



Photo: Oxfam in Tajikistan

VILLAGE AGRONOMY MODEL: CONNECTING SMALLHOLDER FARMERS WITH AGRICULTURE EXTENSION SERVICES AND MARKETS TO ENHANCE INCOME AND PRODUCTIVITY

Oxfam in Tajikistan Economic Justice Programme Case Study



Implemented by



Summary

The Village Agronomy Model (VAM) is a package of extension and agriculture input supply services devised and implemented by Oxfam to reach out to smallholder farmers (SHFs) in remote, underserved regions of rural Tajikistan. In a scenario where SHFs mostly lack knowledge and skills on high-yielding agricultural technology and have weak access to reliable and quality input supply, VAMs have filled the critical gap by deepening the outreach of services, harnessing the power of markets and leveraging farmers' institutions. Over the past five years, VAM has reached out to 2,065 farmers growing a variety of crops, including vegetables, such as tomato, onion, cucumber, and watermelon, and grains, such as rice, building a robust network of extension services and spawning new supply chains in remote rural areas of the Khatlon region in southern Tajikistan. This has paved the way for sustained improvement in productivity and income of SHFs and development of the incipient agriculture market in rural areas. In the face of chronic unaddressed challenges of the market system in rural areas, VAMs offer a bridging solution that can be scaled-up and leveraged for systemic transformation in market support systems across the agriculture sector.

MAP OF TAJIKISTAN



1. Khatlon region: Challenges in the agriculture extension services

The inception of VAM can be traced back to two major Oxfam agriculture development programmes in the Khatlon region of Tajikistan: Growth in the Rural Economy and Agriculture: Tajikistan (GREAT, 2013–16) and Towards Rural Inclusive Growth and Economic Resilience (TRIGGER, 2016–18), both supported by Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ). Under these two initiatives, Oxfam focused on building agriculture value chains for small holder farmers¹ (SHFs) in the Khatlon region with a view to improving income, productivity and employment

¹ Defined as farmers with less than 1 hectare of arable land

while seeking to also build long-term climate resilience in the agriculture sector. Before designing the project, field assessments carried out in the action area highlighted the following main issues that confront SHFs.



Photos: Oxfam in Tajikistan

There is a general lack of interest across the rural population of Tajikistan in the agriculture sector, especially among the youth who mostly look forward to migration to Russia to earn their livelihoods. Farmers, especially the SHFs see agriculture as a risky venture, which offers low returns on investment of time and resources. In many households, only the older generation are left behind to do small-scale farming. However, a socio-economic baseline survey conducted by Oxfam in Khatlon (2016) found that for 65 % of households, agriculture remains the primary occupation, contributing an average of 71 % of the household income (total average household income of TJS 9,100). Against such a backdrop, boosting productivity and income of farmers is directly linked to livelihoods and food security.

In the baseline conducted by Oxfam, less than 30 % of the farmers reported having access to any sort of agriculture extension services and only 20 % had access to a village shop for agriculture input supply. From the assessment, it was clear that because of the absence of a strong supply network and financial services, SHFs ability to increase their productivity is highly constrained.

Figure 1: Main issues confronting SHFs.

Key issue	Challenges	Implications
1 Quality and Certification	<ul style="list-style-type: none"> • Quality-certified seeds not available • Absence of licensed sellers, no guarantee on seed • No local labs or related infrastructure to test seeds • Weak regulatory environment to regulate markets • Limited production of quality seeds locally 	<ul style="list-style-type: none"> • Low output, frequent crop failures • Input supplier often cheat farmers • Loss of assets from monetary loss (distress sale)
2 Affordability	<ul style="list-style-type: none"> • High and rising price of key inputs • High interest rates charged by financial institutions on crop loans and term loan deters investment • Formalities for securing bank loan cumbersome • No savings opportunity available to farmers to make self investment in farming 	<ul style="list-style-type: none"> • Farmer forced to sell their livestock to buy input • Heavy indebtedness from and informal sources, fuels forced migration
3 Accessibility and competition	<ul style="list-style-type: none"> • Inefficiency in supply chain for fertilizers and seeds; last mile delivery weak • Multiple layer of middlemen, inflates price and distorts market signals • Market information scarcely available to consumers 	<ul style="list-style-type: none"> • Increased cost of transportation • Rent seeking behaviour from local input supplier agents • Evidence of cartelisation
4 Extension and support services	<ul style="list-style-type: none"> • Limited extension support to farmers on use of inputs • Dilapidated irrigation infrastructure, absence of warehouses, lowers output despite investment in crop input 	<ul style="list-style-type: none"> • Increased soil salinity and reduced crop productivity • Misuse of pesticides; increased susceptibility to pest attacks

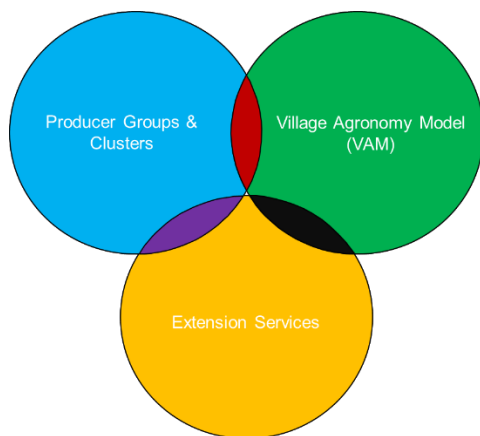


Photo: Oxfam in Tajikistan

2. VAM approach and strategy: support local entrepreneurs to build agriculture input supply-chain network

To address the specific challenges of input supply and extension services, Oxfam promoted a network of local agriculture input supply chains under TRIGGER and its predecessor project, GREAT. Recognizing that SHFs require knowledge and understanding of new high-yielding agricultural technologies and cultivation methods to boost income and productivity, the VAM model focused on two main elements: firstly working with local VAM entrepreneurs (mostly farmers or small commercial enterprises) to set up chain of demo-plots to showcase new crop varieties and advanced cultivation methods, and secondly supporting these VAM entrepreneurs to set up input supplier shops in villages. In doing so, this was establishing localized extension services focused on SHFs using a bottoms-up approach where local farmers and entrepreneurs assumed the lead role in providing agriculture services. Experience from agriculture extension models across the developing world have shown that a 'lab to land' approach to innovation in agriculture is most effective when farmers are at the centre of the change ecosystem and peer to peer learning starts with local change agents.

Figure 2: Collaboration synergy between VAMs and stakeholders



First-generation farmers, like many of those in Khatlon, face formidable barriers when seeking to adopt new high-yielding varieties of crops, including having limited access to affordable and good-quality certified agriculture inputs, such as seeds, fertilizers and crop protection measures. The private input supplier companies' capacity for last mile delivery of input is limited because of the high costs of setting up distribution and marketing channels in remote rural areas. Furthermore, SHFs need both products and services (monitoring and advisory) as an integrated package to successfully adopt new agronomic techniques.

To overcome the barriers to market entry for new input supplier enterprises, two conditions were found to be key: 1. Building farmers' collectives to aggregate demand for input that helps to achieve economy of scale.
2. Dissemination of information on the market opportunity presented by SHFs' demand for agriculture input to private companies and entrepreneurs, incentivizing them to set up distribution channels in villages.

The VAM approach is based on the premise that farmers' collectives, like Producer Groups (PGs), promoted at the village level, can be leveraged to aggregate demand for high-quality input supply in a decentralized value chain.

Firstly, farmers' institutions gain first-hand knowledge of new agronomic practices through demo-plots set up by the VAM entrepreneurs in their own plots.

Figure 3: Strategy on delivery and adoption of practices by farmers

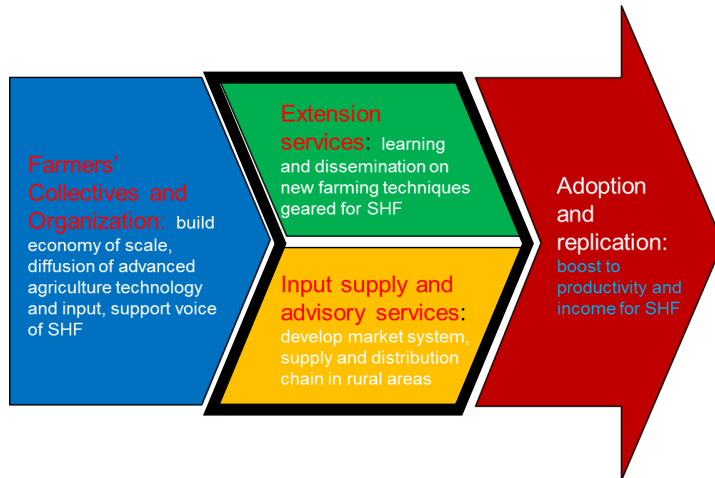


Photo: Oxfam in Tajikistan

Secondly, they are trained by VAM agents on new methods of cultivation, and finally they are connected to the agro-shop, owned by the VAM that supports farmers to adopt new practices (Figure 3). The centrepiece of the VAM strategy is *integration of advisory and input supply services*, which not only builds closer business relations between the VAM entrepreneurs and farmers, but also builds the confidence of farmers to take greater risks with the adoption of innovations. VAM agents have the incentive to set up a viable and effective extension service model, including village level demo-plots and training, to expand their customer base.

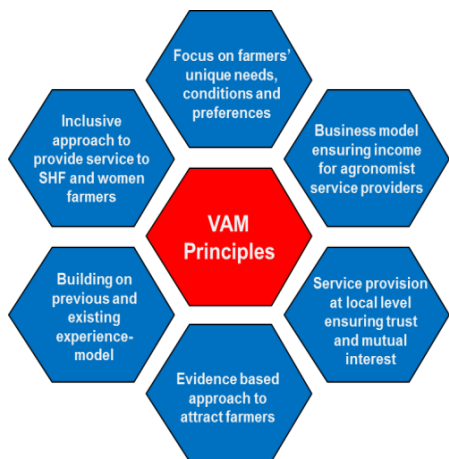
VAM approach: leverage farmers' institutions to achieve economy of scale, strive for vertical integration of advisory and product services for building a viable business model serving the SHF

Experience with the GREAT project shows that standalone advisory services are not financially viable for agronomists since farmers are generally *reluctant to pay for advice alone*, while on other hand, local agronomists with social connections in the village find it hard to demand fees for advice given (Oxfam baseline shows over 55 % of farmers do not pay for advice). In the VAM model, advisory services are embedded into the sale of products, making the business model more viable. VAMs achieve economy of scale by harnessing PGs as their client base and not serving individual farmers, thereby reducing costs of distribution. The PGs also find it profitable to aggregate their demand and negotiate for a competitive price with the VAMs. Though the VAMs were designed to serve the input supply requirements for the newly formed PGs, in recent years they have expanded their outreach and now also serve non-PG members as their customers.

VAM design principles: build from an existing base, keep market sustainability at the core

One of the main lessons learnt by Oxfam is that in the Khatlon region there is a mismatch between supply and demand for services, and a clear need to adopt more gradual and adapted approaches to mobilize farmers around private sector development initiatives. This is in particular true of women and the small-scale farmers or labourers whose access to resources and services remains restricted, but who still constitute the majority of the local population. Thus, one of the main objectives is to collaborate with a wide range of stakeholders, especially the most marginalized from income activities, and propose tested models to match the specific needs and unique conditions of SHFs to existing and newly established service providers.

Figure 4: Key VAM principles.



The models designed by Oxfam build on this need to bridge the gap between rural communities and the market, both in terms of behaviours – *understanding and integrating a consumer culture* – and mechanisms – *being able to access and use a system of business-oriented extension services that are profitable*. At the core of the model is the idea of *facilitation as a set of services offered by small and flexible organizations created, manned and run by farmers themselves*. This has also allowed Oxfam to address additional issues of importance for agricultural development, such as land-use management. To make it effective, this facilitation concept has had to be inclusive, working with and for women and poor farmers, and serve as a vehicle to influence local socio-economic development, adding value to the private sector's technical considerations. This work has also constituted a good learning base to move further towards a business model that relies on market linkages and value chain development.

The VAM approach has been reviewed in light of the market for extension services and SHFs' specific needs and unique conditions. The model is designed to be market oriented: the sustainability of the activity lies solely within the market demand, and the agronomists should target active farmers within the communities to fill their financial basket. Extensive consultations through focus group discussions and round tables took place in targeted villages, and in Kulyab and Kurganteppa cities in order to raise awareness on VAMs and collect comments and recommendations. Upon analysing the feedback, it was decided to develop the model based on the key principles shown in Figure 4.

VAM strategy: provide handholding support to local agronomists to offer demand-driven 'complete package'

Oxfam identified most of the available local agronomists in the target areas developing a database of more than 300 professional agronomists. This work was followed by a selection process through pre-announced conditions of the cooperation. Decisive factors for selection were their technical agricultural knowledge, their understanding and experience of market-based agricultural interventions, and their willingness to work with SHFs. Finally, 20 agronomists (6 from the previous phase) were chosen to pilot the newly designed models. Memoranda of understanding were signed and start-up capital was agreed and provided (Agronomists, 30 %, Oxfam, 70 %).

It was understood from the beginning that the revenue streams of each model relying solely on cropping seasons and financial sustainability would only be possible after successful operation through one production cycle. Thus, the work of agronomists was monitored on a continuous basis and any learning shared and incorporated in real time of the operation.

The assessments and consultations have provided clarity in terms of designing proper/feasible models for SHFs that are economically viable for agronomists. There are number of (pre) conditions from the demand/farmers' side (Figure 5). This is important as it turned out that advice alone is not sufficient for farmers to improve their farming practices because of the lack of a wider extension system, reliability of other service providers – especially input suppliers, and high-quality seeds and fertilizers. Therefore, it was proposed to improve agronomists' service package to include input supply, advice, and machinery as well as linking farmers with markets, wholesalers, processing companies, and other

value chain actors. In addition, this ‘one-stop’ service package improved cooperation with farmers and saved time and resources. The majority of agriculture experts may contend that extension services should be specialized and divided between different suppliers, and this may be true for more advanced contexts, but this type of service strongly corresponds to the current level of sophistication and needs of agro-production in Tajikistan, and is especially relevant for SHFs (See Box 1). Furthermore, the role of VAM agronomists, along with other service providers, is critical in the cluster development. Producers in groups, on the one hand, make the process of cooperation more formal and accountable, but on the other hand require higher standards for such services. Thus, the support to the VAM through this phase has been focused on identified cluster commodities, in terms of access to high-quality input and educating the VAM on new cropping technologies and market skills. Stakeholder mapping for VAMs have been conducted to better understand the positioning of VAMs in the rural advisory business (as well as in the context of value chain clusters).

Figure 5: SHFs: factors for success

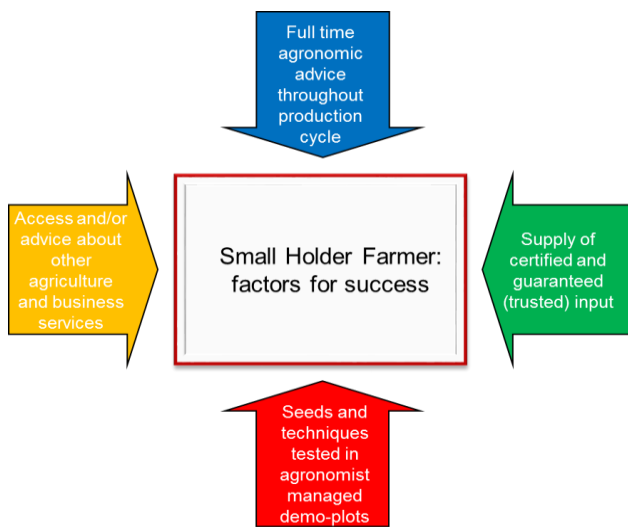


Photo: Oxfam in Tajikistan

Considering longer-term cooperation between farmers and agronomists it was advised to diversify the VAM’s service package, which would include pre-cropping (seedlings, soil tests, etc.) and post-harvesting (marketing) activities.

Learning from VAM consultations: the 'complete package' option

Farmers would like to see a more attractive service package, which would include full-time agronomist advice throughout the production cycle; supply of certified and guaranteed (trusted) input; pre-tested types of seed in agronomist-managed demo-plots; and access to and/or advice from other agriculture and business services (soil and seed laboratories, veterinary services, storage, transportation, loans, market, etc.).

Advice itself must be provided in a more attractive manner. For instance, tech-cards for specific sort of seeds in local and comprehensible language must be provided along with seeds. More than half of respondents find their current input supply (mainly from local district and jamoat markets) unreliable.

Thus, local agronomists can be a trusted link between input supply and SHFs. An 'advice only' service package is not attractive for farmers, nor is it feasible for agronomists because of the small size and scattered locations of land plots. Input supply and advice along with rent of small agriculture machinery and equipment can be both attractive for farmers and economically feasible for agronomists. Through these additional sources of income, agronomists can make a living that is enough to keep the business running as well as providing potential capital for further development. Farmers will have access to high-quality, certified seeds as well as technologies and machinery in order to grow and full-time advice during the production cycle. Moreover, it is important for cooperation between agronomists and farmers to be formalized.

The project piloted three different VAM models (see Box 2) that were tested in demo-plots. Each VAM was based on specific local conditions. Involvement of selected local agronomists was ensured during the entire process of demo-plot development, and close relations between local farmers and local agronomists were established. The entire process was evidence-based and the farmers were able to see actual results in the demo-plots, productivity of which was comparatively high, especially considering that the demo-plots were in fact positioned in the most challenging land areas within the communities.



The services provided varied depending on needs, and farmers were able to cooperate with VAM agronomists on input supply, advice, and access to agriculture machinery and equipment. It is not surprising that during the initial period, cooperation took different forms – informal and formal. Appropriate contracting, information sharing and a feedback mechanism with an affordable price-list were developed based on geographic conditions, crop type and services. Awareness-raising among communities played a key role for farmers to learn and adopt to new ways of working,

i.e. the importance of agriculture planning, improved cropping technologies and formal cooperation with service providers. These models are quite attractive for farmers, specifically SHFs, because of their 'one-stop' capabilities. Access to high-quality seeds and fertilizers, and extension and market advice throughout the production cycle, became accessible for small holder farmers, who would otherwise jeopardize their land production with unreliable and income-oriented market-based input suppliers.

Box 2: Learning from VAM consultations: three models to channel advice

- 1. Agriculture Service Groups (ASGs):** Ideally a CBO sub-committee can also serve as a sustainable mechanism itself to support the market environment for the models described above. CBOs are legally allowed to initiate and operate small-scale income-generating businesses. Having this in mind, ASGs can be empowered with one or more local agronomists, and based on the above principles may carry out extension services and input supply business. The structure and mechanism of this model requires careful analysis as CBOs are not commercial entities.
- 2. Individual consultant – agronomist:** A local agronomist registers as an individual entrepreneur with extension services and the retail of agricultural seeds and fertilizers as the main areas of operation. They can be located either at assigned premises (can be their own house) or be available via mobile phone. The agronomist should regularly conduct demand analysis of the village farmers and plan input supply accordingly. They can also rent out small machinery and equipment to farmers for additional income and to provide farmers with sustainable access to these resources.
- 3. Agro-shop agronomist:** Existing agro-shops in the targeted area agreed to the mechanism whereby an agronomist consultant shares a portion of the agro-shop income (i.e. 5–10 % of net income). They can also make additional income from other agro-shop resources in accordance with the signed contract. This will also benefit agro-shops by attracting more farmers/clients while at the same time building a working environment for a local agronomist.

3. VAM scale and outreach

Overall picture

During the past five years of the GREAT and TRIGGER projects, 20 VAMs – 16 individual consultants, two agro-shop economists and two agriculture service groups – have together directly served 2,423 farmers, of which 1,751 (72 %) are male and 672 (28 %) are female. The VAM model was active in 15 jamoats (sub-districts) of four districts of Kulyab and Kurgantube sub-regions, with an estimated radius of outreach extending to 80 villages and 8,000 households. The figures above measure only direct outreach to the farmers and do not include indirect benefit to a larger number of farmers who received free advisory services or voluntarily adopted new cultivation techniques or input showcased in the demo-plots.

Figure 6: Number of VAM clients.

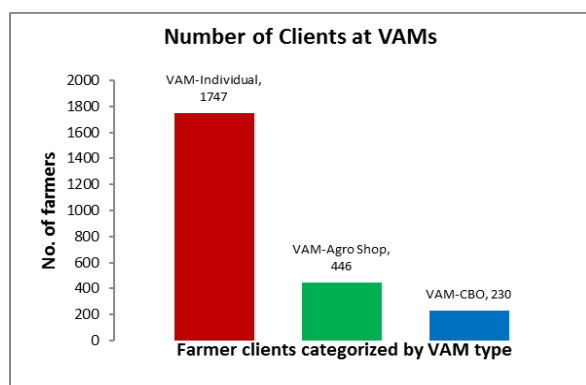
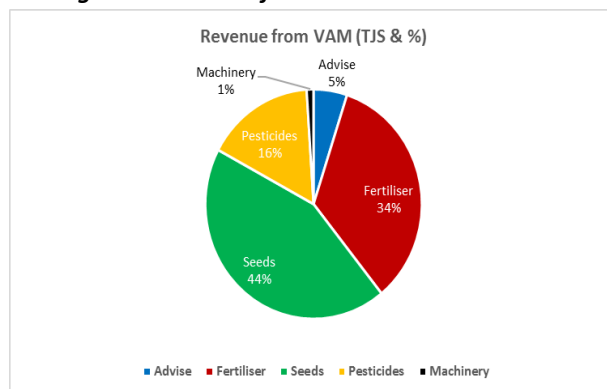


Figure 7: Revenue from VAM.



VAM agro-shops showed the highest efficiency in outreach with two such agents (10 % of total VAM) accounting for over 18 % of outreach, while 16 (80 % of total VAM) individual VAM agronomists have served 72 % of total outreach; the CBO model shows the least efficiency on outreach.

The total revenue generated from 20 VAMs was TJS 184,660 (including receivables). On average, each farmer paid TJS 76 to access products and services from the VAMs, and each VAM received total income of TJS 9,233 from farmers

(excluding direct cost subsidy on input products received from the project) over three years of their operation. Of the total revenue received by 20 VAMs (TJS 158,011), the break-up of revenue across the services shows a maximum of 44 % for seeds followed by 34 % for fertilizers (Figure 7). Advisory services, though accessed by 40 % of farmers, generated only 5 % of the revenue showing a relatively poor return. However, advisory services are critical for generating revenue from the sale of input, since farmers buy input based on the advice of VAMs and therefore advisory services should be seen as an investment to generate sales.

Producer Group (PG) members formed the majority of the clients served (64 %) while the other 36 % of farmers who accessed the VAM services (both advisory and product) were not members of a PG. The gap can be explained because the PG members, as part of the group, undergo structured training and exposure (through demo-plots and extension services) on new agricultural technology and market information, which motivates them to access the VAM for high-yielding input and advisory services. Based on discussions with farmers in the region, one can see a spillover effect of PG organization and VAMs where non-PG members acquire peer-to-peer learning from PG members and show an inclination to replicate the new model, as evidenced by the significant %age of non-PG members demanding improved input and advisory services from the VAM.

Figure 8: Frequency of client visits to VAMs.

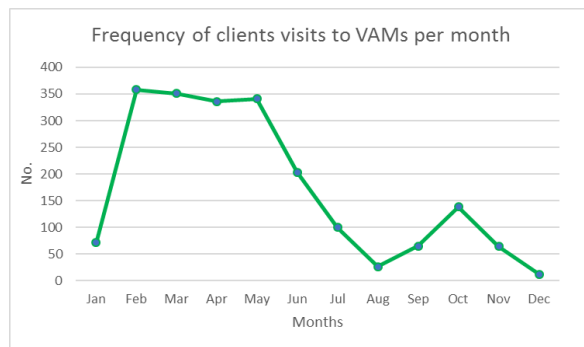
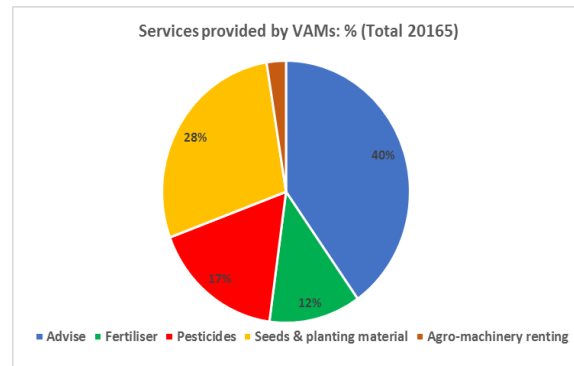


Figure 9: Services provided by VAMs



The VAM business shows seasonality based on the agricultural activity calendar. The frequency of farmer visits to VAMs shows a wide fluctuation based on agricultural season (Figure 8), being highest in Feb–May when farmers prepare for the summer crop and lowest in July–Aug when the crops are harvested, peaking again in October for the winter crop preparation and then sharply dropping by the end of the year. The number of client visits is a direct indicator of business opportunity and, based on the seasonality, it is clear that VAMs face at least one quarter (Nov–Jan) of lean season in winter, which coincides with the period of general food shortages in households.

The financial vulnerability of VAM agents is a big challenge since agriculture is seasonal by its very nature and so does not offer year-round employment. This highlights the need to review the business model where VAMs have regular and stable revenue cash flow throughout the year to support their livelihoods. Value addition to crops, post-harvest support to farmers and linking farmers to storage and other infrastructure facilities can potentially provide complementary income to VAMs in the post-harvest season.

Table 1: Services accessed by clients across key parameters.

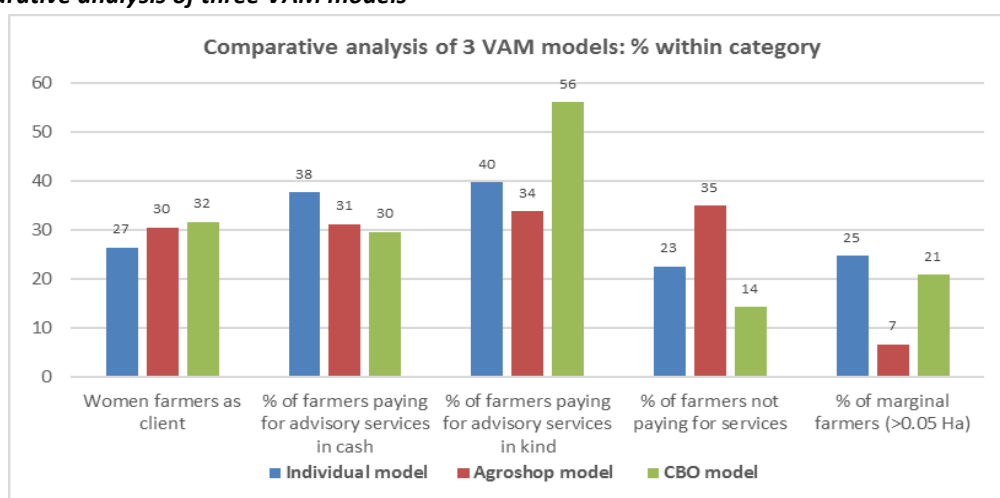
Service/parameter	Advice	Seeds (kg)	Fertilizers (Kg/litre)	Pesticides (litre)	Agri machinery (hrs)
Clients (No.)	830	581	247	355	52
Quantity	1493	96140	15752	528	153
Av. Quantity per client	1.79	165	63.7	1.5	2.9
Total revenue	7902	68913	54052	25516	1628
Total paid by client	7902	35092	25775	15400	674
Av revenue per client	9.5	119	219	72	31

Table 1 summarizes the services accessed by clients across key parameters. Seeds and fertilizers are the main revenue earners for VAMs while the market for agricultural machinery rentals is still small.

Over the course of five years of the GREAT and TRIGGER projects, the VAMs provided nearly 1,500 paid advisory services to 830 farmers. The average number of services provided is nearly 1.8, and over 53 % of farmers were repeat customers, seeking advisory services more than once. This shows the growing demand and value add of advisory services to farming.

The VAM agronomist earned a total of TJS 7902 from payment for advisory services with an average of TJS 9.5 from each farmer who accessed the service (a fixed TJS 5 is charged for each service). Only 10.5 % farmers paid more than TJS 15, indicating low revenue from the services.

Figure 10: Comparative analysis of three VAM models



Overall, the individual agronomist model shows the highest demand for paid services where 38 % of clients have paid for their services in cash. Although 86 % of farmers have paid for services in the Community Based Organization (CBO) model, either in cash or in kind, the cash payment for the service is comparatively low (30 %). On this measure, the agro-shop model shows least efficiency, where 35 % do not pay for the advisory services. If payment in cash is taken as a measure of profitability for advisory services, then the individual agronomist model shows the highest profitability, followed by the CBO model.

Farmers tend to value the extension services of individual agronomists more, and hence pay for this, since these agronomists are more mobile and therefore can make frequent visits to farmers' fields for continuous monitoring and follow-up advice. Such a hands-on approach builds a deeper commercial relationship between the individual agronomist and the farmer, in contrast to agro-shop model, which generally provides advisory services as embedded services with the product, making it less tangible and therefore harder to tap for revenue. CBO agents are more likely

to accept payment in kind since they have a wider network to sell the revenue received in kind. However, the payment in kind option for services rendered suppresses the emergence of an advanced monetary market for advisory services, since the price signal is likely to be distorted by the complications of assessing the value of payment in kind.

There is a marginal difference between the categories on outreach to gender, though the CBO model tends to be ahead on serving women farmers (32 %). Overall, the average outreach (29 %) to women by all three models remains weak, which can be attributed to skewed gender relations in the agriculture sector in the region. Women often contribute more than men to agricultural labour, but get less decision-making power on decision-making process like input and extension services.

The individual agro-shop model is more efficient at reaching out to marginal farmers (25 %) with advisory services while the agro-shop is least. This again is due to greater accessibility of individual agents to the farmers compared to other categories.

In nutshell, the individual agro-shop business model seems to be more efficient in creating demand for VAM services and in outreach to the number of marginal farmers reached, but marginally lags on gender, where it served a lower %age of women. A gender-specific strategy within this model that builds incentives for targeting women farmers can potentially make it the most appropriate model from economic and inclusivity perspectives for scaling up. Finding high-calibre women from the rural areas to become individual agronomists could play a major role in addressing gender barriers; however, finding such individuals has always been a challenge in the context of rural Tajikistan.



Photo: Oxfam in Tajikistan

Impact of VAM²

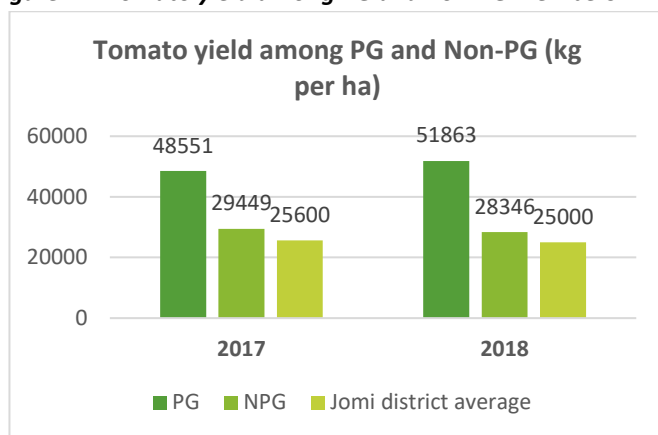
The immediate impact of VAM can be viewed from two complementary perspectives: firstly the impact of VAM on the productivity and income of farmers, and secondly the business performance of VAM enterprises. The two dimensions of VAM performance are intertwined, since a financially viable VAM is essential to providing sustainable services to SHFs, who in turn benefit from income and productivity improvements.

The short-term result clearly shows that VAM has led to improved yields and productivity for SHFs, but the result on financial performance is mixed. After two years of operation, VAMs have generated net operating profit; however, none have achieved break-even on net RoI, mainly because of the high cost of setting up VAM enterprises. The main results are further analysed below.

Impact on crop productivity for SHFs

- SHFs who are members of a PG linked to a VAM have achieved major improvement in productivity for onions and tomatoes (see Figures 11 and 12). The net productivity improvement in onions between PG members linked to a VAM and non-PG members is 48 % (2017) and 40 % (2018). For tomatoes, the yield increment is even higher, 64 % (2017) and 83% (2018) for the two respective groups. These results clearly establish the impact of VAMs on improving the productivity of SHFs.
- It is interesting to note that the non-PG members show a significant jump in productivity when compared to the average yield from the district³ for both crops in two years. This can be attributed to the spillover effect⁴ of the VAM. Non-PG members belonging to the same village as PG members benefit from the peer learning derived from PG members. Furthermore, they also have access to VAM agro-shops for the purchase of high-quality input. For the members of the PG, the crucial difference is their membership of the group, which provides them with intensive training on the use of improved technology and input for high productivity. In addition, the PG members also benefit from continuous monitoring and advisory support from the VAM entrepreneurs throughout the cropping season.
- Based on the points mentioned, it can be surmised that while local availability of input and peer learning does contribute to marginal increases in productivity, for a major boost, institutional support of PGs is of critical importance.

Figure 11: Tomato yield among PG and non-PG members

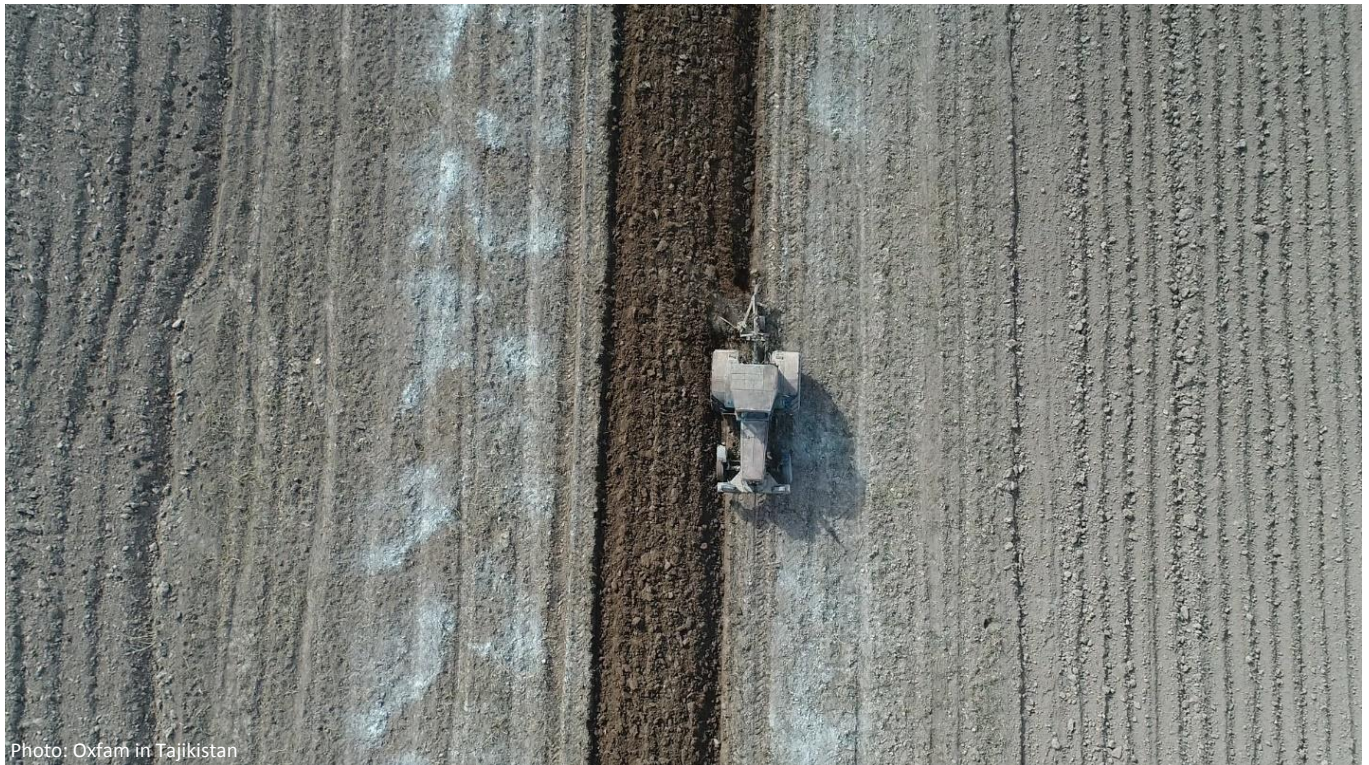
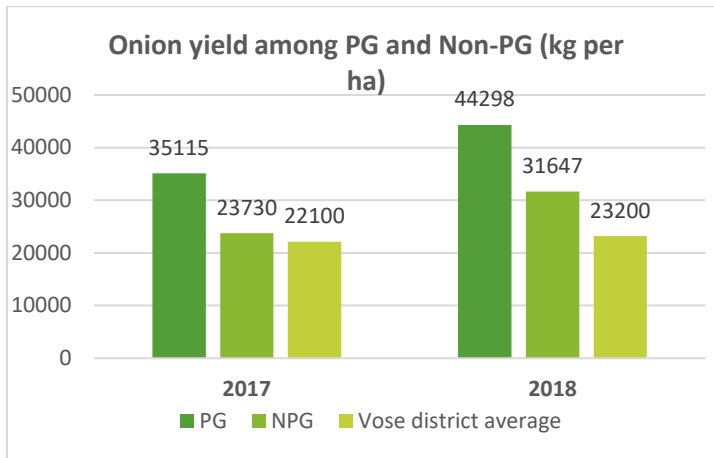


² Impact assessment is based on preliminary analysis of field data. Due to the seasonality factor in agriculture, only limited data is available at this point and data for more crops is likely to be available by end of 2018.

³ Data obtained from the local Hukumat (district) office of two districts.

⁴ Based on interim assessment and discussion with the farmers from all three groups.

Figure 12: Onion yield among PG and non-PG members.

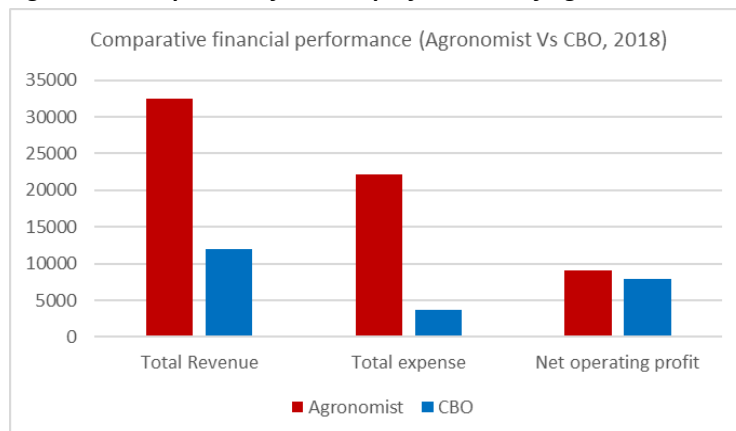


- While revenue and sale assessment of tomatoes and onions has not been carried out for the latest cropping season, it is reasonable to expect a major jump in net income for SHFs who are part of a PG compared to non-PG members. As in previous years, this net increase is likely to come from the joint sale of produce by the farmers through the commodity clusters promoted by Oxfam as a commodity specific, aggregates of PGs operating at the district level.

Financial performance of VAM⁵

- The business performance of the VAM shows that the enterprise is not yet a financially viable model. Without the provision of subsidized start-up capital, the net RoI will be negative, especially for the CBO model where the subsidy component was higher.
- The negative RoI⁶ is mainly due to high start-up cost for VAMs: TJS 52,000 and TJS 20,000 for the CBO-led and agronomist-led models respectively. The cost of capital in a poor country like Tajikistan is very high – on average agriculture term loans have 25 % interest rate (slightly less than average commercial loan rate of 30 %), which makes most business enterprises difficult to start and sustain.
- The business environment of Tajikistan is highly complicated and constrained due to a convoluted tax regime, including high tax rates, weak enforcement of property laws and legal contracts, an onerous regulatory environment, an anaemic finance sector (most banks are facing a liquidity crisis and many microfinance institutions (MFIs) have recently closed) and a near absence of business development services (insurance, infrastructure development, skill development, market linkages). In such a scenario, sustaining a viable agriculture enterprise is extremely hard. Globally, the agriculture sector in both developed and most developing countries depends on public subsidies to sustain farmers' livelihoods and to secure food security for the nation.⁷ In Tajikistan, public subsidies in agriculture are insignificant (less than 3 % – TJS 583 million – of total national budget allocation went to the agriculture sector in 2017),⁸ making commercial farming almost unfeasible.
- In view of the financial performance of VAMs, the replicability of the model by the private sector without any upfront grant/subsidy support is less likely. A more holistic way to measure VAM impact is to use tools generated by a new impact evaluation framework, such as the Social Return on Investment (SRoI),⁹ which takes into account the financial, social and environmental impact of enterprises to determine RoI. The increase in productivity for SHFs, adoption of climate-resilient agriculture practices with their positive impact on environment, and emerging social capital generated from farmers' institutions promoted by Oxfam, are some of the key indicators that can potentially be incorporated in VAMs' SRoI. A robust result on SRoI makes a case for possible replication of VAMs by government, development agencies and private philanthropists. In fact, strong SRoI can potentially lay the groundwork for further advancement and commercialization of SHF agriculture in the country.

Figure 13: Comparative financial performance of agronomist and CBO, 2018.



⁵ Based on detailed financial analysis of two VAMs; one agronomist-led and another CBO.

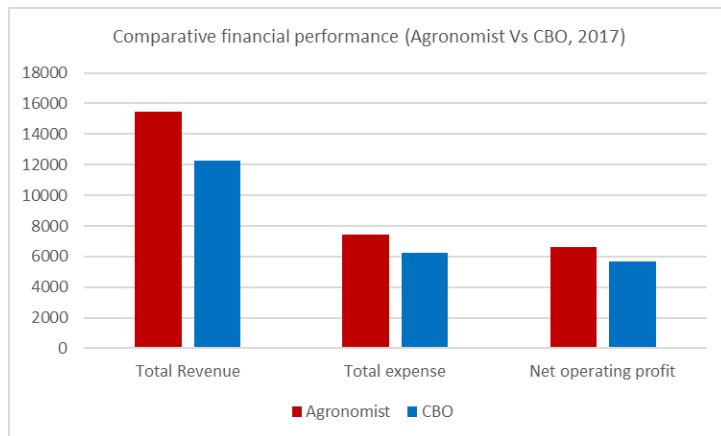
⁶ Based on calculation for Weighted Cost of Capital (WCC), without including any subsidy.

⁷ Estimated to be \$486 billion (2012) for 21 top food-producing countries in the world. More details on website: <http://www.worldwatch.org/agricultural-subsidies-remain-staple-industrial-world-0>

⁸ Website of Asiaplus newspaper: <https://asiaplustj.info/en/news/tajikistan/power/20161116/233268>

⁹ SRoI analysis is not possible at this stage because of lack of complete data.

Figure 14: Comparative financial performance of agronomist and CBO, 2017.



While the VAMs have shown decent annual revenue flow, their spread over the year is erratic with only a few months before the onset of the agriculture season showing good return (Jan–March and May–June), while the sales are low in the non-agriculture season. Therefore, some VAM agronomists see a VAM enterprise as a secondary source of income and prefer to find other income-generating activity in the non-agricultural season to supplement their income

- Net operating profit figures for both models show higher returns with the individual agronomist model and this difference would be greater if we take into account the value of the subsidy support, which was much higher in the CBO model. Thus, comparatively, the agronomist-led model generates a greater financial return than the other models trialled.

Wider impact of VAM

The wider impact of VAM is mostly non-economic in nature but has a potential long-term implication on the SHF agriculture system in the Khatlon region. Obviously, it is not possible to measure changes on these indicators in the short time of the project, but one can make projections based on emerging evidence. Some of the anticipated non-economic impacts of VAMs are listed below:

- VAMs have deepened the knowledge base on agriculture in remote villages leading to wider adoption of new packages of innovative cultivation practices. Earlier, the flow of information on agronomy practice was highly limited, and apart from a small section of resourceful farmers, SHFs were mostly excluded from new farming technology. Today, because of VAMs, access to information is more equitable, which is benefitting farmers across the region.
- VAMs have introduced many new climate- and pest-resilient hybrid seed varieties of tomato crop to the region, which has replaced local varieties susceptible to damage and crop loss. At least ten such tomato varieties have been introduced to the region over the past five years, having conducted thorough trails in the VAM demo-plots. The new varieties are now adopted widely by farmers in the region, contributing to a climate-resilient agriculture system.
- There is evidence of private companies from across the country, especially from the northern region of Sughd, being involved in agricultural input supply and distribution, having started to make fresh forays into Khatlon region. New supply chains have been emerging not only in the big cites of Khatlon, but also in smaller district centres. Oxfam has been proactively engaging with many private firms¹⁰ to encourage them to set up business in the region, and here the deeper and wider outreach of VAMs throughout the region has played a role in motivating companies to set up new supply chains. This has cut the cost of procurement for the local agriculture input shops and VAMs that had earlier relied on the markets in Khujand in Sughd for their supply, involving long and costly journeys.

¹⁰ Oxfam supported input supplier business engagement initiatives mainly under its Gender Enterprise and Markets (GEM) project (2014–17) and more recently under TRIGGER. Result reported here is partly based on GEM.



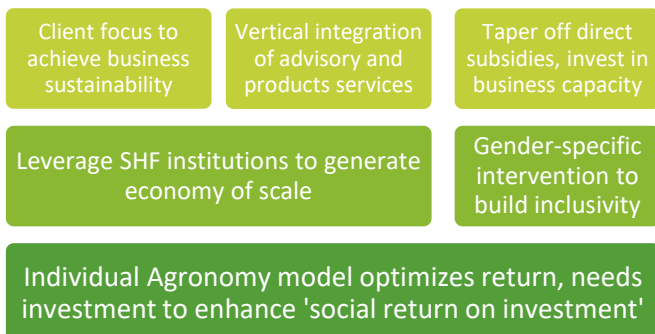
Photo: Oxfam in Tajikistan

5. Main lessons learnt

Oxfam's investment in the VAM model over the last five years has provided valuable experience and lessons on building supply-chain and extension services in rural Tajikistan. The project employed a sophisticated Management Information System and conducted an evaluation process that has led to a robust body of evidence on the key results and impact. Some of the main lessons from this period of working on the VAM model are as follows:

Client focus to achieve business sustainability: VAM was designed as a business enterprise with a clear purpose to serve advisory and input supply needs of SHFs engaged in the cultivation of vegetables and rice. Experience suggests a huge diversity within the category of SHFs based on factors, such as land size, location and quality, proximity to regional/local markets, existing skill base for agriculture, and availability of farming infrastructure like irrigation, soil and so on. As a local village-level enterprise, VAM needs to address issues with input supply and services based on specific conditions of the village cluster. A prescriptive, top-down approach to extension services will be less effective since conditions vary. A customer-centric approach will demand that VAMs focus on *generating revenue from customers and not from product*, which often is the case. In most instances, customer satisfaction can be enhanced by providing a package of services and products that builds on the current skill and resource base of farmers rather than disrupting the existing system. Another important aspect of client focus is mitigating risks for the SHF by suggesting a package of practice that optimizes return while minimizing risks.

Figure 15: Business sustainability framework



Vertical integration of services and input essential to generate demand: Advisory services should be embedded in the product marketing to generate demand. The market for standalone advisory services by extension agents is limited and may not offer a viable business model. Analysis of VAM clearly indicates that where VAM agents were effective in providing useful advice to farmers, especially on-site advice, a higher revenue was generated from the sale of produce and they therefore derived higher profitability from their business. CBO, due to constraints on providing regular field-based support, was less profitable, whereas individual agronomists maintained a close business relationship with farmers and therefore could bundle their advisory services and product sales for a profitable business proposition.



Balancing public good and commercial information for client protection: The bundling of commercial advisory services with sales of product can potentially lead to situation of moral hazard, where VAMs may be inclined to over sell their products – say chemical fertilizers and pesticides – to less informed SHFs, boosting revenue but eventually harming the public good, such as degrading the land or harming the environment. Therefore, client protection is critical here, and Oxfam tried to address this in two ways. Firstly it endeavoured to ensure that strong bonds of trust existed between the VAM and the local community. VAMs were validated by the communities through PGs before selection, so the first criterion was ‘trust among community members’. All of these specialists were well known and respected people in the communities, and the respect was mutual. Secondly, the VAMs were motivated by Oxfam to initiate numerous campaigns (some of them supported by the project, most of them not) on dust storms, heat storms, pest attacks, the collective fight against pests and even hunting for pigs. As a result, there was wider awareness in the community of externality associated with a high-yielding cropping system, a knowledge that shielded them against potentially unscrupulous or predatory behaviours of VAMs.

Leveraging farmers’ institutions is key to achieve economy of scale: Serving individual SHFs scattered in remote villages, through VAMs involves a high transaction cost and is often not profitable for the VAMs. Farmers’ collectives like PGs and their clusters can facilitate the aggregation of demand for services, which is crucial for achieving economy of scale. Analysis on profitability of 20 agronomists indicates a higher return for those serving a higher proportion of PG members in their client base. Members of PGs and their cluster acquire knowledge and skills on advanced technology for cultivation and therefore generate a greater demand for VAM services.

Gender specific intervention required to mainstream: In overall terms, the VAMs returned with only modest achievement in mainstreaming gender into agriculture extension services. This was mostly because of a lack of specific strategy and

intervention on strengthening the gender aspect of the programme. In a region where women traditionally are discriminated against and marginalized when it comes to their access and control over agriculture production systems, gender-specific intervention is essential to improve women's participation and capacity in decision-making roles. In select quarters, the project incorporated gender supportive principles, such as the use of only small tools and machinery by VAMs, which helped women to expand their farming and cut the drudgery of field labour. However, on the flip side, women were under-represented in PGs and clusters and there was lack of thrust on enlisting women entrepreneurs as VAM agents that could have attracted more women farmers to access services. The key learning here is to integrate gender into the design principle of VAM with specific targets and indicators to achieve inclusivity.

Direct subsidies should be tapered off, replaced by more investment in business development skills: VAMs received subsidy from the project in the form of purchase of inventory (agriculture input) and 100 % subsidy on training for the VAM. Market assessment carried out for designing of VAMs clearly showed the near absence of input distribution and supply-chain and extension services in remote villages. Furthermore, the financial and technical capacity of prospective VAM agents was highly constrained because of widespread poverty and, as noted earlier, the macro environment for ease of doing business is highly challenging because of complex taxation rules. Finally, access to financial services to set up business for VAM entities barely exists. In such a difficult operational environment, part subsidy was seen as essential to kick-start the enterprise. However, the project lacked a clear pathway for the gradual tapering of subsidy, which is essential to move to a sustainable future. In future, the enterprise should be weaned away from subsidy, otherwise it may distort the price signal that should come from a competitive market, and as a result, may deter crowding-in of business entities.

A major gap in VAM pertained to the weak business capacity of the enterprise, for example in business development, inventory and financial forecasting and management. Considering that most of the VAM agents are local first-generation entrepreneurs with limited business skills, such capacity is crucial to build a profitable enterprise. In most cases, the VAMs remained dependent on project staff to manage their inventory and finance. Provision for building business capacity was missing, which left a long-term gap in the capability of VAMs to manage their enterprise independently.

Individual agronomy model optimizes return: Overall analysis of three VAMs shows that the individual agronomist model derives the highest return on investment, though it falls short, in relative terms, on achieving results on inclusivity. The individual model enjoys clear advantages, such as higher mobility to monitor, greater flexibility in service offering, closer relationship with the local farmer community, low upfront costs of setting business, and so on. However, unlike the CBO model, it provides no incentive or mandate to address the social bottom-line, which explains its below average performance on gender inclusion and engagement with marginal farmers. To mainstream inclusivity in the model will require a fresh look at its design to identify where new incentives can be built in to address social issues.



6. Future of VAM

The market maturity of VAM has reached a stage where it has clearly demonstrated its effectiveness in meeting extension and input supply needs of farmers. VAM agents have created an upsurge in demand for agriculture services by deepening the supply-distribution system at the village level, making such services accessible to SHFs in terms of quality, affordability and timeliness. In future strategy, the model has potential to evolve as a sustainable and self-replicating business enterprise, attracting more investment from private companies. For this to happen, VAM should transform to a complete market-based approach with focus on leveraging the private sector, and addressing systemic gaps in policies, rules and regulatory standards. Based on this approach, the following design principles for new phase of VAM is suggested.

Figure 16: Design principles for a new phase of VAM.



Market based approach: The VAM should be transformed into a pure market-based programme with a private-sector approach to expanding the network of VAMs. Public investment in agriculture sector development is unlikely to increase in the near future, and therefore, a cost-efficient private sector model holds the promise of reaching out to SHFs with its

services. The new approach will call for a transition from the current hybrid model – with a partial role for market and driven by subsidy – to a new strategy where private companies and market agents take over the role of scaling up the programme. The groundwork prepared by VAM has provided a strong fillip to the demand to services, which presents an opportunity to build a dynamic competitive market for agriculture input supply and extension services. A systems approach, based on removing identified bottlenecks (e.g. financial services, information sharing, rules and standards, tax reform) in the market performance, is essential for attracting investment from the private sector. The biggest challenge for expansion of VAMs will be availability of affordable start-up capital to reduce the cost of investment and to generate net positive RoI. The private companies can devise a cost-efficient model that reduces capital investment through innovation. A market-based approach will work when market information on demand–supply starts to flow attracting private companies to invest in expanding existing supply-distribution networks boosting volume and setting up a virtuous cycle of attracting further private investment. A hub and spoke model at the cluster level where the hub agro-shop builds a network of individual agronomists as mobile spokes, holds promise of deepening the outreach. A set of private companies involved in input supply business at regional/national scale can invest in building a network of such a hub-spoke model.

Build sustainability principle in new design: To remove subsidies, the new VAM design should revisit the whole paradigm of the ‘who does and who pays’ principle. The market is now sufficiently matured to shift to a new transaction role where VAM pays for services in full (training, inventory, capital and operational cost) and VAM is paid by beneficiaries, mainly SHFs, based on competitive market pricing. This will build much-needed efficiency and client focus into the model and will attract new VAM entrepreneurs.

Facilitation role of Oxfam: Oxfam and its partner need to now transform their role from implementers to facilitators focusing on removing negative market externalities (controlled use of chemical input, managing environmental and social risks), facilitating market agents to forge partnerships and collaboration, fostering innovation and conducting evidence-based advocacy. A key future role for Oxfam should be to contribute towards the removal of systemic bottlenecks in the market, especially those pertaining to business rules and regulations, and taxation, to develop the sector.

Building incentive for change: Private sector and the market respond to clear incentives supported by secured property rights. Building economic incentives for attracting private sector investment in VAM will require continued investment in building farmers’ institutions at different levels that can optimize economy of scale. A second main incentive pertains to the seamless flow of market information for core transactions to take place. The Oxfam PG and cluster model is now well-established but needs fresh investment for scale-up, which can be done by local civil society entities, such as CBOs. A national-level agriculture market information system should be set up, leveraging IT technology, that can bring fundamental reform to market structures.



Photo: Oxfam in Tajikistan

DISCLAIMER:

The Towards Rural Inclusive Growth and Economic Resilience (TRIGGER) project was implemented by [Oxfam GB in Tajikistan](#) along with [Deutsche Gesellschaft für Technische Zusammenarbeit \(GIZ\)](#) and the financial support of BMZ.

While this document has also been produced with the financial assistance of Deutsche Gesellschaft für Technische Zusammenarbeit (GIZ) and BMZ, the views expressed herein cannot be taken to reflect the official views or opinions of GIZ / BMZ. All errors and omissions are our own.

PREPARED BY:

Seyed Faiz Hayat – Economic Justice Programme Manager, Oxfam GB in Tajikistan

CONTRIBUTORS:

Farhod Khalikov – Deputy Economic Justice Programme Manager, Oxfam GB in Tajikistan

Kiyomiddin Izzatov – Marketing Specialist, Oxfam GB in Tajikistan

Abbos Karimov – Programme Officer, Oxfam GB in Tajikistan

EDITED BY:

John Smythe – Business Development Analyst, Programme Funding Team, Oxfam GB

Jonathan Puddifoot – Head of Business Development, Oxfam GB