ram Krishna, Vol. 11, June 2010.

vacuum whether as direct 'sub-lettors' to the co-op supply or with other DADO connections. It's worth noting that 80% of one agrovet's business is focused on fertilizer.

- ***Chemical inputs:*** as part of a parallel study carried out with farmer groups that have benefited from KISAN irrigation support, and located in the same areas as agrovets, it did not appear that there was widespread interest in bio-pesticide. Conversely, although all of the agrovets interviewed stock chemical pesticides, over 40% of them (from Doti to Kapilvastu) spoke of concerns about chemical inputs, mostly in the form of chemical pesticides. Some of the agrovets are resorting to growing and buying organic vegetables themselves. Many of them caution farmers about the dangers of pesticides and recommend to use in a limited fashion, and only when absolutely necessary (as opposed to common practice). At least five of them are staunch advocates of bio-pesticide with two of them (Salyan, Bardiya) actually providing bio-pesticide demos and another in Dang planning on it. The Salyan agrovet mentioned that he went into business after being impressed by the effectiveness of SERVO agrospray (a bio-pesticide). He is based in a high vegetable production area where there is also high chemical pesticide use, and is one of the few agrovets who emphasize a full range of protective gear in his store layout, and educates customers about the dangers of long term exposure. He also thinks it's especially important to educate women as they're on the agriculture frontline. He stated that there's still lack of awareness with pesticide use – people will spray their fields without proper protective apparel, and then will cook and sleep in the same clothes resulting in prolonged exposure.

One of the agrovets in Surkhet pointedly commented that the pesticide retailer training required of agrovets by GoN is not sufficient, and that agrovets in general need further training and capacity development (*see pesticide retailer certificate at right*). He also emphasized the importance of educating farmers about the negative side effects of chemical inputs (not just singling out pesticide, but also fertilizer), and the necessity of providing alternative mechanisms and equipment, such as pest traps, to deal with common issues faced by farmers. One of the Bardiya agrovets summed up the challenge faced by agrovets in advocating for bio-pesticides while customers request stronger, and faster acting products, which forces them to stock products that they may not use in their own fields. Ultimately awareness raising campaigns, that focus on both the hazards of inappropriate use of chemical inputs as well as hazards of consumption of heavily pesticide/fungicide/herbicide laden vegetables, complemented by agrovet advice on alternative options will help address this situation. One agrovet best practice to promote is the bio-pesticide demo. Ideally this would be held over the course of a season and alongside other vegetable production technologies (*see Recommendations section on page 30 for more details*).

e. Finance

- ***Capital investment:*** most of the agrovets do not make major capital purchases. This is a revealing business practice as they do not see much need or value in investing in equipment. The main equipment typically seen in a retail agrovet store include weighing scales, wooden desk/counters, and shelves for inventory as well as refrigerators in some places. A number of agrovets mentioned buying land with their profits (including Terai real estate for those who are based in the hills). Other common capital investments include motorbikes, and store furniture. Slightly over 20% of the agrovets have invested in computers though not all are used for business purposes. Unless they are large wholesalers, most agrovets are reluctant to invest in their business which is an important indicator or predictor of future growth. One of the most common approaches to growing their business is re-investing profits into stock. A number of the mid-level agrovets (retail with some wholesale) commented that they had started out with very little. One agrovet in Doti stated that he had started selling seed out of bag on the sidewalk. Another agrovet in Dadeldhura started his business with Rs. 12,000 of stock and now reportedly generates Rs. 5 million annually in sales.

- ***Operating expenses:*** other than rent most retail level agrovets appear to have minimal overhead cost. Most do not employ paid staff but 50% rely on the assistance of family members. The vast majority of agrovets (77%) rent their stores and prices vary depending on the location. In general, retail store rents range from Rs. 1,300 – R. 3,000/month though there are notable exceptions. One agrovet in Chinchhu, Surkhet is a prime example of market distortion as he reportedly pays Rs. 14,000/month for 2 rooms. Wholesale operations, and the larger space they inhabit, are typically more expensive (e.g. Rs. 17,000/month in Birendranagar, Surkhet). Only five of the agrovets reported operating out of buildings that they own (two of which are located in district headquarters). Two others, both in Doti, reported negotiating discounts from the landlords for improvements they have made on the property.

- ***Income:*** although revenue and profit data is not independently verifiable, it serves as a proxy. Agrovets reported annual sales ranging from Rs. 500,000 (smallest retailer) to Rs. 110 million (largest wholesaler). Likewise, annual net profits range from Rs. 80,000 to Rs. 6 million. The median income is Rs. 944,000, though figures are distorted by wholesale earnings. Individual profit is invariably under-reported. It's quite likely that some agrovets don't actually know how much they earn due to lack of documentation.

  Some agrovet sales and income has increased dramatically in the last couple of years due to support from KISAN, and particularly due to increased purchases from KISAN farmer group members. At least three agrovets specifically referenced their business picking up as a result of KISAN influence with two, both located in Surkhet, citing significant increase in sales (about 25% and 40% respectively). It should be noted that the latter figure as well as the third agrovet, from Dang, have benefited from the presence of IPM-IL which has also supported their businesses.

- ***Credit:*** virtually all of the agrovets get credit from their suppliers. The amount depends on the relationship, and significantly, the volume of stock purchase. One retailer in Bardiya mentioned that he has an 'unlimited' credit line but payments are collected from him on a weekly basis.

Another agrovet in Bardiya commented that while he could access more than his Rs. 150,000 line of credit (LOC) he purposefully limits it as he believes that "as far as possible it's best to run a cash business." Two agrovets (one in Kapilvastu and one in Salyan) mentioned that cash payments translate into cheaper purchase price as there is more room for negotiation than with credit. Some suppliers, however, don't extend credit and there are restrictions associated with certain items. For example, seed and bio-pesticide typically require upfront cash payment (likely related to risk), while multinational companies are apparently disinclined to extend credit. Most agrovets remarked that their LOC needs to be cleared by the end of the Nepali financial year presumably so that suppliers can carry out their own annual audit. Likewise, credit with Indian suppliers must be cleared by February.[17]

The agrovets' cumulative LOC ranges from 1 lakh to Rs. 10 million (1 *karod*). There is usually a ceiling on credit provided by a single provider while a select few agrovets have an 'unlimited' LOC based on their credit history. All of the agrovets source from multiple suppliers. One of the common reasons for this practice is that with market fluctuations and demand all products are typically not available with one supplier. And, as a couple of agrovets noted, it's not strategic to concentrate business with one supplier as this monopoly will result in increased prices eventually.

The terms of credit repayment vary, depending on the same reasons as the LOC value, but normally range from weekly to duration of a season (when agrovets collect payment from farmers that they have extended credit to). Some agrovets send payments via bank transfer while others are subject to collection agents who come by on a regular, often monthly basis.

- ***Credit to farmers:*** extending credit to customers is almost unavoidable in this line of business, at least to reliable clients who purchase in bulk. Agrovets usually make restrictions and don't offer credit to everyone. Practices vary in regards to what kind of farmer is eligible for credit but the most commonly cited qualification (by 50% of the agrovets) is for viable/trustworthy commercial farmers. Sub-qualifications, and exclusions, also exist. For example, one agrovet in Kapilvastu will provide credit only to commercial farmers with bank accounts. At least two agrovets will not extend credit for seed. LOC varies but the most often cited range is Rs. 5,000 - 20,000 which certainly indicates different levels of production. One wholesale oriented agrovet in Dang stated that he will extend credit up to Rs. 60,000/season for known commercial farmers. But he has 70 suppliers and along with the biggest transaction history amongst agrovets surveyed, is in a better position to float this type of credit to select customers.

- ***Terms of payback:*** Predominantly credit is extended for the duration of the season (according to 50% of the agrovets). One agrovet in Salyan mentioned that 90% of his clientele accesses credit with purchases most often made by farmer groups. He is also a vegetable trader and

[17] Overdraft protection was only mentioned by one agrovet who referenced the need for this financial service that he has not yet accessed. Presumably the larger, regional level wholesale agrovets carry overdraft protection.

offers this benefit as part of a buy back scheme. The same policy is also offered by other agrovets who deal with foundation seed.

IV. INDICATORS OF AGROVET COMMERCIAL ORIENTATION / PREDICTORS OF GROWTH

While agrovets of varying capacity may be happy to participate in trainings and other project supported events, they don't all possess the same capability to grow their business. Below are a number of indicators that characterize agrovets business 'readiness', and scope for growth.

- Capital investments in business
- Business Loans (particularly from banks)
- Number of paid staff (especially technical staff, such as a JTA)
- Presence of an accountant
- Extensive/varied supply chain
- Value of Lines of Credit (LOC)
- Healthy Annual sales
- Number of regular clients or decent customer base with solid percentage of large volume purchasers
- Number of Farmer Groups served
- Size of coverage area (e.g. VDCs/districts)
- Education level/technical experience
- Involvement in value added activities (e.g. seed supply, buy back guarantees, vegetable purchase)
- Limited dependence on external market actors, such as projects
- Marketing sophistication
- Access to new information, products, suppliers, technologies etc.
- Sophisticated management system – e.g. sales and stock documentation /customer tracking/ use of computer and accounting software
- Use of technology for business improvements (e.g. internet, smart phone for accessing information and communicating with suppliers and clients)

Figure 4. Agrovet who is expanding his business through seed sales

V. RECOMMENDATIONS: AGROVET CAPACITY DEVELOPMENT OPTIONS

- Continue to provide a variety of agrovet capacity development opportunities with a focus on both technical and business components. Towards this end, identify agrovets with specific notable capabilities and involve them in trainings as Resource Persons or guest speakers (e.g. the largest wholesale agrovet in Dang can talk about developing and managing extensive and effective supply networks as well as staying abreast of new technologies; another agrovet in Dang can discuss his marketing efforts including hosting a daily FM radio agriculture show). Agrovets will inevitably pay more attention to those amongst their ranks who have grown their businesses, as opposed to people from other sectors. For the business aspect of capacity development too it's important to involve agrovets in instructional roles as they can speak to the many common challenges and constraints faced in this business, as well as solutions that they have come up with on their own. In addition, it's worth assigning brief presentations for agrovet participants in capacity development sessions so that they can share some of their own experience with emerging trends, new products, and best practices. For example, some could talk about manufacturing their own pest traps, developing fruit/horticulture nurseries, sourcing competitively priced and quality products, and incorporating buy back schemes into their management practices.

- Business management practices outlined in the findings section, including the following topics, should be integrated into different learning 'modules' utilizing both theoretical and practical approaches:

1. ***Developing business plans*** including cost benefit analysis and resource mapping for agrovet-identified commercial ideas.
2. ***Employing different marketing strategies*** including hosting demos and other learning opportunities for farmers, as well as considering approaches that generate more publicity such as FM radio advertising.
3. ***Incorporating value added approaches*** (e.g. equipment rental/repair – potentially even for portable diesel pumps; offering/facilitating soil sample assessment; retailing light mechanization equipment and irrigation systems; promoting buy-back guarantees).
4. ***Utilizing communications tools more effectively*** with a focus on smart phone options and internet (e.g. using the phone as a 'hot line' for customer technical support; SMS text messages to customers on product updates/availability; photo/video documentation of customer successes as marketing practice and for pest documentation and identification through internet use; promoting business on Facebook page etc.).
5. ***Improving farmer education*** through in-store counseling and provision of reference materials, field support, and demo opportunities. Part of educating consumers is providing them with new choices about materials/equipment/support and exposing them to simple, cost-effective, value added technologies such as mulching plastic which many farmers aren't aware of. Also encourage farmers to regularly use and share information from production diaries as well as monitor input use, especially for seed and pesticide. If germination doesn't occur at appropriate time away they need to address the issue and not wait until it's too late; for pesticide use crop monitoring protocols need to be understood and applied consistently.
6. ***Cultivating research skills*** so as to access updates on new technologies/ suppliers/ products (e.g. through internet, phone, agriculture diary, professional associations).
7. ***Improving sales documentation, inventory tracking and stock resupply.*** Annual audits are also a practice worth promoting.
8. ***Broadening customer base,*** such as working with (additional) farmer groups, co-ops, line agencies and I/NGOs and taking initiative with clients to update them on innovative farming practices and new products.
9. ***Tracking product end use*** (as monitored through field visits and agriculture fairs/*hat bazaars*, as well as reviewing client production diaries) and ***developing communication feedback loop with suppliers*** so as to determine optimal matches for specific products and micro-environments.
10. ***Promoting products and technologies that are environmentally friendly*** and contribute to agriculture sustainability (e.g. bio-pesticide, insect traps, compost *mol*).
11. ***Broadening professional network*** so as to include diversified supplier base, as well as technical resources to help address field issues.

INVOLVEMENT OF PRIVATE SECTOR IN AGROVET CAPACITY DEVELOPMENT

- Engage key input suppliers in workshops/capacity development of agrovets, ideally on a cost share basis. Such workshops can provide both networking and learning opportunities for agrovets and would be useful for their business development. This can take the shape of a multi-purpose forum where suppliers provide new product and technology information while also fielding questions on issues of concern, such as supply bottlenecks, and suitability of products to specific environments. Moreover, workshops can be relatively brief (e.g. half day) and need not pull individuals away from their business for long periods. Involving different types of suppliers, such as Sittal Thopa for small irrigation systems, along with plastic mulching and plastic tunnel providers, and of course seed traders would be beneficial.

- Continue to organize exposure visits for agrovets to specialized production areas – these are optimal hands-on learning opportunities that also contribute to network building and are appreciated by agrovets.

- Broaden the use of agrovets as private sector service providers with a specific focus on supporting cost-share demos with material inputs provided by KISAN and agrovets providing their time gratis. Consider supporting season long IPM type courses with Lead Farmer representatives from different clustered Farmer Groups. Clearly farmers need continuing education/technical input and season long demos provide the time for people to grasp farming challenges that crop up at different times, along with the appropriate solutions. This is a prime opportunity for agrovets to simultaneously develop their own capacity, market their business and educate farmers.

- In addition to trainings provide supplemental technical support to agrovets (in cluster approach) to diversify and adopt value added approaches in order to strategically grow their businesses. Different levels of project staff can contribute including Agriculture Marketing Technicians and Business Development Officers. Developing marketing techniques for fee-based field support, for example, is an option to consider as farmers will inevitably need technical assistance as their production becomes more commercial in scale.

CHEMICAL INPUT AWARENESS

- As part of the agrovet capacity development include component on chemical input handling and storage (most stores don't properly segregated pesticides in that they are kept in the same room with other products), as well as consumer education. The latter is much needed as part of an information and awareness campaign which should be supplemented by technical trainings that get into crop monitoring protocols and proper timing/ dosage for pesticide use as well as protective apparel to wear/best practice for pesticide application. An ideal venue to introduce these topics would be a bio-pesticide demonstration.

REFERENCE MATERIALS

- Develop simple resource materials with agrovets that they can share with farmers as technical references (such as laminated vegetable production guides created under the NEAT project); the materials can also be produced on posters/flex charts and be used for trainings and/or field demonstrations. Appropriate topics can be identified in workshops, and after developing materials the end product can be shared with agrovets in digital format so that they can provide customers with copies (note: copies can be printed on thin paper inexpensively). Appropriate digital education material for farmers can include brief, documentary style video clips that can be displayed on smart phones in the field and used as digital platform to share with other farmers.

- Farmers are not inherently business minded. As their production increases and moves in a commercial orientation they need more business literacy and planning support to keep apace. It's not realistic to expect agrovets to act as business mentors for farmers as they become more commercially oriented. However, agrovets are a prime resource and they can provide reference points for farmers in terms of both providing linkages, recommending finance options, and most significantly counseling farmers on technological practices and equipment. One way to enable this practice is to encourage agrovets to review farmers' production diaries so that the can provide evidence-based advice. This will ideally also stimulate agrovets to better document their own business practices as well as recommendations for farmers so that all advice does not just take a written form.

- One tool that would be useful for this approach is to develop case studies that focus on successful aspects of agrovet operations (e.g. best business practices; raising capital; targeting new customers; using technology to grow business; marketing strategies etc.). The case studies can then be used to contextualize the environmental constraints and opportunities that agrovets face in different geographical areas.

SEED

- As hybrid seed are the top selling products across all agrovet operation it's worth thinking about supporting district and/or regional seed *melas* where different suppliers are invited to give presentations on products, field questions, and ideally form marketing and technical partnerships that have a R&D approach to determine which hybrids varieties are most suitable to microclimates.
- Consider incorporating retail seed training, as a prelude to testing, into capacity development menu and encourage seed guarantees.

NETWORKING

- Consider providing technical support for facilitation of district level agrovet association meetings. Also explore how SEAN can play a role in supporting agrovet quality control. Both options can provide an outlet for agrovets to build advocacy platforms.
- Promote use of agrovets as Local Service Providers to DADO, DLSO and other relevant line agencies.

ICT

- Consider developing a KISAN Facebook page which can serve as a resource center for agrovets.

- Assess existing agriculture call in centers (e.g. NIMBUS, Agri-Care) and promote those that provide accurate and valuable information to the KISAN agrovet network.

BEST PRACTICES

- Over the course of workshops and other agrovet interactions it would be instructive to compile an agrovet best practices compendium which can then be used to develop guidelines and learning module content. For example, it would be informative to develop a case study on seed guarantees and incorporate this topic into an agrovet business management training.

ANNEXES

ANNEX I

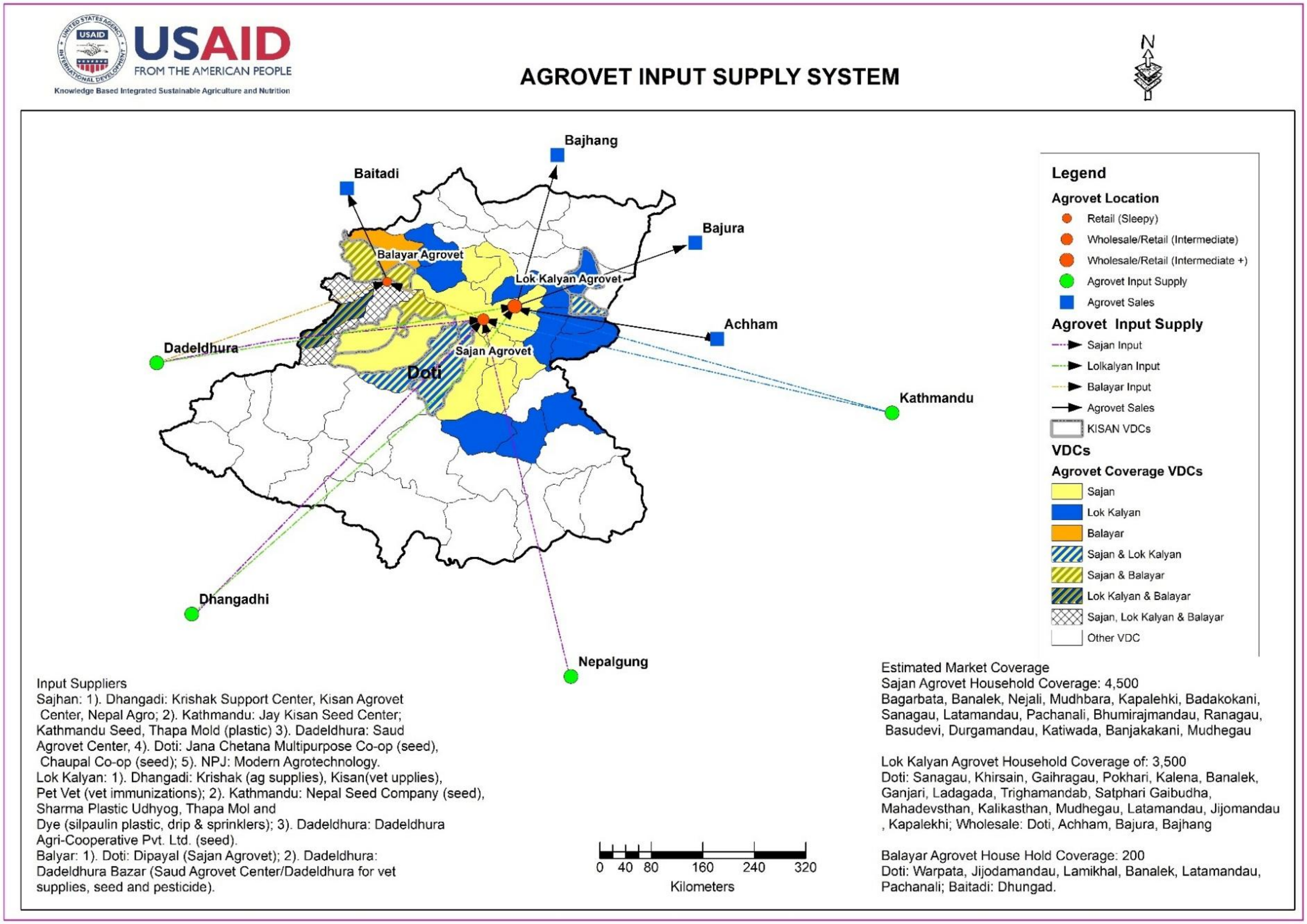
Table 1. Agrovet Classification Details

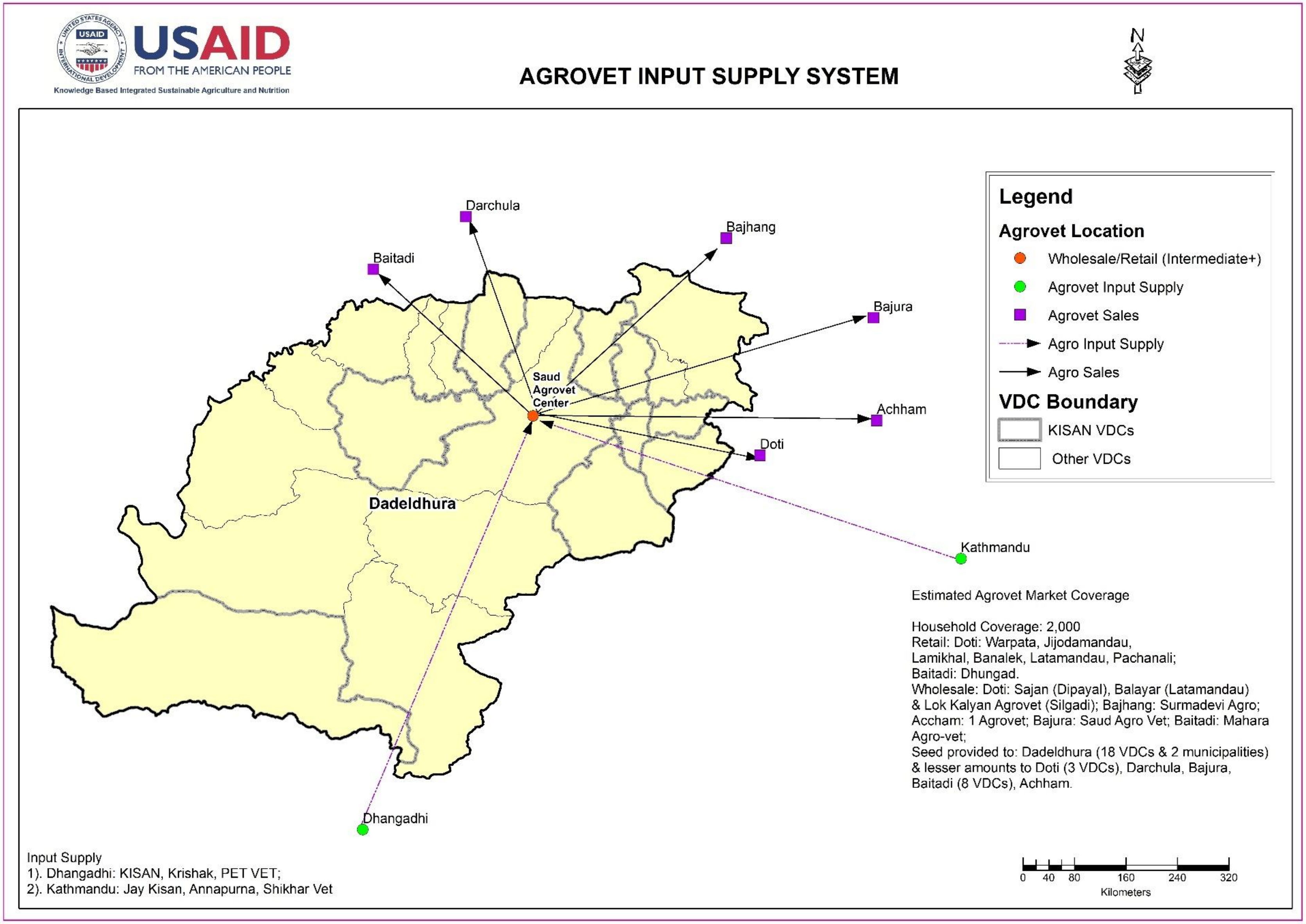
SN	Name	Location/ District	Annual Sales/ Profit	Est. # Customers	Supply Coverage Area	Classification
1.	Sajhan Agrovet Center	Dipayal, Doti	48 lakh/ 15 lakh net[18]	4,500 HHs	16 VDCs & 1 municipality of Doti	Intermediate -
2.	Lok Kalyan Seed and Distribution Center	Silgadhi, Doti	49 lakh/ 5 lakh net	3,500 HHs	17 VDCs & 1 municipality of Doti & wholesale supply in 3 other districts	Intermediate +
3.	Balayar Agrovet	Latamandau, Doti	5 lakh/ 80,000 net	200 HHs	6 VDCs of Doti & 1 other district	Sleepy
4.	Saud Agrovet Center	Dadeldhura, Dadeldhura	50 lakh/ 7.5 lakh net	2,000 HHs	18 VDCs & 2 municipalities of Dadeldhura & 6 other districts	Intermediate
5.	Krishak Support Center	Dhangadhi, Kailali	600 + lakh/ 60 lakh net	500 HHs retail & 120 wholesale clients	All across Kailali & 8 other districts	Commercial
6.	R.H. Agrovet	Joshipur, Kailali	20 + lakh/ 5 lakh net	1,500 HHs	6 VDCs of Kailali	Intermediate
7.	Sikha Agro Center	Rajapur, Bardiya	18 lakh/ 2.7 lakh net	250 HH in	11 VDCs of Bardiya	Emerging/ Dynamic
8.	Neelam Agrovet Center	Dhodhariya, Bardiya	50 lakh/ 2 lakh net	2,500 HH	6 VDCs of Bardiya	Intermediate -
9.	Milan Agrovet Center	Mainapokhar, Bardiya	18 lakh/ 4 lakh net	1,000 HH	5 VDCs of Bardiya	Intermediate
10.	Modern Agro-Technoloy	Nepalganj, Banke	469 lakh/ 23.5 lakh net	5,500 HHs	18 VDCs in Banke & sales to 19 districts & India	Commercial
11.	Bishal Agrovet	Chinchhu, Surkhet	50 lakh/ 5 lakh net	500 HHs	4 VDCs of Surkhet	Sleepy
12.	Sheetal Agro Trading Center	Birendranagar , Surkhet	300 lakh/ 10 lakh net	45,000 HHs	All VDCs of Surkhet & 5 other districts	Commercial
13.	Laxmi Agrovet Center	Mehlkuna, Surkhet	50 lakh/ 5 lakh net	1,000 HHs	11 VDCs of Surkhet & 3 other districts	Intermediate/ Dynamic
14.	Amrit Agrovet	Sahare, Surkhet	15 lakh/ 3.5 lakh net	2,700 HHs	5 VDCs in Surkhet & 2 other districts	Intermediate + trader
15.	Adhikari Agrovet Center	Urhari, Dang	5 lakh/ 1.25 lakh net	80 HHs	5 VDCs of Dang	Sleepy

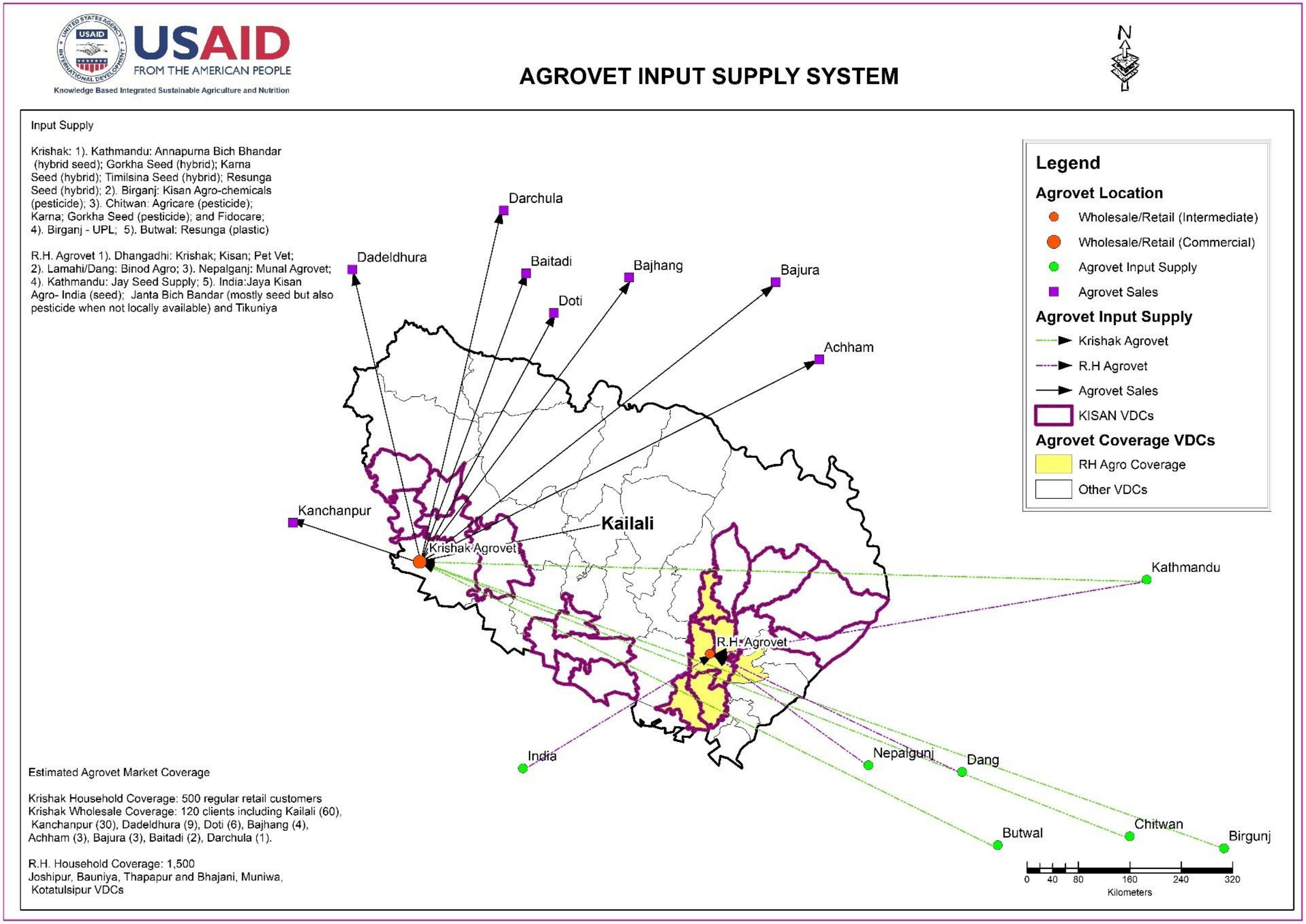
[18] 1 lakh = 100,000; 1 karod = 100 lakh = 10 million

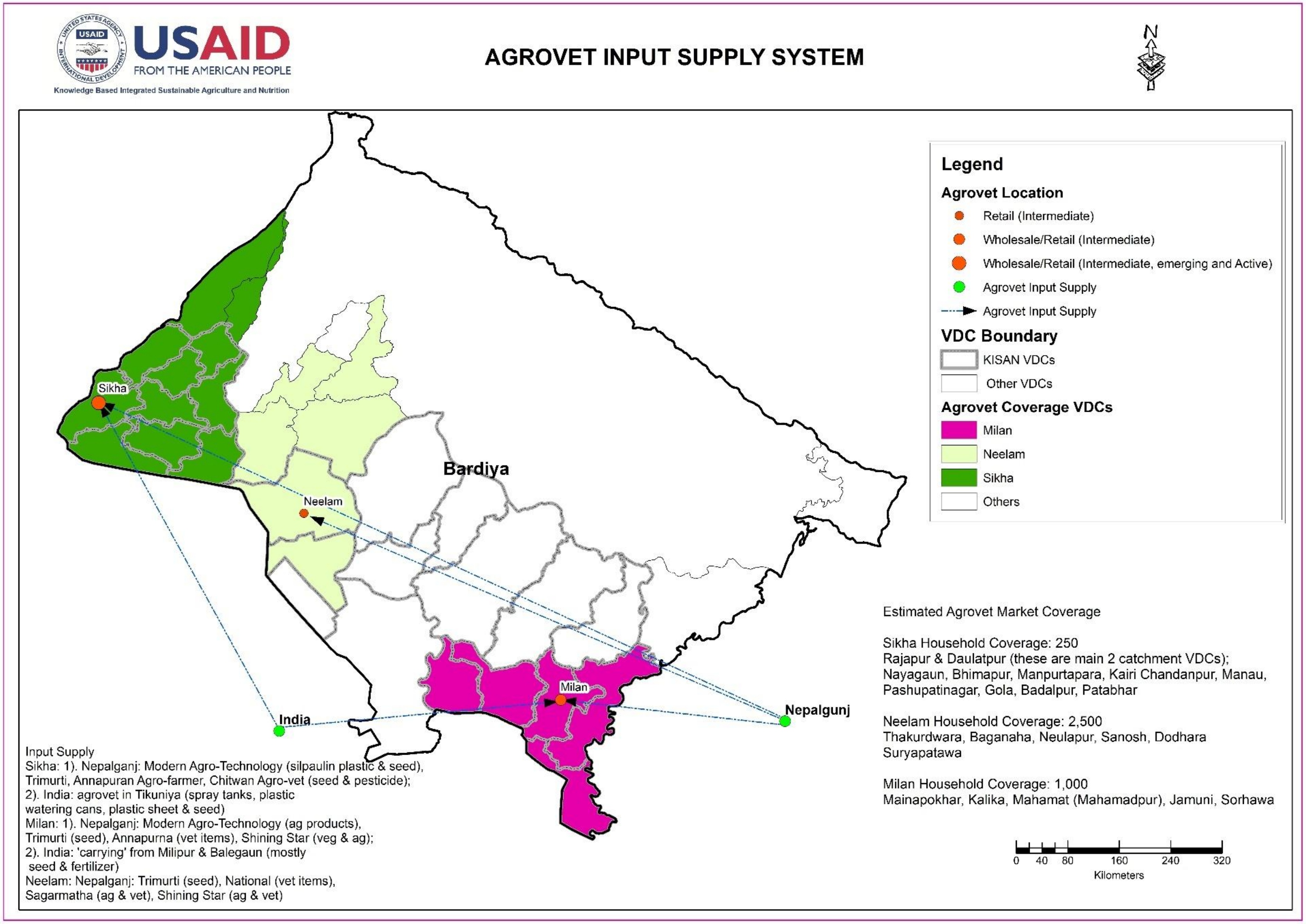
SN	Name	Location/ District	Annual Sales/ Profit	Est. # Customers	Supply Coverage Area	Classification
16.	Agri-Nepal	Tulsipur, Dang	40 lakh/6 lakh net	750 HHs	9 VDCs of Dang & wholesale supply to 6 agrovets in 2 other districts	Intermediate/ Dynamic
17.	Siddharta Agro Center	Gorahi, Dang	1,100 lakh (11 karod)/ 7 lakh net	350 HHs and 200 retail clients	All across Dang & 4 other districts	Commercial
18.	Srijana Agrovet Center and Plastic Store	Barela, Salyan	25 lakh/ 2.5 lakh net	300 HHs	5 VDCs of Salyan	Intermediate -
19.	Nabin Agrovet	Rim, Salyan	100 lakh (1 karod)/ 20 lakh net	450 HHs	3 districts of Salyan & 1 other district	Wholesale + trader
20.	Unnat Agrovet	Kapurkot, Salyan	40 lakh/ 4 lakh net	375 HHs	5 VDCs of Salyan & 2 other districts	Intermediate
21.	Krishna Agrovet	Shivari, Kapilvastu	11 lakh/ 6 lakh net	750 HHs	9 VDCs of Kapilvastu & 2 other districts	Intermediate
22.	Mourya Seed Center and Vet Pharmacy	Taulihawa, Kapilvastu	60 lakh/ 6 lakh net +	4,000 HHs	11 VDCs of Kapilvastu & 2 other districts	Intermediate/ Dynamic

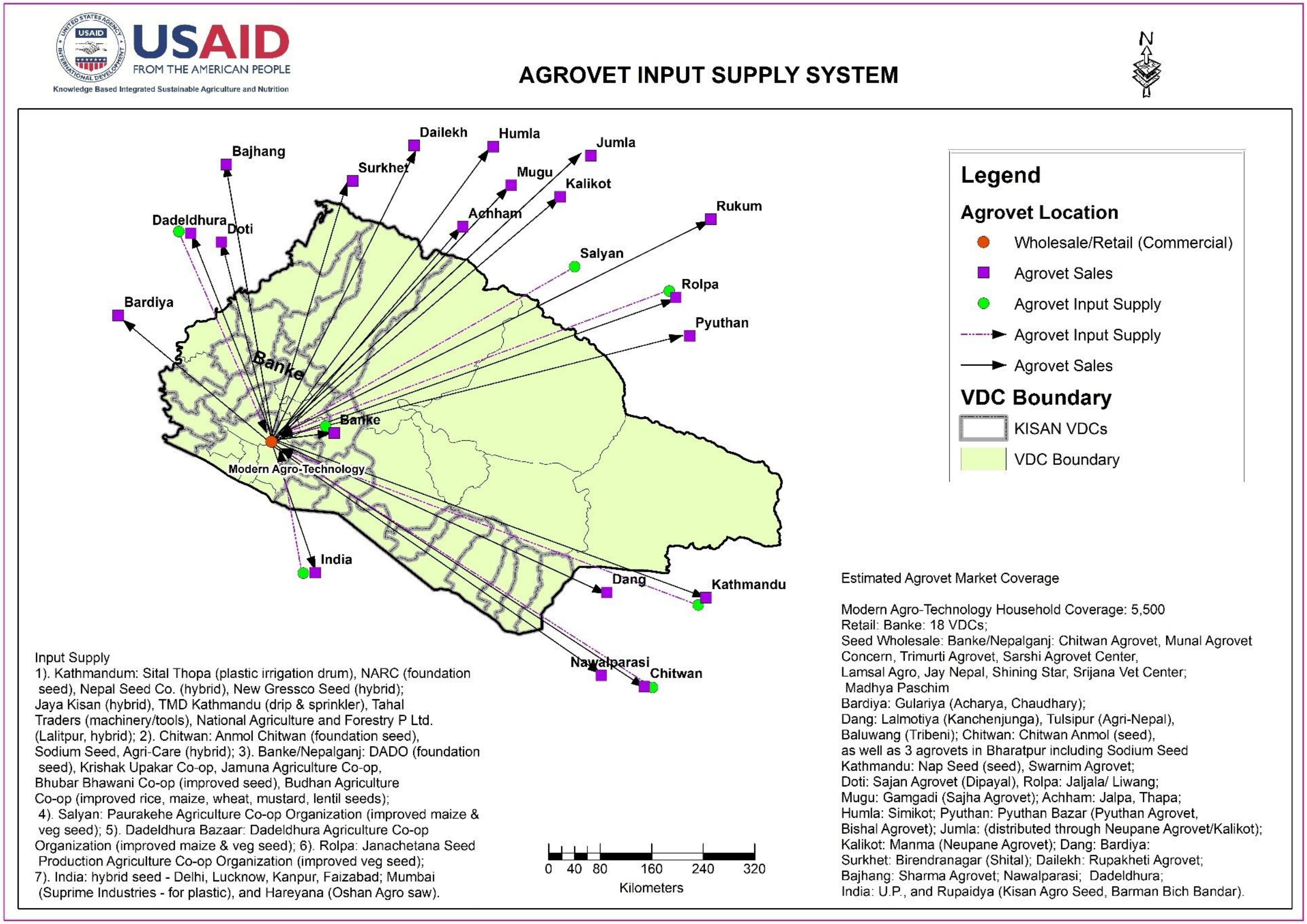
ANNEX II. GIS MAPS




USAID
FROM THE AMERICAN PEOPLE
Knowledge Based Integrated Sustainable Agriculture and Nutrition
AGROVET INPUT SUPPLY SYSTEM
N
Legend
Agrovet Location
Wholesale/Retail (Intermediate+)
Agrovet Input Supply
Agrovet Sales
Agro Input Supply
Agro Sales
VDC Boundary
KISAN VDCs
Other VDCs
Darchula
Bajhang
Baitadi
Bajura
Saud Agrovet Center
Achham
Doti
Dadeldhura
Kathmandu
Dhangadhi
Estimated Agrovet Market Coverage
Household Coverage: 2,000
Retail: Doti: Warpata, Jijodamandau, Lamikhal, Banalek, Latamandau, Pachanali; Baitadi: Dhungad.
Wholesale: Doti: Sajan (Dipayal), Balayar (Latamandau) & Lok Kalyan Agrovet (Silgadi); Bajhang: Surmadevi Agro; Accham: 1 Agrovet; Bajura: Saud Agro Vet; Baitadi: Mahara Agro-vet;
Seed provided to: Dadeldhura (18 VDCs & 2 municipalities) & lesser amounts to Doti (3 VDCs), Darchula, Bajura, Baitadi (8 VDCs), Achham.
Input Supply
1). Dhangadhi: KISAN, Krishak, PET VET;
2). Kathmandu: Jay Kisan, Annapurna, Shikhar Vet
0 40 80 160 240 320
Kilometers


USAID
FROM THE AMERICAN PEOPLE
Knowledge Based Integrated Sustainable Agriculture and Nutrition
AGROVET INPUT SUPPLY SYSTEM
N
Input Supply
Krishak: 1). Kathmandu: Annapurna Bich Bhandar (hybrid seed); Gorkha Seed (hybrid); Karna Seed (hybrid); Timilsina Seed (hybrid); Resunga Seed (hybrid); 2). Birganj: Kisan Agro-chemicals (pesticide); 3). Chitwan: Agricare (pesticide); Karna; Gorkha Seed (pesticide); and Fidocare; 4). Birganj - UPL; 5). Butwal: Resunga (plastic)
R.H. Agrovet 1). Dhangadhi: Krishak; Kisan; Pet Vet; 2). Lamahi/Dang: Binod Agro; 3). Nepalganj: Munal Agrovet; 4). Kathmandu: Jay Seed Supply; 5). India:Jaya Kisan Agro- India (seed); Janta Bich Bandar (mostly seed but also pesticide when not locally available) and Tikuniya
Darchula
Dadeldhura
Baitadi
Bajhang
Bajura
Doti
Achham
Kanchanpur
Kailali
Krishak Agrovet
R.H. Agrovet
Kathmandu
India
Nepalgunj
Dang
Butwal
Chitwan
Birgunj
Legend
Agrovet Location
Wholesale/Retail (Intermediate)
Wholesale/Retail (Commercial)
Agrovet Input Supply
Agrovet Sales
Agrovet Input Supply
Krishak Agrovet
R.H Agrovet
Agrovet Sales
KISAN VDCs
Agrovet Coverage VDCs
RH Agro Coverage
Other VDCs
Estimated Agrovet Market Coverage
Krishak Household Coverage: 500 regular retail customers
Krishak Wholesale Coverage: 120 clients including Kailali (60), Kanchanpur (30), Dadeldhura (9), Doti (6), Bajhang (4), Achham (3), Bajura (3), Baitadi (2), Darchula (1).
R.H. Household Coverage: 1,500
Joshipur, Bauniya, Thapapur and Bhajani, Muniwa, Kotatulsipur VDCs
0 40 80 160 240 320
Kilometers


USAID
FROM THE AMERICAN PEOPLE
Knowledge Based Integrated Sustainable Agriculture and Nutrition
AGROVET INPUT SUPPLY SYSTEM
N
Legend
Agrovet Location
Retail (Intermediate)
Wholesale/Retail (Intermediate)
Wholesale/Retail (Intermediate, emerging and Active)
Agrovet Input Supply
Agrovet Input Supply
VDC Boundary
KISAN VDCs
Other VDCs
Agrovet Coverage VDCs
Milan
Neelam
Sikha
Others
Sikha
Bardiya
Neelam
Milan
India
Nepalgunj
Estimated Agrovet Market Coverage
Sikha Household Coverage: 250
Rajapur & Daulatpur (these are main 2 catchment VDCs);
Nayagaun, Bhimapur, Manpurtapara, Kairi Chandanpur, Manau, Pashupatinagar, Gola, Badalpur, Patabhar
Neelam Household Coverage: 2,500
Thakurdwara, Baganaha, Neulapur, Sanosh, Dodhara Suryapatawa
Milan Household Coverage: 1,000
Mainapokhar, Kalika, Mahamat (Mahamadpur), Jamuni, Sorhawa
0 40 80 160 240 320
Kilometers
Input Supply
Sikha: 1). Nepalganj: Modern Agro-Technology (silpaulin plastic & seed), Trimurti, Annapuran Agro-farmer, Chitwan Agro-vet (seed & pesticide);
2). India: agrovet in Tikuniya (spray tanks, plastic watering cans, plastic sheet & seed)
Milan: 1). Nepalganj: Modern Agro-Technology (ag products), Trimurti (seed), Annapurna (vet items), Shining Star (veg & ag);
2). India: 'carrying' from Milipur & Balegaun (mostly seed & fertilizer)
Neelam: Nepalganj: Trimurti (seed), National (vet items), Sagarmatha (ag & vet), Shining Star (ag & vet)


USAID
FROM THE AMERICAN PEOPLE
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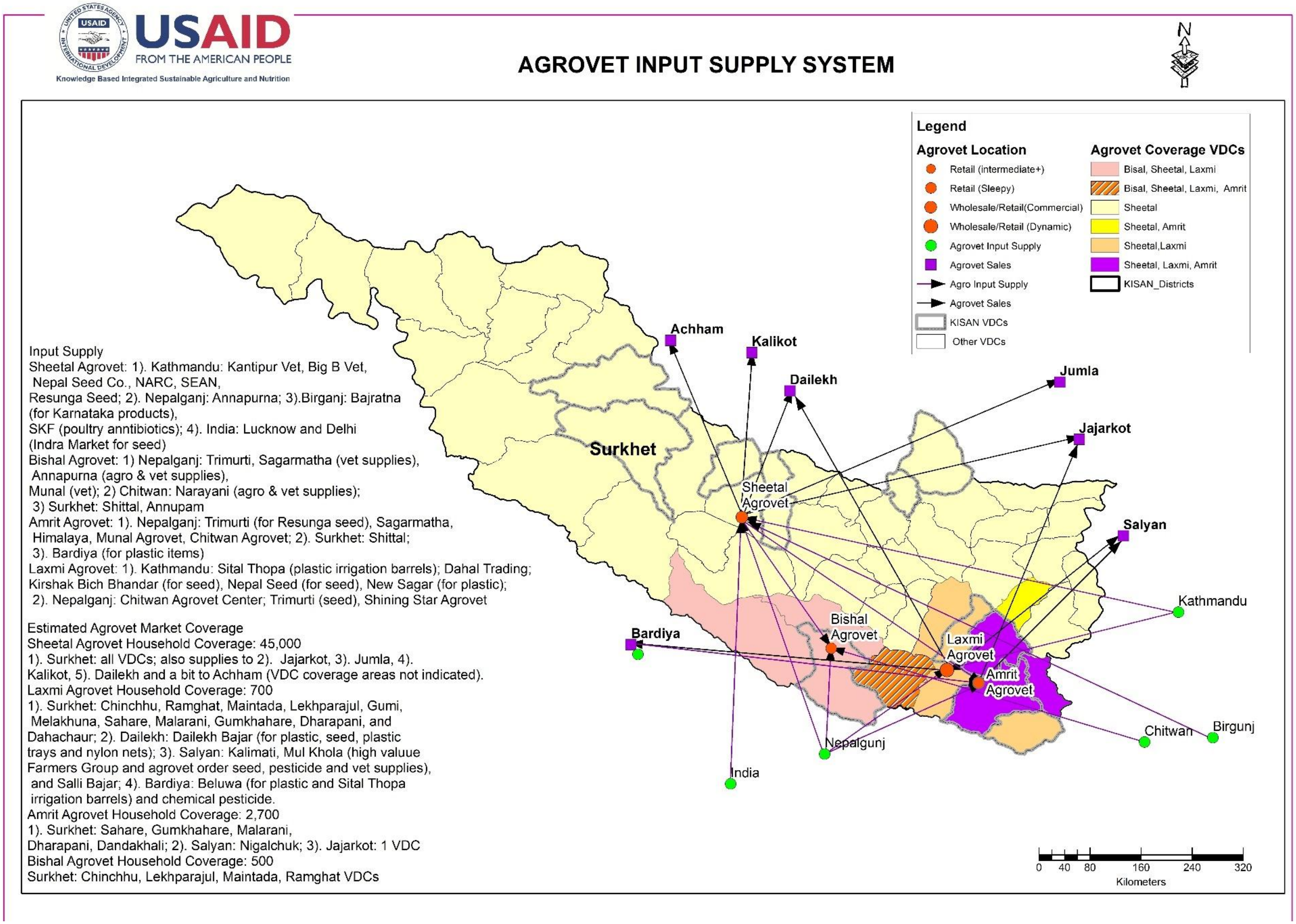
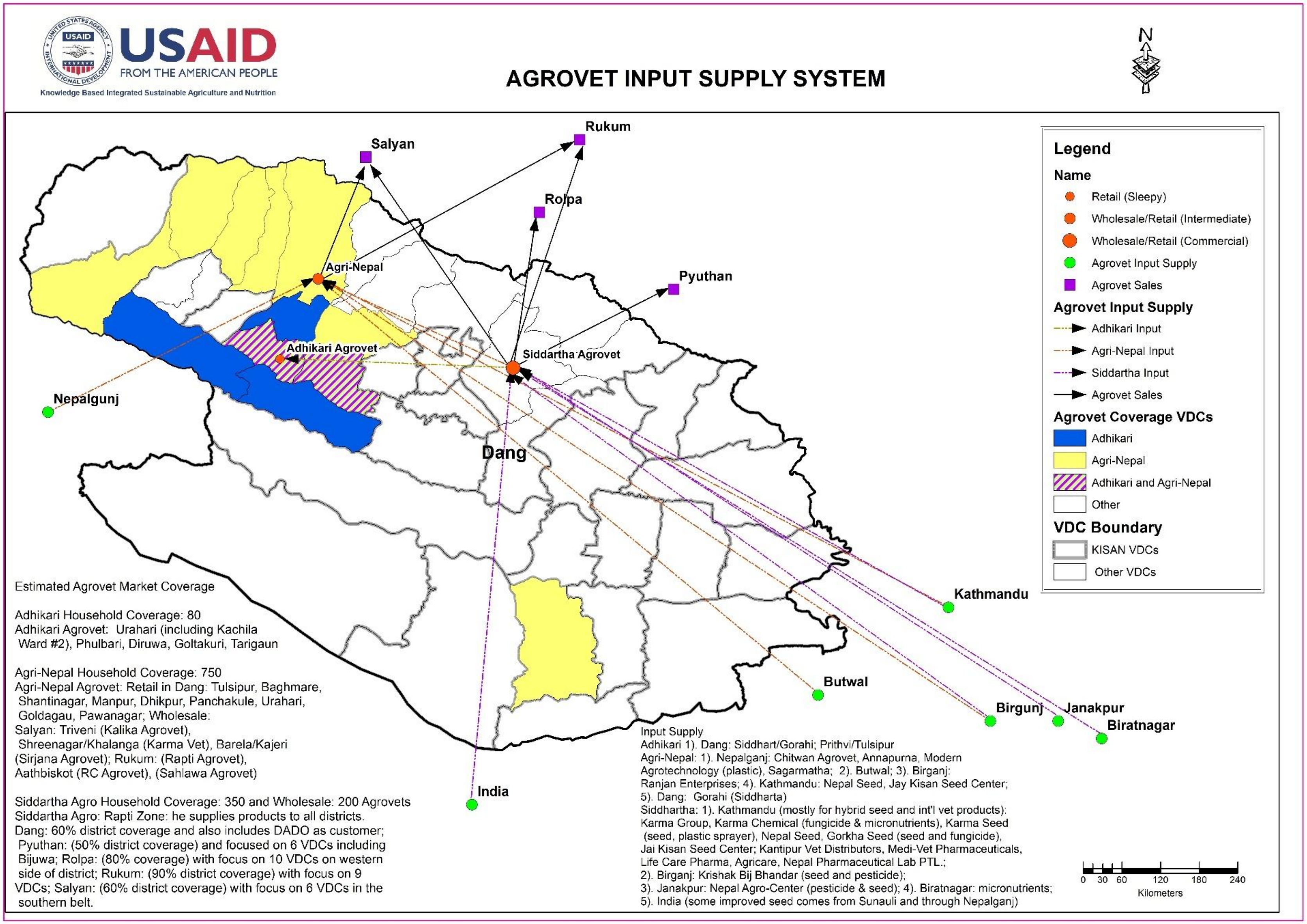
AGROVET INPUT SUPPLY SYSTEM
N
Bajhang
Dailekh
Humla
Jumla
Surkhet
Mugu
Kalikot
Achham
Rukum
Dadeldhura
Doti
Salyan
Rolpa
Bardiya
Pyuthan
Banke
Banke
Modern Agro-Technology
India
Dang
Kathmandu
Nawalparasi
Chitwan
Legend
Agrovet Location
Wholesale/Retail (Commercial)
Agrovet Sales
Agrovet Input Supply
Agrovet Input Supply
Agrovet Sales
VDC Boundary
KISAN VDCs
VDC Boundary
Input Supply
1). Kathmandum: Sital Thopa (plastic irrigation drum), NARC (foundation seed), Nepal Seed Co. (hybrid), New Gressco Seed (hybrid); Jaya Kisan (hybrid), TMD Kathmandu (drip & sprinkler), Tahal Traders (machinery/tools), National Agriculture and Forestry P Ltd. (Lalitpur, hybrid); 2). Chitwan: Anmol Chitwan (foundation seed), Sodium Seed, Agri-Care (hybrid); 3). Banke/Nepalganj: DADO (foundation seed), Krishak Upakar Co-op, Jamuna Agriculture Co-op, Bhubar Bhawani Co-op (improved seed), Budhan Agriculture Co-op (improved rice, maize, wheat, mustard, lentil seeds); 4). Salyan: Paurakehe Agriculture Co-op Organization (improved maize & veg seed); 5). Dadeldhura Bazaar: Dadeldhura Agriculture Co-op Organization (improved maize & veg seed); 6). Rolpa: Janachetana Seed Production Agriculture Co-op Organization (improved veg seed); 7). India: hybrid seed - Delhi, Lucknow, Kanpur, Faizabad; Mumbai (Suprime Industries - for plastic), and Hareyana (Oshan Agro saw).
0 40 80 160 240 320
Kilometers
Estimated Agrovet Market Coverage
Modern Agro-Technology Household Coverage: 5,500
Retail: Banke: 18 VDCs;
Seed Wholesale: Banke/Nepalganj: Chitwan Agrovet, Munal Agrovet Concern, Trimurti Agrovet, Sarshi Agrovet Center, Lamsal Agro, Jay Nepal, Shining Star, Srijana Vet Center; Madhya Paschim
Bardiya: Gulariya (Acharya, Chaudhary);
Dang: Lalmotiya (Kanchenjunga), Tulsipur (Agri-Nepal), Baluwang (Tribeni); Chitwan: Chitwan Anmol (seed), as well as 3 agrovets in Bharatpur including Sodium Seed
Kathmandu: Nap Seed (seed), Swarnim Agrovet;
Doti: Sajan Agrovet (Dipayal), Rolpa: Jaljala/ Liwang;
Mugu: Gamgadi (Sajha Agrovet); Achham: Jalpa, Thapa;
Humla: Simikot; Pyuthan: Pyuthan Bazar (Pyuthan Agrovet, Bishal Agrovet); Jumla: (distributed through Neupane Agrovet/Kalikot);
Kalikot: Manma (Neupane Agrovet); Dang: Bardiya:
Surkhet: Birendranagar (Shital); Dailekh: Rupakheti Agrovet;
Bajhang: Sharma Agrovet; Nawalparasi; Dadeldhura;
India: U.P., and Rupaidya (Kisan Agro Seed, Barman Bich Bandar).


USAID
FROM THE AMERICAN PEOPLE
Knowledge Based Integrated Sustainable Agriculture and Nutrition
AGROVET INPUT SUPPLY SYSTEM
N
Legend
Agrovet Location
Retail (intermediate+)
Retail (Sleepy)
Wholesale/Retail(Commercial)
Wholesale/Retail (Dynamic)
Agrovet Input Supply
Agrovet Sales
Agro Input Supply
Agrovet Sales
KISAN VDCs
Other VDCs
Agrovet Coverage VDCs
Bisal, Sheetal, Laxmi
Bisal, Sheetal, Laxmi, Amrit
Sheetal
Sheetal, Amrit
Sheetal,Laxmi
Sheetal, Laxmi, Amrit
KISAN_Districts
Achham
Kalikot
Dailekh
Jumla
Jajarkot
Salyan
Surkhet
Sheetal Agrovet
Bishal Agrovet
Laxmi Agrovet
Amrit Agrovet
Bardiya
Kathmandu
Chitwan
Birgunj
Nepalgunj
India
Input Supply
Sheetal Agrovet: 1). Kathmandu: Kantipur Vet, Big B Vet, Nepal Seed Co., NARC, SEAN, Resunga Seed; 2). Nepalganj: Annapurna; 3).Birganj: Bajratna (for Karnataka products), SKF (poultry anntibiotics); 4). India: Lucknow and Delhi (Indra Market for seed)
Bishal Agrovet: 1) Nepalganj: Trimurti, Sagarmatha (vet supplies), Annapurna (agro & vet supplies), Munal (vet); 2) Chitwan: Narayani (agro & vet supplies); 3) Surkhet: Shittal, Annupam
Amrit Agrovet: 1). Nepalganj: Trimurti (for Resunga seed), Sagarmatha, Himalaya, Munal Agrovet, Chitwan Agrovet; 2). Surkhet: Shittal; 3). Bardiya (for plastic items)
Laxmi Agrovet: 1). Kathmandu: Sital Thopa (plastic irrigation barrels); Dahal Trading; Kirshak Bich Bhandar (for seed), Nepal Seed (for seed), New Sagar (for plastic); 2). Nepalganj: Chitwan Agrovet Center; Trimurti (seed), Shining Star Agrovet
Estimated Agrovet Market Coverage
Sheetal Agrovet Household Coverage: 45,000
1). Surkhet: all VDCs; also supplies to 2). Jajarkot, 3). Jumla, 4). Kalikot, 5). Dailekh and a bit to Achham (VDC coverage areas not indicated).
Laxmi Agrovet Household Coverage: 700
1). Surkhet: Chinchhu, Ramghat, Maintada, Lekhparjul, Gumi, Melakhuna, Sahare, Malarani, Gumkhahare, Dharapani, and Dahachaur; 2). Dailekh: Dailekh Bajar (for plastic, seed, plastic trays and nylon nets); 3). Salyan: Kalimati, Mul Khola (high valuue Farmers Group and agrovet order seed, pesticide and vet supplies), and Salli Bajar; 4). Bardiya: Beluwa (for plastic and Sital Thopa irrigation barrels) and chemical pesticide.
Amrit Agrovet Household Coverage: 2,700
1). Surkhet: Sahare, Gumkhahare, Malarani, Dharapani, Dandakhali; 2). Salyan: Nigalchuk; 3). Jajarkot: 1 VDC
Bishal Agrovet Household Coverage: 500
Surkhet: Chinchhu, Lekhparjul, Maintada, Ramghat VDCs
0 40 80 160 240 320
Kilometers



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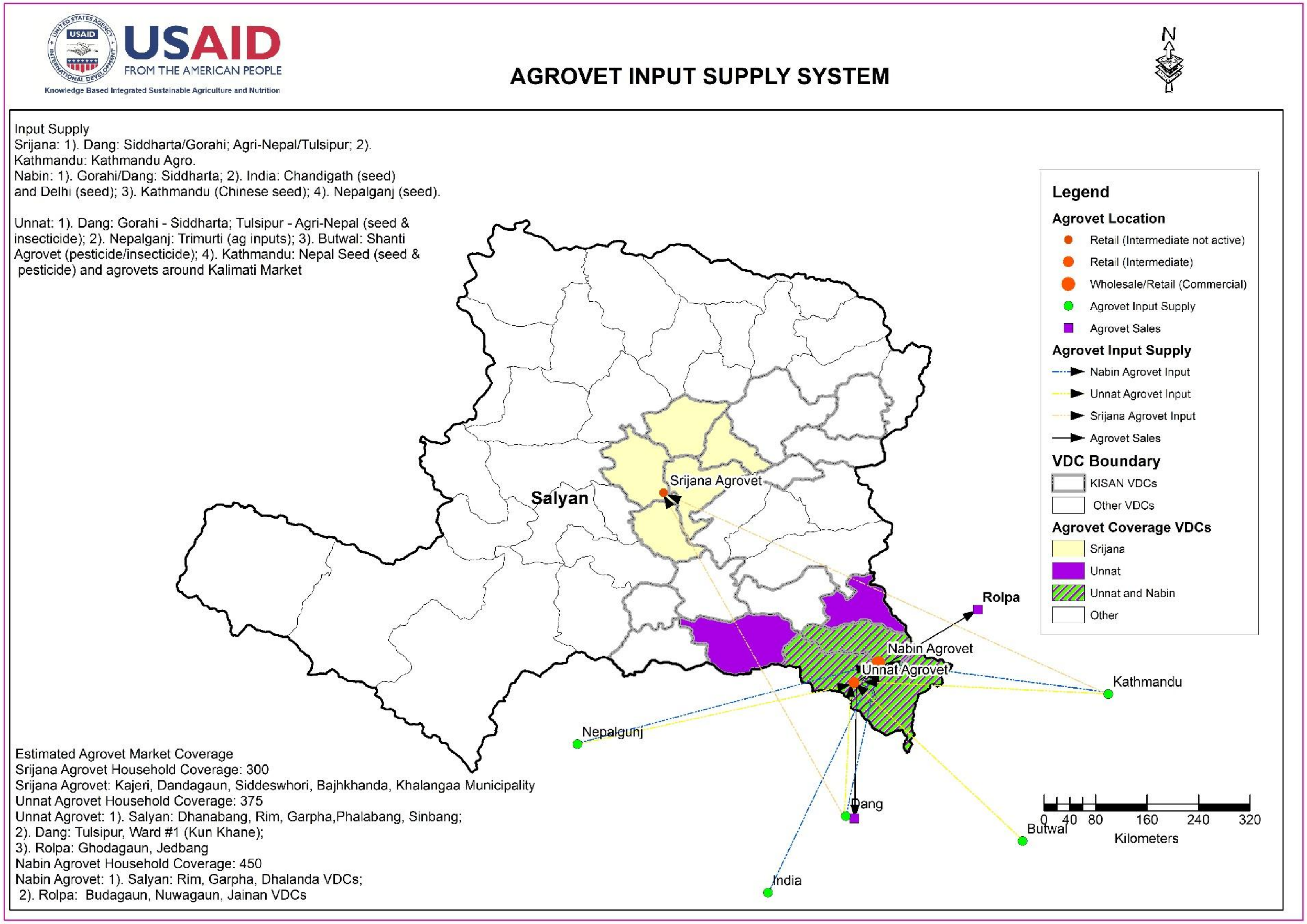
AGROVET INPUT SUPPLY SYSTEM
N
Salyan
Rukum
Rolpa
Pyuthan
Agri-Nepal
Adhikari Agrovet
Siddartha Agrovet
Nepalgunj
Dang
Kathmandu
Butwal
Birgunj
Janakpur
Biratnagar
India
Legend
Name
Retail (Sleepy)
Wholesale/Retail (Intermediate)
Wholesale/Retail (Commercial)
Agrovet Input Supply
Agrovet Sales
Agrovet Input Supply
Adhikari Input
Agri-Nepal Input
Siddartha Input
Agrovet Sales
Agrovet Coverage VDCs
Adhikari
Agri-Nepal
Adhikari and Agri-Nepal
Other
VDC Boundary
KISAN VDCs
Other VDCs
0 30 60 120 180 240
Kilometers
Estimated Agrovet Market Coverage
Adhikari Household Coverage: 80
Adhikari Agrovet: Urahari (including Kachila Ward #2), Phulbari, Diruwa, Goltakuri, Tarigaun
Agri-Nepal Household Coverage: 750
Agri-Nepal Agrovet: Retail in Dang: Tulsipur, Baghmare, Shantinagar, Manpur, Dhikpur, Panchakule, Urahari, Goldagau, Pawanagar; Wholesale: Salyan: Triveni (Kalika Agrovet), Shreenagar/Khalanga (Karma Vet), Barela/Kajeri (Sirjana Agrovet); Rukum: (Rapti Agrovet), Aathbiskot (RC Agrovet), (Sahlawa Agrovet)
Siddartha Agro Household Coverage: 350 and Wholesale: 200 Agrovets
Siddartha Agro: Rapti Zone: he supplies products to all districts. Dang: 60% district coverage and also includes DADO as customer; Pyuthan: (50% district coverage) and focused on 6 VDCs including Bijuwa; Rolpa: (80% coverage) with focus on 10 VDCs on western side of district; Rukum: (90% district coverage) with focus on 9 VDCs; Salyan: (60% district coverage) with focus on 6 VDCs in the southern belt.
Input Supply
Adhikari 1). Dang: Siddhart/Gorahi; Prithvi/Tulsipur
Agri-Nepal: 1). Nepalganj: Chitwan Agrovet, Annapurna, Modern Agrotechnology (plastic), Sagarmatha; 2). Butwal; 3). Birganj: Ranjan Enterprises; 4). Kathmandu: Nepal Seed, Jay Kisan Seed Center; 5). Dang: Gorahi (Siddharta)
Siddhartha: 1). Kathmandu (mostly for hybrid seed and int'l vet products): Karma Group, Karma Chemical (fungicide & micronutrients), Karma Seed (seed, plastic sprayer), Nepal Seed, Gorkha Seed (seed and fungicide), Jai Kisan Seed Center; Kantipur Vet Distributors, Medi-Vet Pharmaceuticals, Life Care Pharma, Agricare, Nepal Pharmaceutical Lab PTL.; 2). Birganj: Krishak Bij Bhandar (seed and pesticide); 3). Janakpur: Nepal Agro-Center (pesticide & seed); 4). Biratnagar: micronutrients; 5). India (some improved seed comes from Sunauli and through Nepalganj)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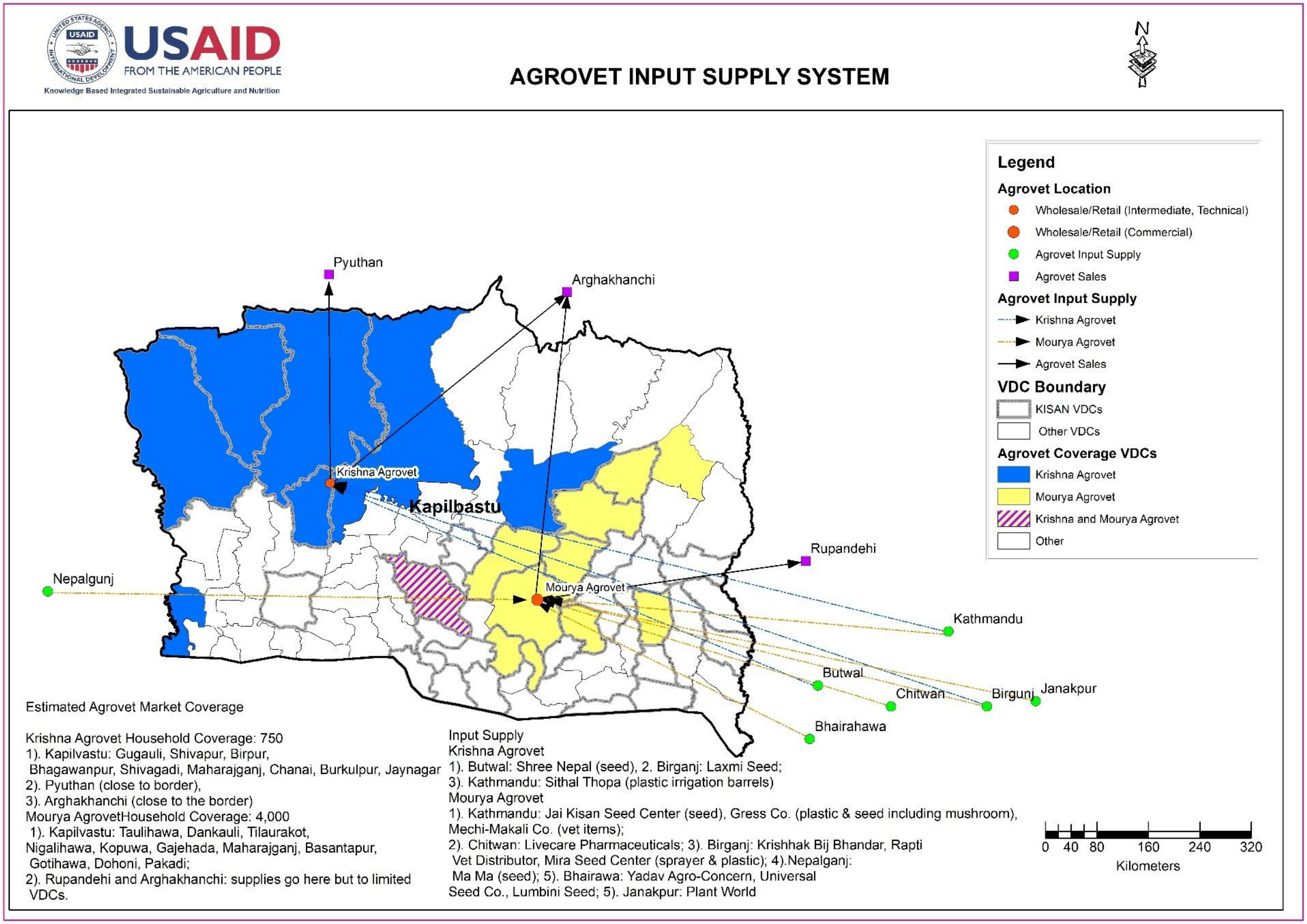
AGROVET INPUT SUPPLY SYSTEM
N
Input Supply
Srijana: 1). Dang: Siddharta/Gorahi; Agri-Nepal/Tulsipur; 2). Kathmandu: Kathmandu Agro.
Nabin: 1). Gorahi/Dang: Siddharta; 2). India: Chandigath (seed) and Delhi (seed); 3). Kathmandu (Chinese seed); 4). Nepalganj (seed).
Unnat: 1). Dang: Gorahi - Siddharta; Tulsipur - Agri-Nepal (seed & insecticide); 2). Nepalganj: Trimurti (ag inputs); 3). Butwal: Shanti Agrovet (pesticide/insecticide); 4). Kathmandu: Nepal Seed (seed & pesticide) and agrovets around Kalimati Market
Legend
Agrovet Location
Retail (Intermediate not active)
Retail (Intermediate)
Wholesale/Retail (Commercial)
Agrovet Input Supply
Agrovet Sales
Agrovet Input Supply
Nabin Agrovet Input
Unnat Agrovet Input
Srijana Agrovet Input
Agrovet Sales
VDC Boundary
KISAN VDCs
Other VDCs
Agrovet Coverage VDCs
Srijana
Unnat
Unnat and Nabin
Other
Salyan
Srijana Agrovet
Rolpa
Nabin Agrovet
Unnat Agrovet
Kathmandu
Nepalgunj
Dang
Butwal
India
0 40 80 160 240 320
Kilometers
Estimated Agrovet Market Coverage
Srijana Agrovet Household Coverage: 300
Srijana Agrovet: Kajeri, Dandagaun, Siddeswhori, Bajhkhanda, Khalangaa Municipality
Unnat Agrovet Household Coverage: 375
Unnat Agrovet: 1). Salyan: Dhanabang, Rim, Garpha,Phalabang, Sinbang;
2). Dang: Tulsipur, Ward #1 (Kun Khane);
3). Rolpa: Ghodagaun, Jedbang
Nabin Agrovet Household Coverage: 450
Nabin Agrovet: 1). Salyan: Rim, Garpha, Dhalanda VDCs;
2). Rolpa: Budagaun, Nuwagaun, Jainan VDCs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AGROVET INPUT SUPPLY SYSTEM
N
Legend
Agrovet Location
Wholesale/Retail (Intermediate, Technical)
Wholesale/Retail (Commercial)
Agrovet Input Supply
Agrovet Sales
Agrovet Input Supply
Krishna Agrovet
Mourya Agrovet
Agrovet Sales
VDC Boundary
KISAN VDCs
Other VDCs
Agrovet Coverage VDCs
Krishna Agrovet
Mourya Agrovet
Krishna and Mourya Agrovet
Other
Pyuthan
Arghakhanchi
Krishna Agrovet
Kapilbastu
Rupandehi
Nepalgunj
Mourya Agrovet
Kathmandu
Butwal
Chitwan
Birgunj
Janakpur
Bhairahawa
Estimated Agrovet Market Coverage
Krishna Agrovet Household Coverage: 750
1). Kapilvastu: Gugauli, Shivapur, Birpur,
Bhagawanpur, Shivagadi, Maharajganj, Chanai, Burkulpur, Jaynagar
2). Pyuthan (close to border),
3). Arghakhanchi (close to the border)
Mourya AgrovetHousehold Coverage: 4,000
1). Kapilvastu: Taulihawa, Dankauli, Tilaurakot,
Nigalihawa, Kopuwa, Gajehada, Maharajganj, Basantapur,
Gotihawa, Dohoni, Pakadi;
2). Rupandehi and Arghakhanchi: supplies go here but to limited VDCs.
Input Supply
Krishna Agrovet
1). Butwal: Shree Nepal (seed), 2. Birganj: Laxmi Seed;
3). Kathmandu: Sithal Thopa (plastic irrigation barrels)
Mourya Agrovet
1). Kathmandu: Jai Kisan Seed Center (seed), Gress Co. (plastic & seed including mushroom),
Mechi-Makali Co. (vet items);
2). Chitwan: Livecare Pharmaceuticals; 3). Birganj: Krishhak Bij Bhandar, Rapti
Vet Distributor, Mira Seed Center (sprayer & plastic); 4).Nepalganj:
Ma Ma (seed); 5). Bhairawa: Yadav Agro-Concern, Universal
Seed Co., Lumbini Seed; 5). Janakpur: Plant World
0 40 80 160 240 320
Kilometers