

Cross-border trade application

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I. Introduction

Tajikistan and Afghanistan share a common border of 1,206 km along the Amu Darya and Panj rivers. In addition to geographical proximity, within the area that covers Badakhshan region in Afghanistan, Gorno-Badakhshan (GBO) in Tajikistan and Chitral in Pakistan, Afghanistan, Tajikistan, and Pakistan share valuable cultural, historical and natural assets. In both sides of the river, agriculture provides the main source of income which depends on transport connectivity and access to markets. The area is prone to natural disasters such as floods and landslides and security and instability threats such as extremism (especially, given the exit of American troops from Afghanistan) and illegal trade activities. However, there are also significant opportunities to strengthen trade of goods and services between the three countries leveraging this proximity in order to create better livelihoods for border communities.

The long-term social and economic development of the two countries depends on ensuring stability and economic integration along the shared border. There is a potential to reinvigorate the historical links of Silk Road and enhance long-term development. Cross-border trade in Central Asia already accounts for USD 8.5 billions each year, mostly through small-scale exchange of agricultural and consumer goods. A World Bank study highlights that cross-border trade mostly benefits small and medium-sized enterprises, with a disproportionately positive effect on local incomes. Thus, enabling cross-border trade provides local incentives for stability and cooperation, whereby “the most significant effect of growth in cross-border trade is likely to be poverty reduction in communities in contiguous regions” (Germany Trade and Invest, 2014).

GBO is an autonomous region in the East of Tajikistan, which borders Badakhshan province of Afghanistan in the South and West. Given that the region is high in the Pamir mountains, only a very small percentage of the land can be cultivated. The Badakhshan region in Afghanistan is located in the north-eastern region of the country and shares borders with Tajikistan. Nearly nine tenths of the province is mountainous or semi mountainous. Given the remoteness of these regions, both GBO and Badakhshan regularly experience shortages of several products. On the Afghan side these include (i) fresh fruit and vegetables, (ii) food items (mainly processed), and (iii) household daily use items. On the GBO side these include (i) household daily use items, (ii) food items, and (iii) construction materials. Improving cross-border trade not only presents an opportunity to increase the availability of these products but also allows for improved inter-border relations. (International Organisation for Migration , 2016)

In addition to this, improved border market trade will result in both income and employment benefits for the region, with a potential multiplier effect on other sectors of the economy. Specifically, ACTED found that participation in the cross-border trade formed about a quarter of a monthly income for majority of the surveyed Afghan traders, and over 50 per cent for a third of them (International Organisation for Migration , 2016).

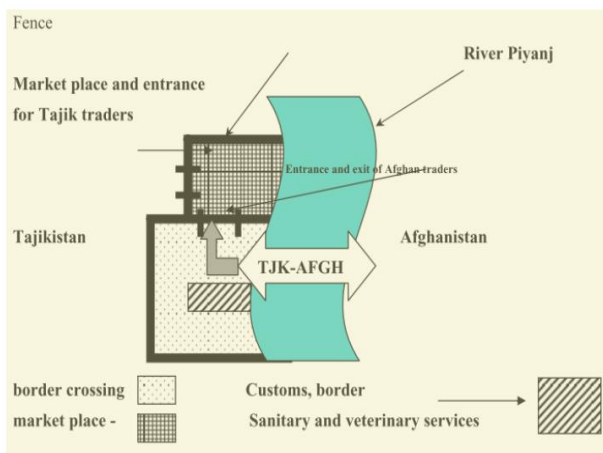
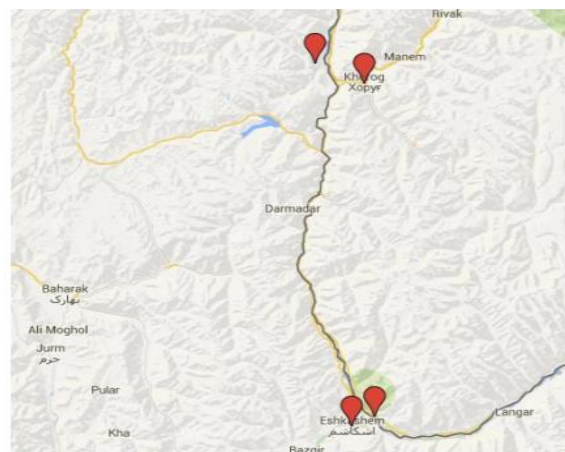
Cross border markets also result in access to cheaper goods which improves consumer welfare. The assessment conducted by the IOM found that Tajik consumers were able to buy goods at 30 percent less than local markets, whereas Afghans could buy products at a 10 to 20 percent discount. In addition, according to CABAR.asia, despite the unstable situation in Afghanistan, the business skills of Afghan citizens are advanced (CABAR.asia, 2019). While the Tajik sellers mostly offer Chinese products, the Afghan entrepreneurs are very skilled in the handcraft manufacture. The products of Afghan merchants are therefore in high demand, who benefit vastly from cross-border trade.

Border trade has benefits for vulnerable groups such as women. As many as 1.5 million Tajik citizens, 90% of whom are young men, emigrate to find work opportunities abroad. Most of these migrants are married with children and support households that have on average 7.5 persons. Approximately one in three migrants' wives, over 300,000 young women, find themselves left alone and impoverished, entirely dependent on help from family, relatives, and friends (World Bank, 2019). Creating necessary cross-border trade infrastructure will address some of these constraints affecting women in the target areas. It will support the economic empowerment of women and their financial inclusion through access to markets.

Border Markets

There are four border markets between Tajikistan and Afghanistan. These markets are located around bridges and established Border Crossing Points (BCPs). The four border markets are located in Tem

micro district of the city of Khorog, in the center of Ishkoshim district, in the villages of Ruzvai – Darvaz and Khumrogi in Vanj region. (Reporting, 2019) These border markets are set up as duty- free zones allowing for the exchange of goods and services, within a limited maximum value, without the need for a visa. Goods sold here, below USD 1,000, are not taxed.

Figure 1: Structure of the border markets¹Figure 2: Border markets in Tem and Ishkashim²

Current border markets have between 80 and 200 traders and can have daily customer flows of about 4000 customers. Despite the fact that the borders are open for six days a week, currently market activities only occur on one day, usually Saturday for Tem, Ishkashim and Darvaz markets, highlighting missed opportunities for trading in the region.

Market	Distance from nearest city	Current status	Number of traders	Number of daily customers	Facilities	Opening times
Tem market	Five kilometers north Khorog city	Open (Reporting, 2019)	300-500	2,000 to 3,000	In early 2014, MSDSP launched a reconstruction of the market, with more space for shelters, shops, storage and an area dedicated to Afghan female traders. Water and electricity provision was improved by Tojikmatlubot.	9am- 2pm on Saturdays
Ishkashim	Connected to the provincial capital of Faizabad		About 800	3,000 and 4,000	Market upgraded in 2018 utilizing UNDP funds 3, considered to be the most famous among all markets	Saturdays

¹ (International Organisation for Migration , 2016)

² (International Organisation for Migration , 2016)

³ <https://www.tj.undp.org/content/tajikistan/en/home/projects/good-governance-projects/ongoing-projects/promoting-cross-border-cooperation-through-effective.html>

Darvaz	Close to Darvaz district center		400	N/A		Saturdays
Vanj	Near Vanj district	Not operational	400	N/A	The market is yet to be operational. No time estimates.	Saturdays
Khatlon region						
Sh. Shokhin district	Sh. Shokhin district (former Shurabad district)		400		warehouse storage, 150 ton; laboratory rooms	

Key traded items

Goods sold at the cross-border markets vary from agricultural products such as fresh fruits and sterilized milk to manufactured products such as electronic goods as depicted in the diagram below. There are seasonal demand fluctuations especially for dried and fresh fruits, flour and process food, with demand dropping in summer and autumn due to surplus domestic production. Though sales volumes are low, price differences allow for benefits for engagement in cross-border trade. A survey carried out in 2016 showed that milk was 25 percent cheaper in the border market as compared to the price in Tajikistan, while sugar was 25 percent cheaper. Given this, market closures have negative impact on poorer families who source their products from here (Price & Hakimi, 2019).

Figure 3: Typical goods sold in the Afghan-Tajik border markets Figure 4: 2016 observed market price differences

Types of goods sold by Afghans	Type of goods sold by Tajiks
Sterilized milk	Electronic goods
Carbonated drinks	Fresh fruit
Tea	Dried fruit
Soap	Flour
Clothes and household items	Clothes and household items
Processed and unprocessed food	Processed and unprocessed food
Cooking oil	

Item	unit	Khorog	Shegnan	Ishkashim TJ	Ishkashim AFG
Sugar	1 kg	1.03	0.85	1.03	0.91
Rice	1 kg	1.47	1.44	1.47	3.26
Oil	1 lt	2.21	1.52	1.91	1.52
Oil	5 lt	8.53	7.58	8.09	7.58
Tea	1 kg	3.68	3.64	2.94	3.64
Milk	pack (24 pcs)	7.06	6.06	7.06	5.61
cucumber	kg	1.47	-	2.94	1.67
tomato	kg	2.21	-	2.94	1.82
onion	kg	0.37	0.53	0.37	0.76
potato	kg	0.44	0.45	0.37	0.76
Flour	50 kg	26.47	30.30	25.74	27.27

II. Challenges

Market days

While the cross-border bridges are open for six days a week, the markets are operational only on Saturdays. National regulations also allow the CBMs to be closed by the State Committee on National Security for security reasons, or due to infectious diseases, natural hazards etc. In 2013, the CBM in Tem opened for only 42 days and the one in Ishkashim for only 32 days, out of 52 Saturdays in the year. In addition to this, there is lack of clarity of market closure days – this is especially problematic for customers.

There is an information asymmetry on market opening and closing days for both buyers and sellers from Afghanistan. Bringing products to the border markets requires significant efforts and resources. However, sometimes buyers and sellers find the market closed after passing the border. Or even more frequently, what they are looking for is not available on the market since the supply and demand data does not exist online. For Afghan traders, there is no way of accessing this information remotely from the other side of the river unless they cross the border. This results in inefficiencies in the cross-border trade.

Inefficient border control systems

The market opening hours are restricted by customs and border control checks with delays often resulting from the late arrival of market management staff and inefficient border management systems. On average, the normal market days last for only 3 hours despite the fact the border crossing is simplified and does not require visas. In the Tem market, under the current system, a list of traders planning to attend the CBM is submitted to the Tajik border guards on the day before the market. Given this, on the day of the market, the Tajik border guards simply crosscheck names with individuals looking to cross the border. This streamlined process means that it takes an average of 2 minutes to process each individual. Despite this, the limited number of check points means that it still takes several hours for checks to be completed limiting the market operating hours. In addition to these, free movement is limited by several restrictions such as the need for ID cards as a lot of traders do not have these. (International Organisation for Migration , 2016)

Poor infrastructure

Some traders are left to trade under the sun due to the unavailability of adequate trading structures. This is an important factor as in GBAO, the annual mean temperature is -6°C as compared to $+17^{\circ}\text{C}$ in hot southern districts of the country⁴. International organizations have allocated significant funds for the construction of border markets in GBAO. However, the potential of cross-border trade is not fully utilized as “many traders sell their goods under the open sky, in the heat and cold” (CABAR.asia, 2019). In addition to this, there is a need for the development of storage infrastructure as this would reduce the transportation costs and cumbersome process associated with moving goods on each market day. However, it will be necessary to ensure that security measures are in place to ensure the safety of products that are left behind.

Physical access to cross border markets can also be a challenge. While there are access roads on the GBAO side of the border, this is not the case on the Afghan side. This is especially challenging for Afghan settlements that are further away. (International Organisation for Migration , 2016). Until relatively recently, there were no bridges across the Panj River. During the Soviet years, a ferry operated in the Aivadj district, which served the insignificant trade between Tajikistan and Afghanistan (Umarov, 2013). Construction of automobile bridges across the Panj River began in the post-Soviet period. There are around a dozen bridges connecting the two countries. Over 10 years, the Aga Khan Development Network, in collaboration with both governments, constructed four more bridges to increase regional stability and prosperity in border areas (Asian Development Bank, 2020).

Regulation

The Ministry of Economic Development and Trade of Tajikistan (MEDT) coordinates the cross-border markets, and several other government departments are responsible for different operational aspects. The State Committee of National Security oversees Security and Supervision, the Ministry of State Income and Tax is charged with Custom control and the Ministry of Public Health is responsible for Sanitation. Tojikmatlubot (Union of Consumer Societies) is responsible for the management of markets, this involves cleaning, safety, and reporting to the local government (khukumats). (International Organisation for Migration , 2016).

III. Key Informant Interviews from border markets

Traders in the border markets mentioned that a digital solution would be useful for their business. The common point among the interviewed traders was that they bring their goods to the market without having an understanding about the demand. Based on their experience, traders bring goods they think is demanded. And sometimes the lack of demand leads to perished goods. Knowing what would be available in the market was an idea commonly shared with enthusiasm among the interviewed traders.

The existing alternative to knowing about the demand virtually is direct communications between traders on the market days. Traders from both sides let each other know what would be needed on the next market day. However, that is not a sufficient mechanism of communication. First, the demand of traders

⁴ Third National Communication on Climate Change, UNDP, 2014

could change before the next market day and the traders are limiting themselves to one supply source. Second, except for traders who come and buy from the market, the residents of the border areas will not have that information. For these reasons, the interviewed traders mentioned that an availability of a virtual platform for communications and seeing the products and their details would be useful.

Among the interviewed traders, there was an agreement in the timeliness of such solutions in the age of technologies. While there are some traders who don't frequently use internet connection, they mentioned that they would obtain the necessary connection to drive their business forward. However, a simple technical solution that would not consume too much traffic would be ideal.

IV. Proposed Tools

The overall objective is to identify and pilot specific approaches to strengthen cross-border trade of agricultural products between Badakhshan in Afghanistan and GBAO in Tajikistan. With the specific objective to test the viability and pilot a virtual marketplace that would allow the supply and demand of agricultural products to connect.

With current mobile broadband subscription at 60.4% of the population and given that only 34.9% of the adult population are internet users, it's inevitable that there will be challenges to piloting any virtual marketplace (Hootsuite, 2021). However, considering the growth of mobile internet users, a product could be prepared to cater to the needs of buyers and sellers in the border communities of Afghanistan and Tajikistan.

Based on the information collected about the context and condition of border markets, this section will list potential tech solutions to tackle the problem of Tajik-Afghan cross border markets. It will provide an overview of each solution briefly analysing their advantages, feasibility, and costs.

Option 1: Android mobile application

This option includes the development of a multi-user mobile application to connect suppliers with customers. This application will have a feed with products listed and the most common marketplace features such as the ability to search and filter products by different categories and dimensions. It will allow users to post different products and interact about the product with potential buyers. The application will be logically organized and have a smooth UX in terms of content creation and overall use. In the future, the feature of online payments could also be added if more and more people start using financial services. The benefits of this application will be in that there will only be a one-time software development cost and annual service support costs. Apart from that, the application will self-sustain and allow users to engage with it with minimum moderation from a third-party.

There is also a possibility to integrate this solution with a Telegram group and SMS, where every publication would also be shared on the Telegram group and sent through an SMS to the phone number of users.

More detailed technical specifications are presented below.

Option 2: Telegram Messenger group

This option does not include any software development. A group will be created on Telegram that would allow people to interact with each other. There would be a function of adding different products on Telegram for users. And a bot could be created that would sum up all the products to be offered on a given day. In addition, buyers could also request for products from another side of the border. This would provide both the suppliers and the buyers an information about the market dynamics and better plan their resources. This option is cost-effective since it involves minimum development expenses. It also consumes less traffic because there will only be text and photo information in the group without the need to load the whole website. The biggest disadvantage of this solution would be the limited capabilities of the group in terms of filtering and searching various products. There will also be no database of all products to run statistical reports and/or monitor the trade activities. A content manager/group admin will have to constantly monitor the group. In addition, a Telegram is prone to different risks such as the government blocking the messenger.

Option 3: SMS reach out

This option solely involves sending out text messages to all subscribers about what is needed and what will be offered on a particular day. It would either mean any of the subscribers can send an SMS to everyone, or subscribers send an SMS to a moderator who collects and distributes the information to everyone. Buyers and sellers would be added to a common database which will be used to distribute information about market days and offerings to everyone. This will involve working with telecoms from both countries to make the cost of text messages more affordable if the peer-to-peer method of information dissemination is preferred.

V. Risks and Mitigating Factors

This section offers a risks matrix that can also be grouped into different categories. Each risk will be coupled with a mitigating factor that the implementing team can use to avoid any major negative consequences:

Risks	Mitigating factors
Taliban will keep the control of Afghanistan and stop any trade activity.	Observe the political and security developments in the region and implement the solution when the cross-border trade resumes.
Internet connection will be a problem.	The product will need to be designed in a way that caches the major features of the app and uses minimum multimedia content. In addition, partnerships could be developed with local telecoms to make the product free from internet traffic consumption.
Technical literacy will be a barrier for the local population to start using the product.	The team will need to develop a very easy-to-use solution that would not involve knowledge of complex technologies. Minimalistic UI and UX will have to be developed.
Sellers and buyers will not use the mobile application.	A strong marketing and dissemination campaign needs to be implemented using various mechanisms and tools to garner the interest of stakeholders.

VI. Product Scope

This section aims to provide a more detailed picture of potential solutions to improve trade at the Tajik-Afghan border markets. The table below lays out the specifics of the three options suggested:

	Android mobile app	Telegram group	SMS reach out
Product features	User authentication via email or phone number; Feeds of recent and most viewed products; Filters by various categories; Possibility of commenting in the publication, adding it to favorites, and booking the product inside the app.	Users of Telegram Messenger; Group with all the past posts of products; A bot to summarize the supply and demand for the market day; Possibility of commenting about the product and starting a direct chat with the seller/buyer.	Mobile phone owners with an active SIM card; Send and receive text messages with info about the market.
Technical specifications	Custom-developed Android app with backend and database hosted in local servers to keep data accessible and cost-effective.	A Telegram bot developed to collect and disseminate messages. Tools to use: Python	SMS-distribution service of a telecom or an external service provider

	Tools to use: Android Studio, Kotlin, NodeJS, MySQL, Figma.		
OS requirements	Android OS 9.0 or later	Telegram	Mobile phone
Non-functional requirements	24/7 available; compliant with all security protocols; capacity to handle 1000 active users; human-centered User Interface.	24/7 available; privacy integrated in the Messenger; can handle 1000 active users.	Capacity to message 1000 users simultaneously; Word limit of 150 words.
Resource requirements	Software design and development costs; marketing costs.	Bot development costs; marketing costs.	Monthly service fee for SMS-distribution.
Support and maintenance	Server maintenance costs; Annual maintenance fee.	Group moderator's monthly salary.	Salary of a designated person to collect and send information.

As demonstrated in the table, a Telegram group, while providing information about the market, will have limited capabilities in terms of browsing and finding the necessary product. Similarly, the SMS reach out does not allow buyers and sellers to interact with the products and each other. The option of an Android mobile application has wider list of features and allows more flexibility to customize the solution to the peculiarities of the local market. It will require considerable resources to be developed but has a huge potential to grow into an e-commerce portal in the future with the option of adding online payments and cross-border delivery options (subject to overall border and security situation in the region).

VII. Execution plan

The process of development of a mobile application consists of several phases. Once the World Bank project team decides to develop the solution, a more technical ToR needs to be prepared for both internal and external audience. One of the key steps in this process is receiving the feedback of key stakeholders on the potential solution and its key features. While this document has included a summary of whether traders and businesspeople from the border regions desire a digital solution, a consultation also needs to be held with the government of GBAO and, if feasible, with the Afghan government.

Upon receiving the comments, a technical ToR will need to be released as a tender in line with the WBG procurement policies and rules. A company to develop the mobile application will need to be selected. This company will need to work in close cooperation with someone from the project team to ensure effective and smooth communication of goals and challenges throughout the process. There needs to be different stages of the development with the WB having biweekly meetings and calls to track the progress. Before rolling out the application for general use, there needs to be a test period where WB project team checks for any bugs or any other big issues.

The contract also needs to ensure that there will be a maintenance support for the duration of at least 12 months. This will be needed in the initial rollout and adoption stages. Either through the same tendered contract or directly, the WB team needs to ensure there is awareness about the product at border markets and amongst wider border populations. Targeted advertisements of different formats and marketing collaterals need to be developed and disseminated through various channels.

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