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AFGHANISTAN INFRASTRUCTURE AND REHABILITATION PROGRAM

KESHIM-FAIZABAD ROAD SOCIO-ECONOMIC POST-PROJECT FINAL REPORT

MAY 2011

This report is made possible by the generous support of the American people through the United States Agency for International Development (USAID). It was prepared by The Louis Berger Group, Inc. and Black & Veatch Special Projects Corporation Joint Venture for review by USAID.

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EXHIBITS

ABBREVIATIONS AND ACRONYMS

AFS	Afghanis (Currency)
ANSF	Afghan National Security Forces
B&V	Black and Veatch
CDO	Community Development Officer
CF	Coalition Forces
K-F	Keshim-Faizabad
GAO	Government Accounting Office
GIRoA	Government of the Islamic Republic of Afghanistan
Ha	Hectare
HH	Household
IR	Intermediate Result
IRP	Infrastructure and Rehabilitation Program
K-F Road	Keshim-Faizabad Road
LBG	The Louis Berger Group, Inc.
M&E	Monitoring and Evaluation
NGO	Non-governmental Organization
O&M	Operations and Maintenance
Obs	Observations
OMB	Office of Management and Budget
PKR	Pakistani Rupee
PMP	Performance Management Plan
REFS	Rehabilitation of Economic Facilities and Services
SO	Strategic Objective
SSR	Southern Strategy Road
STATA	Data Analysis and Statistical Software
TO	Task Order
USD	United States Dollars
VOC	Vehicle Operator Cost
ZOI	Zone of Influence

EXECUTIVE SUMMARY

USAID Afghanistan Mission and the Afghanistan Infrastructure Rehabilitation Program

The United States Agency for International Development (USAID) implements a wide range of programs that support the Afghan people in obtaining the capacity and resources to successfully manage their future development. As a key part of its efforts, USAID funds the Afghanistan Infrastructure and Rehabilitation Program (IRP), a five-year program that commenced in the summer of 2006. IRP focuses on rehabilitating, extending, and maintaining Afghanistan's road network and increasing and maintaining power generation capacity. To ensure sustainability, IRP also funds several significant institutional reform and capacity building projects.

Under IRP, three roads are being reconstructed: Keshim-Faizabad Road, Gardez-Khost, and the Southern Strategy Road. The Keshim-Faizabad (K-F) Road will provide those living and working within the ZOI with an all-weather paved asphalt road. As of November 2010 the road had been completed and fully paved. The road is approximately 103 km long and its alignment runs from Keshim to Faizabad. For the purpose of this study, the Zone of Influence (ZOI) has been set at 15 km on either side of the center line of the road. The population within the ZOI is estimated to be 655,728 people.

USAID M&E Framework

This study is prepared as part of USAID's overall program evaluation process, which is intended to provide USAID management in the field and in Washington, DC with the necessary information to maintain a results-oriented approach to program strategies. It also serves USAID in its reporting obligations to internal and external stakeholders, including senior management, GAO, and the United States Congress.

This study is but one part of IRP's broader reporting requirements to USAID. IRP also employs a comprehensive monitoring and evaluation framework that is outlined in its Performance Management Plan (PMP). The IRP PMP has 26 indicators for the transport sector. Twelve of these indicators are routinely reported in the Semi-Annual Monitoring Reports. The remaining fourteen indicators are outcome indicators intended to capture broader social and economic project impacts of the transport project interventions on the populations they serve. These involve types of data that require additional field research and data collection using an array of quantitative and qualitative research instruments.

Although the execution of this study was slightly late due to reasons discussed later in this report, this Post-Project analysis is intended to serve as a functional follow-up study of conditions along the K-F Road. The indicators addressed in this report are outcome indicators that are intended to measure progress in achieving USAID's Strategic Objectives 1 and 3 for Afghanistan:

- SO1: Thriving economy led by the private sector
- SO3: Better educated and healthier population

Evaluation Design and Approach

The IRP Monitoring & Evaluation (M&E) Study Team designed an evaluation strategy to measure and report on fourteen transport sector outcome indicators. Each of the fourteen indicators used in this study is meant to illustrate the change in some outcome that is thought to be impacted, in part, by rehabilitation of the K-F Road, and be indicative of achieving one of USAID Afghanistan's intermediate results. A central issue in evaluation design is that of correlation versus causality. It is impossible to identify causality with certainty between program interventions and the outcome indicators. This evaluation is designed to maximize the Study Team's ability to separate intervening factors from the impacts caused by road rehabilitation, while simultaneously acknowledging the difficulty of doing so completely.

There were a number of critical constraints that greatly limited the Study Team's options for evaluation designs that establish causal linkages. In some cases the Study Team overcame these constraints by technical innovation while in other cases a less rigorous approach had to be chosen. The three most important constraints are detailed below.

- *Constraints in evaluation of infrastructure:* Large-scale infrastructure projects are not good candidates for randomized program interventions, which are the most effective way to establish more rigorous causal linkages.

- *Constraints of evaluation in Afghanistan:* Political insecurity in the region was not a factor in evaluating the K-F Road; however, the geography and climate did pose some obstacles which required some field procedures to be adapted. Lack of demographic and household identification data complicated the creation of a good sampling frame, which is vital for achieving a representative sample.

- *Constraints because of approval delays:* Delays in both the approval of IRP's PMP and the allocation of funds for its implementation meant that the "baseline" study was conducted some 20-22 months after project commencement. The Post-Project Study was conducted about one year after the baseline in order to control seasonality. Thus, some project impacts had already begun by the time this first study was conducted.

A pre-post evaluation design, although limited in its ability to make causal inferences, was chosen to measure the fourteen indicators for the K-F Road. The primary limitation of this design is the difficulty in distinguishing between changes that are the result of road rehabilitation and those that would have happened regardless of the road's construction. Qualitative study methods (e.g. focus groups) and data from secondary sources were used to help make these distinctions, but inferring project impact should still be done with caution.

The Study Team devised nine survey instruments in order to collect the data necessary to measure fourteen indicators including a household survey, business and market overview surveys, village elder surveys and various vehicle and transportations surveys. These instruments were field-tested for the "baseline" study in the Keshim District September 24 – 28, 2010. Moderate changes to the instruments were made in October, 2010 for the Post-Project Study; however, to preserve causality at its best, the Study Team did not change the surveys to a degree that would encourage people to answer differently and thus bias the data. In some cases an indicator could be measured using more than one instrument. These were supplemented by a series of key informant interviews (Faizabad mayor and Keshim mayors; and three district agricultural department officials) and focus groups (three women's focus groups – two from Faizabad urban and rural dwellings, one from Keshim urban dwellings; two men's focus groups – Faizabad urban and rural dwellings; and two businessmen groups in Faizabad and Keshim). In the Post-Project Study, the Study Team added four additional focus groups to the scope of work. These took place with different vehicle operators: personal vehicle drivers in Keshim; bus drivers and officials from the transport department in Faizabad; freight transport operators and agency officials in Faizabad; and, Keshim taxi drivers and owners.

Due to some of the constraints listed above, sampling in Afghanistan presents a particular challenge. This is part due to the fact that the most recent census is over thirty years old. The "best" sampling strategy is not a straightforward choice but one that appropriately values tradeoffs. These tradeoffs are discussed in the following sections:

- Representativeness and comparability
- Costs and statistical power
- Rigor and ease of implementation

The Study Team worked hard to make every reasonable effort to achieve representative samples in spite of the many limitations and challenges. For example, in order to overcome the challenge of unreliable census data, every residential dwelling in the K-F Road's ZOI was tagged and counted using satellite imagery and its geographic location was catalogued. In total, 54,644 houses were identified within the 15 kilometers ZOI of the K-F Road. This has yielded arguably some of the most accurate demographic data for any region in Afghanistan.

Study Findings

A rehabilitated K-F Road provides a smoother roadway designed for travel at higher speeds. Vehicle operators can now travel more comfortably with less vehicle wear at increased speeds. A more direct impact of the road, traffic volume, demonstrated dramatic increases from pre-construction to post-rehabilitation. In addition to increased traffic, the time it takes to travel using the K-F Road decreased substantially. Prior to the K-F Road's construction in 2007, it took buses eight hours and taxis six hours to travel the length of the K-F Road. Now, it takes the average passenger 1.5 hours to travel the length of the road. As travel times and vehicle operating costs decreased post-rehabilitation, the overall cost of providing passenger transport services also reduced. Furthermore, the reconstructed K-F Road creates opportunities for farming communities to transport their products to markets more efficiently and at reduced cost. As a result, increased diversity of consumer goods is available in the markets while lowering the costs to producers.

Exhibit 1 presents the indicator values changes from the Mid-Point Study and in the Post-Project Study. Some of the indicators reveal strong effects within months of the road's completion, while others are more difficult to measure and take time to materialize. In some cases, results were unexpected and are often influenced by other factors that are not directly attributable to the road. Further discussion regarding changes correlated with the road's rehabilitation can be found in the individual sections on each indicator (Section 4.2).

The following effects of the K-F Road post-rehabilitation should be highlighted:

- Car traffic volume increased by 22 fold and two-axle truck traffic increased by 57 percent
- Travel times for the average passenger decreased by 75-80 percent
- Passenger fares decreased by 59 percent
- Freight costs decreased by 36 percent and average freight loads increased from 16 to 19 tons
- Daily freight volume increased by 24 percent
- 12 percent more people are making trips to health facilities
- Greater convergence in food commodities sold in Keshim and Faizabad markets

As substantial as these changes are, they are most likely understated due to the fact that Mid-Point Study data was collected when fifty percent of the road's construction was completed. Many of these indicators, especially traffic volume and freight tonnage, will continue to grow now that the road is fully constructed. Furthermore, over time, farmers should become increasingly aware of the benefits of accessing main markets and this should extend the distance they are willing to travel to sell their goods. While reduced travel times bring numerous benefits, such a dramatic rise in speeds in a heavily rural area has meant a rise in traffic accidents, a reality that was recounted in several conversations with villagers. That being said, some villagers conceded that it is the responsibility of the people using the road to learn how to use the road in a safe manner. Road safety programs can be developed at the community level in order to maintain the benefit of faster travel speeds and lower travel times.

Exhibit 1: Summary of the K-F Road Study Indicator Values

Indicator	Mid-Point Indicator Value	Post-Project Indicator Value	Unit*	Indicator Definition
Outcome Indicators as measured in Mid-Point and Post-Project Data Collection (November/December 2009, April/May/June 2009, November/December 2010)				
1. Cost of Food Staples	24.77	26.68	US Dollars	Mean Price for Bundle of Food Staples
2. Markets Where Goods Sold	7 (Crops) 10 (Livestock)	5 (Crops) 10 (Livestock)	Kilometers	Median Household Distance Traveled to Sell Crops and Livestock
3. Number of Businesses	3,212	2,299	Number	Total Number of Businesses in Keshim, Faizabad, and along K-F Road
4. Monthly Sales by Businesses	4,492	5,277	US Dollars	Median Business Sales (Last 6 Months)
5. Household Incomes	371	1,073	US Dollars	Median Total Household Income
6. Vehicle Operating Costs	783	552	US Dollars	Previous Month's Median Vehicle Operating Costs
7. Travel Times	234	98	Minutes	Mean Passenger Travel Time between Keshim and Faizabad
8. Passenger Fare Costs	7.95	3.27	US Dollars	Mean Passenger Fare Costs between Keshim and Faizabad
9. Cost of Freight Transport	0.27	0.17	US Dollars	Mean Cost Per Ton Per Kilometer
10. Freight Tonnage	2540	3159	Tons	Total Daily Freight Tonnage Transported
11. Cost of Informal Payments	2.32	1.47	US Dollars	Median Cost of Informal Payments per trip between Keshim and Faizabad
12. Travel Time to Health Clinics	62	95	Minutes	Mean Travel Time to Health Clinics for Minors
13. Frequency of Visits to Health Clinics	6	6	Number	Median Number of Household Visits to Health Clinics Per Year
14. Rates of School Attendance	83	82	Percent	Overall Percentage of School-age Children Attending School

* All US Dollars Amounts are estimated using inflation-adjusted 2007 exchange rates.

Overall, the rehabilitation of the Keshim-Faizabad Road confirms that road construction projects yield economic growth through increased mobility, reduction in travel costs, and improved connectivity. However, a road's benefits will endure only so long as the road is sustainable. Infrastructure's economic impact is attributable not only to quantity of the infrastructure stock but also its quality. There appears to be a strong memory of roads where maintenance was neglected and the benefits were thus short-lived. Urban dwellers in Keshim mentioned the need for the government to levy road user charges, which could finance road maintenance. Thus, without the government working to establish a road maintenance program, the benefits of the K-F Road may be short-lived. An effective maintenance program built into road programs from the outset will ensure that the substantial benefits that roads bring will endure long into the future.

1. USAID AFGHANISTAN MISSION

Reliable infrastructure and energy networks are essential for economic growth. Viable and secure roads are already paving the way to deliver farmers' products to market, providing access to health and education services, and facilitating regional trade. Through rehabilitation of more than 1,677 km of roads in Afghanistan, The United States Agency for International Development (USAID) has increased mobility and strengthened trade and security. Approximately 80 percent of Afghans now live within 50 km of the Ring Road.[1] Afghanistan has made good progress both politically and economically since the Taliban was ousted. However, armed conflict continues and, while predominantly in the southern and eastern provinces, no part of the country is immune to the effects of war. Afghanistan remains fragile, insecure, and poor. The USAID/Afghanistan 2005-2010 Strategic Plan[2] focuses on 3 Strategic Objectives (SO) aimed at addressing these problems:

- SO1: A thriving economy led by the private sector
- SO2: A democratic government with broad citizen participation
- SO3: A better educated and healthier population

USAID funds a variety of programs and projects to support these objectives. These include capacity building in government ministries, construction of power plants, schools, clinics, a new national electric power system, and an expanded road network.

The intended benefits of infrastructure projects are both short and long term. In the short run, benefits largely come from short-term employment generated by these projects as well as opportunities for local firms to improve their skills and thus strengthening local contractors' capacities. Outcome and impact measures should be drawn from these activities while the evaluation should be in the context of these non-infrastructure goals.[3]

1.1 AFGHANISTAN INFRASTRUCTURE AND REHABILITATION PROGRAM (IRP)

The Afghanistan Infrastructure and Rehabilitation Program (IRP)[4] is a five-year USAID-sponsored program that focuses on rehabilitating and extending roads, power generation capacity, and power transmission networks across Afghanistan. The program commenced in the summer of 2006 and is implemented by a Joint Venture between The Louis Berger Group, Inc. (LBG) and Black and Veatch Special Projects Corp. (B&V).

IRP's mandate, in supporting USAID's Strategic Objectives, is to increase:

- The availability of secure, reliable and affordable supplies of power and energy; and
- The nation's ability to provide safe and reliable transport systems allowing cost efficient and timely movement of goods and people.

To increase capacity and ensure sustainability, IRP also funds institutional reform and capacity building projects. Some of the key projects that IRP oversees are:

[1] USAID funded the construction of 389 km of Kabul-Kandahar Highway and 246 km of Kandahar-Herat Highway on the Ring Road.
[2] USAID/Afghanistan Strategic Plan, May 2005.
[3] http://pdf.usaid.gov/pdf_docs/PNADG193.pdf. Accessed on June 9, 2010.
[4] IRP marks the next phase in infrastructure reconstruction and rehabilitation in Afghanistan. Its principal precursor was the USAID Rehabilitation of Economic Facilities and Services (REFS) Program. REFS was an emergency infrastructure program focusing on the immediate improvement and rebuilding of basic infrastructure required to allow the country to function as a nation immediately following Afghanistan's liberation from the Taliban.

- Reconstruction of the Gardez-Khost Road
- Reconstruction of the Keshim-Faizabad Road
- Reconstruction of the Southern Strategy Road
- Management of Operations and Maintenance for 1,875 km of regional, national, and provincial roads
- Design of the Ghazni-Gardez Road, Bamyan-Dushi Road, Strategic Provincial Roads in the South and the East, and several bridges
- Construction of the 105 MW Tarakhil Power Plant
- Technical assistance in obtaining imported power from Uzbekistan, Tajikistan, and Turkmenistan

To ensure long-term sustainability, IRP has a specific "capacity building" component which requires IRP to employ Afghans and Afghan sub-contractors, where possible, to assist them in developing technical and professional skills. Additionally, IRP is working with ministry personnel and other government employees to create a foundation for institutions to effectively and independently manage Afghanistan's infrastructure.

1.2 IRP ROAD REHABILITATION PROGRAM

Thirty years of conflict virtually destroyed the transport infrastructure of Afghanistan, and many Afghans lack the necessary skills or training to build, operate, and maintain the national infrastructure. IRP's Road Rehabilitation program is focused on extending the country's road network. IRP is accomplishing this through the design, reconstruction, and rehabilitation of several roads.

IRP's reconstruction program includes three roads: Keshim-Faizabad; Gardez-Khost; and the completed the Southern Strategy Road. USAID selects road projects based on their ability to achieve the Afghan Mission's Strategic Objectives. These objectives include the projects' role in meeting infrastructure needs to increase physical access to markets, improve import and export of goods, enhance access to education and health facilities, improve security, and foster better connectivity between districts.

As a part of its capacity building efforts through IRP and in recognizing the need for maintenance to preserve the roads it had built, USAID established in November 2007 the Road Operations and Maintenance (O&M) and Capacity Building Program (TO-14), which created the Road Management Unit (RMU) to manage the maintenance of these rehabilitated roads. To strengthen local capacity, the RMU has conducted road maintenance through Afghan private contractors using the innovative performance-based contracting approach.

As a part of this program, TO-14 is also working closely with the many GIRoA ministries that are managing the various components of the transportation sector. GIRoA suffers from endemic corruption[5] and poor governance, and the GIRoA staff generally lack the technical skills necessary to carry out their duties. The TO-14 program is working to strengthen these skill sets to improve the GIRoA's overall management and administration of transportation infrastructure.

Building on TO-14's capacity building efforts, the Initial Construction Works of the Bamyan to Dushi Road (TO-26) is principally managed by IRP-employed Afghan engineers, and construction will largely be completed by Afghan sub-contractors. In addition to the oversight and feedback from IRP engineers to sub-contractors, TO-26 also has a community outreach component and is developing projects for the road's zone of influence (ZOI).[6] The purpose is to develop the local population's skill-set, thereby creating future employment opportunities once the full road reconstruction project starts.

[5] In 2010, Transparency International Corruption Perception Index rated Afghanistan 176 out of 178 countries, the third most corrupt country in the world. http://www.transparency.org/policy_research/surveys_indices/cpi/2010/results. Accessed 11 April 2011.

[6] This work has been in coordination with the Aga Khan Foundation thus far.

1.3 KESHIM-FAIZABAD ROAD

The Keshim to Faizabad Road is a 103 km road in the Hindu Kush Mountains of northern Afghanistan and predominantly lies along the left bank of the Kokcha River and the right bank of the Keshim River in Badakhshan Province, connecting the district center of Keshim to the provincial capital city of Faizabad. Approximately 30 villages lie along the road's ZOI. The ZOI is defined as 15 km either side of the center line of the road. The population for the ZOI is estimated to be 655,728 people.[7] Upon completion, the road provides those living and working within the ZOI with a paved asphalt all-weather road enabling reliable year-round transport.

Background

Over the years, frequent floods and mudslides mostly due to regional earthquakes, localized rain, and snow events have contributed greatly to the deterioration of the road. By 2001, the road was in extreme poor conditions consisting of gravel riding surface, failed bridges, and poorly maintained drainage structures. Substantial improvements were needed to meet the requirements set forth in the Ministry of Public Works Interim Road and Highway Standards adopted in March 2005.

In 2006, USAID took steps to fulfill the link strategy for Badakhshan Province in far northeastern Afghanistan. Through a grant to the United Nations Office for Project Services (UNOPS), LBG prepared the construction design for the construction of a new, two-lane, all weather asphalt-concrete road. In June 2007, LBG began construction of the K-F Road. Construction activities required building seven bridges and more than 600 culverts. Due to the road's poor condition coupled with the physical challenges posed by narrow canyons and a very mountainous terrain, extensive rock blasting was also required. The road was successfully completed in November 2010. There is a remaining bridge, which was washed out in a flood that will be completed in 2011/2012.

Historically, the road was part of the ancient Silk Route from the Mediterranean Sea to the Far East. Today, the road is seen as a vital piece of the GIRoA's plans to construct a two-lane road connecting to the international border with China. The K-F Road will link Afghanistan's most remote city, Faizabad, to Keshim and points south. For example, a bus trip between Kabul and Faizabad used to take at least two days and cost 40 USD, now the trip takes less than 12 hours and the one-way ticket price is 14 USD.[8] The connectivity created by the K-F Road should lead to increased economic opportunities for those living in the K-F ZOI and beyond.

[7] At the time of the Mid-Point Study, the ZOI population was estimated at 624,373. This is based on an aerial household census conducted using satellite images from 2004, which counted 54,644 housing compounds. Data on the average number of people living in a housing compound and the mean number of households per compound was used from our sample of 467 household surveys to determine an estimate of the ZOI's population. This number is much higher than the 265,381 beneficiaries that IRP projected for its 2011 target, based on data from Afghanistan's Central Statistic Office.

[8] https://www.irp-af.com/?pname=open&f=doc100326_newspik072_web250px.jpg&id=326&type=html Accessed 10 July 2010.

II. USAID MONITORING AND EVALUATION FRAMEWORK[9]

USAID's monitoring and evaluation process is a systematic, analytical effort that is planned and conducted in response to specific management questions about the performance of USAID-funded development programs or activities. Effective evaluations are geared towards outcome results that, where applicable, address the projects relevance, effectiveness, impacts, and sustainability. Evaluations provide USAID's management in the field and in Washington, DC with the necessary information to maintain a results-oriented approach to program strategies.

USAID expects that a well-structured evaluation process will provide its operating units with data on achieved project results (via monitoring), as well as how and why they were achieved, and what can be done to further improve performance. USAID program evaluations can be carried out by measuring progress in any of the following: activities, intermediate results, or strategic objectives, depending on the performance issue.

USAID Afghanistan requires that, wherever possible, Afghans are employed to conduct opinion surveys, focus groups, and evaluation works in general.[10] Keeping with USAID's mandate, IRP employed MCPA/Green Step, an Afghan joint venture firm to carry out the data collection for this study and directly employed a small team of Afghans to conduct data.

2.1 USAID'S REPORTING REQUIREMENTS

Contractor reporting that is done well will help USAID in its own reporting efforts which serve as the basis for broader US government oversight. According to federal law, USAID must inform internal and external stakeholders, including senior management, OMB, and the United States Congress. The following is a list of policies that specify its current reporting requirements:[11]

- FY 2009 Foreign Operations Performance Report and FY 2011 Performance Plan – submitted in conjunction with the FY 2011 Foreign Operations Congressional Budget Justification.
- This Joint Summary of Performance Financial Information includes the Agency Financial Report (AFR) and the Annual Performance Report and Annual Performance Plan (APR/APP).[12] USAID's Agency Financial Report (AFR) for FY 2009 provides financial and related information to help Congress, the President, and the public assess the Agency's performance relative to its mission and stewardship of financial resources.
- Department of State and USAID Strategic Plan, FY 2007-2012.
- Government Accountability Office (GAO) High-Risk Improvement Plans.[13]

In 2005, the GAO recommended that USAID's Administrator do the following:

- Establish a performance management plan that complies with USAID directives

[9] TIPS, Performance Monitoring and Evaluation, USAID Center for Development Information and Evaluation and in the Role of Evaluation in USAID. 1997.
[10] http://pdf.usaid.gov/pdf_docs/PNADG193.pdf. Accessed on 11 April 2010.
[11] http://www.usaid.gov/policy/budget/. Accessed on 11 April 2011.
[12] These reports fulfill the Agency's compliance with the Government Performance and Results Act reporting requirements.
[13] USAID must make available all documentation for the GAO to conduct their annual audit.

- Clearly stipulate in all future reconstruction contracts that contractors are to develop performance management plans specific to the work they are conducting
- Completely communicate the performance information from the plans to executive decision makers in Kabul and Washington, DC

Thus, the GAO's assessment underlined the need for a stronger monitoring and evaluation component to be a part of USAID's efforts.

2.2 IRP REPORTING

IRP reporting requirements are deliverables that are specified either to the Indefinite Quantity Contract (IQC) or specific Task Orders. The wide range of reports enables both IRP and USAID to monitor works and, if necessary, adjust projects to maintain a results-oriented approach.

2.2.1 GENERAL REPORTING REQUIREMENTS

IRP is required to provide a number of reports to ensure that USAID staff both in the field and USAID/DC is well-informed about the performance of USAID programs and strategies. The IQC states that the following reports are required deliverables:

- Needs Assessment Report and Project Work Plan
- Performance Management Plan (PMP)
- Monitoring and Evaluation Reports for Energy and Transport Sector Task Orders
- Technical reports according to schedules shown in the approved Work Plan
- Daily, monthly, and quarterly program status reports
- Task order closeout reports
- Quarterly update information into the USAID/Afghanistan geo-base system
- Task order budget updates

These reports will inform USAID in the field and Washington of the program's use of agency resources, and whether the program is efficiently using USAID resources.

2.2.2 THE PERFORMANCE MANAGEMENT PLAN (PMP)

While the preponderance of IRP reporting covers inputs and some outputs, IRP also employs a more comprehensive monitoring and evaluation framework that is outlined in its Performance Management Plan (PMP). IRP's PMP seeks to measure a broader set of outputs and several key outcomes. The PMP is an USAID management tool that specifies indicators, provides detailed definitions for each performance indicator, and sets targets for indicators allowing program managers to track a project's performance versus its indicator targets from inception to completion. Performance indicators are measures of inputs, processes, outputs, outcomes, and impacts for development projects, programs, or strategies.[14] IRP's PMP has 26 indicators for the transport sector. Twelve of these indicators are routinely reported in the Semi-Annual Monitoring Reports and are a mix of output and outcome indicators. The data for the semi-annual report largely consists of project records and operations data (e.g., the number of Afghans trained) and provides USAID with regular updates on the program's outputs.

The remaining fourteen indicators are outcome indicators intended to capture broader social and economic project impacts of transport project interventions on the populations they serve. This type of analysis requires data obtained by conducting additional field research and data collection that uses a wide array of quantitative and qualitative research instruments.

[14] Source: http://lnweb90.worldbank.org/oed/oeddoclib.nsf/b57456d58aba40e585256ad400736404/a5efbb5d776b67d285256b1e0079c9a3/$FILE/MandE_tools_methods_approaches.pdf. Accessed 11 April 2011.

The Study Team selected the fourteen indicators in order to measure progress within USAID's five Intermediate Results (IRs). Intermediate Results must achieve target values for a project to successfully meet USAID's Strategic Objectives. If a confounding factor is identified in the M&E process, USAID and the project implementer can make adjustments thus, putting the project on track. Exhibit 2 lists the fourteen indicators under the appropriate IRs and the primary data sources that will be used in measuring them.

Exhibit 2: Transport Indicators for M&E Activities

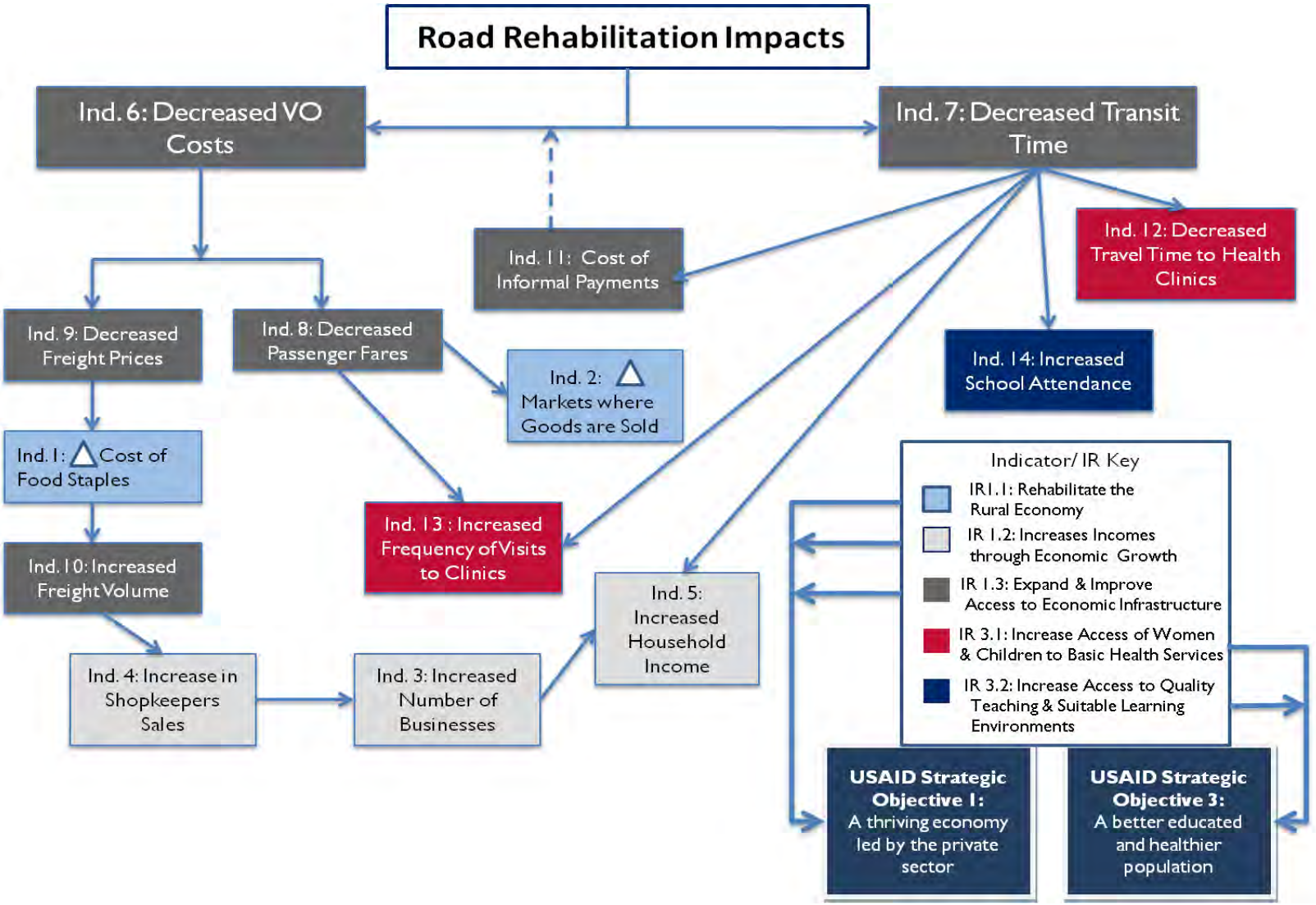
Transport			
Indicator	**Type of Indicator**	**Data Source**	**Reporting Frequency**
IR 1.1: Rehabilitate the Rural Economy			
Cost of food staples	Outcome	Business surveys	Pre- and Post-Project
Markets where goods sold	Outcome	Household surveys	Pre- and Post-Project
IR 1.2: Increase Incomes Through Economic Growth			
Number of businesses	Outcome	Business surveys	Pre- and Post-Project
Shopkeeper monthly sales	Outcome	Business surveys	Pre- and Post-Project
Household income	Outcome	Household surveys	Pre- and Post-Project
IR 1.3: Expand and Improve Access to Economic Infrastructure			
Travel times	Outcome	Driver/passenger surveys	Pre- and Post-Project
Vehicle operator costs	Outcome	Driver/passenger surveys	Pre- and Post-Project
Passenger fare costs	Outcome	Driver/passenger surveys	Pre- and Post-Project
Cost of freight transport	Outcome	Freight company surveys	Pre- and Post-Project
Volume of freight	Outcome	Freight company surveys	Pre- and Post-Project
Cost of informal payments for road use	Outcome	Driver/passenger surveys	Pre- and Post-Project
IR 3.1: Increase Access of Women and Children to Basic Health Services			
Travel time to health clinics	Outcome	Household surveys	Pre- and Post-Project
Frequency of visits to health clinics	Outcome	Household surveys	Pre- and Post-Project
IR 3.2: Increase Access to Quality Teaching and Suitable Learning Environments			
Rates of school attendance	Outcome	Household surveys	Pre- and Post-Project

This report will measure the above indicators at the project's mid-point (when 50 percent of the road is paved) and post-project (after the road's rehabilitation is completed). This will not only measure the impacts of the K-F Road, but also the level of success in attaining USAID's Strategic Objectives 1 and 3 for Afghanistan:

- SO1: Thriving economy led by the private sector
- SO3: Better educated and healthier population

Exhibit 3 is the results framework of the anticipated outcomes of a rehabilitated K-F Road. Strategic Objective 1 (SO1) is geared toward advancing the political economy of Afghanistan to develop a sound foundation so a thriving private sector can emerge and sustain the Afghan people. SO3 focuses on increasing access to health services for minority populations (women and children) and increasing the quality of learning environments to achieve a better educated and healthier population.

Exhibit 3: Graphical Representation of Results Framework



III. EVALUATION DESIGN AND APPROACH

The IRP M&E Study Team designed an evaluation strategy to measure and report on these fourteen transport sector outcome indicators. This includes the targeting, timing and scope of data collection, the types of instruments to be used and the sampling strategy employed in implementation. The approach and methods chosen for carrying out an evaluation design have critical implications on how important questions will be answered.

Evaluation designs are determined by the choice of methods used to identify a comparison/control group (a group that does not receive the intervention or participates in the project) with a target group. An estimate of impact can then be derived by comparing the levels of well-being between comparison/control groups and the target group (those who do receive the intervention). Determining which evaluation design to implement involves varying degrees in feasibility, costs, clarity and validity of results, and selection bias.

Because road projects are full-coverage interventions in which an entire population participates and there is no scope for a control group, the IRP M&E Study Team decided to implement a quasi-experimental design, known as *reflexive comparison*. In a reflexive comparison design, the counterfactual is constructed on the basis of the participants prior to the implementation of the program. Thus, program participants are compared to themselves before and after the intervention and thus function as both treatment and comparison group. There is, however, a major drawback in using this evaluation design (discussed further below): the situation of the participants before and after the intervention may change due to a myriad of reasons independent of the program. Drawbacks and ways to mitigate are discussed further in Section 3.2.

Each of the fourteen indicators used in this study is meant to illustrate the change in some outcome that is thought to be impacted, in part, by rehabilitation of the K-F Road, and be indicative of achieving one of USAID Afghanistan's Intermediate Results. The theoretical impacts of road rehabilitation and their causal linkages with the fourteen indicators are diagrammed in Exhibit 3. For example, the price of food staples (Indicator 1) is affected by transport costs. When the K-F Road is improved, the cost of transporting a ton of rice from Keshim to Faizabad should decrease, which should then be reflected in the cost of rice and overall food staples. Therefore, a decrease in the price of food staples can be an indicator that the road indeed achieved lower transport costs. Lower food costs were chosen to be indicative of Intermediate Result 1.1, Rehabilitation of the Rural Economy. However, there are many other factors that drive the price of food staples such as inflation rates, the quality of the harvest that year, the price of farm inputs, and food insecurity in the region (see more in section on Indicator 1: Cost of Food Staples).

Transport costs along the K-F Road are just one of many factors that can cause a change in food staple prices. It is impossible to identify causality with certainty between the program intervention and the outcome indicators. However, many of the intervening causes can be measured, and their effect on the indicators may be separable. This evaluation is designed to maximize our ability to separate intervening factors from the impacts caused by road rehabilitation, while simultaneously acknowledging the difficulty of doing so completely.

3.1 DESIGN CONSTRAINTS

There were a number of constraints that limited the Study Team's options for evaluation designs to establish causal linkages. In some cases, the Study Team overcame these constraints by technical innovation while in other cases a less rigorous approach had to be chosen. The three most important constraints are detailed below.

3.1.1 CONSTRAINTS IN EVALUATION OF INFRASTRUCTURE

Evaluations that establish more rigorous causal linkages often rely on randomizing or varying the intervention in a way that withholds the program from some people and not others, which allows study of the differences between the "treatment" and "control" groups. Infrastructure programs are not well suited for this approach. An infrastructure project serves everyone in the area where it is constructed and cannot be withheld from some individuals while granting access to others in the same area. This is also true since randomized controlled trials require that selection into both groups (treatment and control) is done in an unbiased manner, or "random." The alternative to varying the treatment within a given area is to randomize the placement or timing of the intervention. However, roads and other infrastructure projects are chosen to go in certain locations for specific reasons; it is not feasible to leave such a fundamental choice to random chance. Therefore, it is difficult to establish a plausible counterfactual for infrastructure projects. Recently, a few macro-level studies that exploit some quasi-random determinants of infrastructure placement or use instrumental variables have been carried out that make compelling estimates of causal impact.[15] However, rehabilitating the road from Keshim to Faizabad, a project that affects a large geographic area and has a pre-determined placement in a unique region, cannot be evaluated through experimental or quasi-experimental type evaluation designs.

3.1.2 CONSTRAINTS OF EVALUATION IN AFGHANISTAN

Implementing an evaluation in Afghanistan, a conflict-affected country, faces additional severe constraints. Two of the most important constraints in conducting a rigorous evaluation are inadequate demographic and household identification data and security conditions.

To conduct a survey that achieves a representative sample, the first choice in sampling strategies is a lottery type random selection. This requires a complete list of the units (whether households, businesses, villages, or vehicles), oftentimes from an official source (such as census data at the provincial or governmental level) from which to draw the selections. While such data are commonly available in more economically developed countries, this is not the case in Afghanistan. Both rely on information about the underlying population and its organization into larger units. Contemporary studies done in Afghanistan are usually left to make best-effort estimates of relative population sizes of villages and attempt to make an exhaustive inventory of them, relying on local estimates and scoping exercises that make qualitative judgments in the field. However, these are thought to result in a number of biases, most of which result in underrepresentation of poor, rural and minority populations.

3.1.3 CONSTRAINTS BECAUSE OF APPROVAL DELAYS

The Study Team used the pre-project situation in the ZOI as the most plausible and feasible counterfactual to compare with the post-project results (more on this research design below). To implement this design, a baseline survey prior to the start of the construction of the road or shortly thereafter was necessary, as outlined in the PMP submitted to USAID for approval in August 2007.

Construction of the K-F Road commenced in November 2007. USAID provided comments to the Draft PMP in October 2008, and a revised PMP was approved by USAID in March 2009. In conversations with USAID, IRP underscored the importance of expeditiously conducting a true "baseline study" for the K-F Road[16] and sought to have this done in the summer 2009. USAID requested that IRP submit a budget for approval covering all PMP implementation activities through the remainder of the IQC contract, August 2011. This budget was submitted in May 2009 to USAID, but USAID approval was delayed. Finally, in

[15] Donaldson, David (2008). "Railroads and the Raj: the economic impact of transportation infrastructure." LSE Working Paper; Michaels, Guy (2008). "The Effect of Trade on the Demand for Skill - Evidence from the Interstate Highway System." *Review of Economics and Statistics*, 90(4), November; Keller, Wolfgang and Shue. Carol "Institutions, Technology, and Trade." University of Colorado Working Paper.

[16] IRP attempted to conduct a Baseline Study on the K-F in Late 2007/ Early 2008. However, lack of funding seriously hampered data collection and reliability.

September 2009 clear direction was given to proceed with data collection with approval to use TO-1 funds. At that time, the study plan was revised in order to accelerate the lead time needed so that data collection could be completed before winter. Staff and resources were immediately deployed, a Survey Director was hired and mobilized to Afghanistan in October, a subcontract was awarded in November and data collection began in December.

For the Post-Project Study, a LBG Economist from the Washington, DC office was sent to the field upon USAID country approval on October 15, 2010. After enumerator training and further piloting of surveys, field work in Badakhshan started on November 13, 2010. Enumeration completed on December 5, 2010.

Despite the delays in the baseline/mid-point data collection phase of the Mid-Point Study, the Post-Project Study was conducted in a similar time frame. This allowed our team to conduct the Post-Project Study at the same time as the Mid-Point Study, smoothing out issues of seasonal patterns when measuring outcomes. That being said, the delay in implementing the baseline is a significant constraint noted here for two reasons. First, it limits the scope of impacts the study can detect. Post-project data will be collected after the road's completion; however, with the exception of some data IRP collected in 2007 that relates to a few indicators, the earliest data available for comparison for most indicators was collected in November/December 2009 and April/May/June 2010 when half of the road had already received its first layer of asphalt, the time at which a road begins to have an impact due to reduced travel times and vehicle operator costs.

The quantitative survey effort will largely miss impacts that took place before December 2009, so it is best suited to measure outcomes occurring after the mid-point. Indeed, preliminary field research conducted in September 2009 provided substantial anecdotal evidence that the road's effects were already being felt in such areas as vehicle ownership, market access, and hospital access. This means that comparisons between the Mid-Point and Post-Project data will significantly underestimate the road's impact. To mitigate the effects of this constraint, the Study Team is using qualitative techniques, retrospective questions and secondary data source to gauge general impacts that occurred before the mid-point study. While this will help to provide a fuller picture, the opportunity for establishing values for each indicator prior to the construction start date has been lost.

Another constraint in the Mid-Point Study related to approval delays is that the enumerators were not able to collect data from all the sampling points before the onset of winter which necessitated the postponement of data collection for one-third of the sampling points until April/May/June 2010. This split in data collection times for the Mid-Point Study now makes this impossible. However, in anticipation of this possibility, the survey instruments were designed with some redundancy in the event that post-project data collection does not take place at the same time of year. That is, a few key questions were repeated with multiple timeframes. For example, shopkeepers were asked to report their revenues during the most recent winter, during the most recent summer, and during the last month.

3.2 EVALUATION DESIGN: PRE-POST METHOD AND QUALITATIVE STUDY TO INFER IMPACT

A pre-post evaluation design, although quite limited in its ability to make causal inferences, was used to measure the fourteen indicators for the K-F Road. For reasons discussed earlier, more rigorous evaluation designs were not possible. The primary limitation of this design is the difficulty in distinguishing between changes that are the result of road rehabilitation and those that would have happened regardless. Qualitative study methods and data from secondary sources help make these distinctions, as discussed below, but inferring project impact is still tenuous.

3.2.1 INFERRING IMPACT FROM CHANGES USING THIS METHOD

A pre-post study establishes a "control" by gathering data on the treated population prior to implementing an intervention. The differences in population statistics gathered before and after the treatment are caused by two types of impacts: 1) those resulting from the intervention (Type I and Type II) and 2) those resulting from any other programs, changes or trends that have taken place in the interim time period (Type II). The challenge of this method is separating Type I impacts from Type II impacts. For example, if median household incomes increase within the K-F ZOI between the Mid-Point and Post-Project studies, how does one differentiate whether this resulted from the K-F Road or from other changes that would have taken place without the road? Where we can anticipate what those other changes may occur and measure them efficiently, statistics can be used to plausibly separate them from road impacts. For example, if we find that the mean cost of fuel needed to drive one kilometer along the K-F Road has fallen 15 percent from the Mid-Point to the Post-Project Study, we can calculate how much of that result was driven by a change in fuel prices. After separating out this change, the remaining effect is a measure of the change in per kilometer fuel costs based on the road's improvement alone (as if not change in fuel prices took place).

The instruments used in this study were deliberately and methodically designed to collect control data on as many intervening factors as possible with respect to identifying impacts for the fourteen indicators. Once known factors for which we have data are controlled for, the remaining change observed represents the impact caused by the K-F Road rehabilitation and any other factors that have not been controlled for. At that point, a causal linkage between the intervention and the remaining change observed may be inferred using assumptions. Causality can be reasonably inferred only if both of the following assumptions hold:

i. There are no known factors that have not been controlled for that affected the outcome variable in the interim time period.
ii. There are no unknown factors that affected the outcome variable in the interim time period.

If these two assumptions are true, then the change observed is indeed the impact caused by the intervention. Therefore, the strength of any causal linkage suggested depends on the veracity of these assumptions. It is up to the evaluator, and in turn the reader, to critically assess the reasonableness of these assumptions and decide how credible the purported impacts are.

3.2.2 ENHANCING IMPACT INFERENCES WITH QUALITATIVE EVALUATION

Qualitative assessment was integrated into the evaluation design to provide insight into potential causal mechanisms. Open-ended questions help detect the presence of intervening factors that may be contributing to outcomes observed. For example, we can ask vehicle operators in a focus group whether their fuel usage per kilometer has gone up or down in the last year and then follow-up by asking 'why.' Reasons given may confirm or challenge the assumptions described above, which are necessary to infer impact. For example, drivers may respond that stricter enforcement of speed limits has led to greater fuel efficiency, a plausible reason for a drop in fuel costs not due to the road's improvement.

3.2.3 SUPPLEMENTING SURVEY DATA WITH SECONDARY DATA SOURCES

This study also uses secondary data to supplement survey findings. For example, hospital records from before and after road construction are being sought to provide an outside reference on whether more patients are making visits and whether they are coming to the hospital from a wider area than before. Using primary data and other external records such as traffic counts allows the study to make conclusions about changes that took place after construction began but before the first data collection, the mid-point surveys, took place. Informal interviews during field visits provide additional anecdotal evidence of observed changes and questionable causality of impacts.

3.3 USE OF SURVEYS

The Study Team designed nine survey instruments in order to collect the data necessary to measure the fourteen indicators. In some cases an indicator could be measured using more than one instrument. Each instrument targets a different unit of analysis, and instrument names are derived from those units. Exhibit 4 maps the indicators to the primary and secondary instruments and data sources used to measure them.

Exhibit 4: Indicators and their Data Sources

Indicator		Instrument / Data Source	Supplementary Sources
1	Cost of Food Staples	Market Overview	Business Surveys, Stakeholder Focus Groups, City Manager Semi-structured Interviews
2	Markets where goods sold	Household Surveys	Stakeholder Focus Groups, City Manager Semi-structured Interviews
3	Number of Businesses	Count conducted by CDOs	Business Surveys, Stakeholder Focus Groups, City Manager Semi-structured Interviews
4	Shopkeeper Monthly Sales	Business Surveys	Stakeholder Focus Groups, City Manager Semi-structured Interviews
5	Household Income	Household Surveys	Stakeholder Focus Groups, City Manager Semi-structured Interviews
6	Vehicle Operator Costs	Vehicle Operator	Household Surveys, Stakeholder Focus Groups, City Manager Semi-structured Interviews
7	Travel Times	Bus, Pass, Taxi	Vehicle Operator, Stakeholder Focus Groups, City Manager Semi-structured Interviews
8	Pax fare costs	Bus, Pass, Taxi	Vehicle Operator, Stakeholder Focus Groups, City Manager Semi-structured Interviews
9	Cost of Freight Transport	Freight Truck	Business Surveys, Freight Company Semi-structured interviews
10	Volume of Freight	Traffic Counts, Freight Truck	Business Surveys, Freight Company Semi-structured Interviews
11	Cost of Informal payments for Road Use	Vehicle Operator	Freight Company Semi-structured Interviews
12	Travel Time to Health Clinics	Household Surveys	Hospital Records, Stakeholder Focus Groups
13	Frequency of visits to Health Clinics	Household Surveys	Hospital Records, Stakeholder Focus Groups
14	Rates of School Attendance	Household Surveys	Stakeholder Focus Groups, City Manager Semi-structured Interviews

3.3.1 APPROACH TO INSTRUMENT DESIGN

Survey instruments were designed to gather the necessary data to measure the indicators and assess intervening factors driving changes observed and to minimize errors during survey application and data entry. Some of the features used are listed highlighted below.

- Guiding language to introduce survey and new topics and appropriately give context to questions;
- Filter questions and skip patterns;
- Coded answers with write-in space for "other;"
- Clearly defined time scope in questions (e.g., "during the last 30 days, how much money . . .?"); and
- Acceptance of refusals and "I don't know" answers for each question.

All instruments were pre-tested in similar field conditions in the vicinity of Keshim in Badakhshan Province, and feedback obtained from both respondents and enumerators was incorporated into the final instruments. The original instruments were drafted in English and then translated to Dari for field use. Independent back translation to English was performed in order to assure translation quality and integrity of meaning.

Exhibit 5 Summary information on the instruments used in both studies, including their length, content, average duration, number of observations, response rate, the indicators they measure, and the unit of analysis is displayed in Exhibit 5. Values listed for number of questions, average duration, observations, and response rates are provided for the Post-Project Study only.

Exhibit 5: Summary Information on Instruments Used

Instrument	No. of Questions	Contents	Duration (minutes)	No. of Obs.	Response Rate	Primary Indicators Measured	Unit of Analysis
Household	93	HH characteristics, expenditures; income; agricultural activity; use of the K-F Road; access to markets, healthcare, and schools.	78	467	99.57%	2, 5, 12, 13, and 14	From an aerial survey, 502 GPS points within 15 km of the KF representing compounds / households were selected for enumeration
Small Business	33	Business Type and Characteristics, goods sold, revenues, transport costs, total expenditures, use of the K-F Road to receive goods.	30	199	87.00%	4	Businesses located in the two terminal cities of Keshim and Faizabad.
Vehicle Operator	34	Trip length (km) and time, vehicle type, usage of the K-F Road; Expenses for fuel, repair and maintenance; Night-time K-F Road Use and Incidence of stops for Informal Payments on the K-F.	26	244	100.00%	6 and 11	All drivers using the K-F Road from points all along the road and in Keshim and Faizabad.
Market Overview	3	Retail price for at least 10 and no more than 14 items.	84	500	N/A	1	Prices of items chosen for the basket of goods were recorded. Samples of items as well as the markets themselves were
Personal Vehicle	5	Passenger Fares and Trip Lengths	N/A	318	N/A	7 and 8	Non-commercial cars and trucks using the K-F Road were stopped at points along the K-F as well as in Keshim and
Bus	4	Passenger Fars, Occupancy, and Trip Length	N/A	73	N/A	7 and 8	Buses using the K-F Road were stopped at points along the K-F as well as in Keshim and Faizabad.
Freight Truck	4	Trip length, Quantity of Cargo, and Cost of Shipping	N/A	81	N/A	9 and 10	Trucks using the K-F Road were stopped at points along the K-F; as well as in Keshim and Faizabad.
Taxi	5	Passenger Fars, Occupancy, and Trip Length	N/A	975	N/A	7 and 8	Taxis departing either Keshim or Faizabad with the other terminal city as its destination.
Village Elder	44	Village size; access to services and markets; Road use by elders and village residents; development priorities; anticipated impacts of the K-F Road.	45	105	99.06%	None Directly	Villages located within 15 km of the K-F Road

3.4 SAMPLING

Sampling is what allows a limited number of responses to be generalized to represent a larger group. For reasons discussed above, good sampling is very challenging in Afghanistan. Nevertheless, the Study Team took the sampling strategy for each instrument extremely seriously and dealt with the limitations and constraints on sampling in two ways. First, we worked tirelessly to make every reasonable effort to achieve representative samples in spite of the challenges discussed above. Second, we carefully and critically evaluated the data collected to readily recognize any biases in our sampling, in order to assure that our findings are appropriately qualified. These efforts should support the validity of our findings with overreaching our conclusions.

3.4.1 TRADEOFFS IN SAMPLING DESIGN

Designing a sampling strategy inherently involves making tradeoffs between important objectives and principles. The "best" sampling strategy is one that appropriately values tradeoffs. Some of these tradeoffs are discussed further below:

- Representativeness and Comparability – Representativeness refers to how closely the sample represents the population, while comparability refers to how reliably the sampling approach can be repeated in order to detect changes over time. There are situations where perfectly representative sampling methods are infeasible or impossible. Designing a 'next best' sampling approach often involves making tradeoffs between a method that will yield a fair degree of sampling error but will bias the results in an understandable and replicable way or using an approach that would produce less sampling error but possibly bias the results in less certain ways that would not be consistent between the Mid-Point and Post-Project Study data. In other cases, the more representative approach would have produced unbiased results that are so noisy; detecting a change over time was unlikely. Since this study relies on comparisons between samples collected at two points in time and is ultimately interested in measuring the difference, a larger but stable bias is preferable so as not to distort the change measured. Subtracting one biased estimate from another estimate with the same bias can cancel out the bias.

- Costs and Statistical Power – Power is the probability of statistically detecting a change in the sample a change occurs in the overall population. Power depends on the minimum effect size, or minimum degree of change that will be detectable, the number of samples that will be collected, and the variance of the responses. The questions needed to answer each indicator were reviewed for statistical power in order to detect a five or ten percent effect size. The sample sizes were adjusted to find the minimum number of observations needed to bring the power levels to at least 80 or 90 percent. Where the resulting sample sizes were deemed too high, we adjusted the question to reduce variance, revised the instrument in order to lower the cost of obtaining a high number of samples, or devised an alternative measurement approach. This process assures that resources are not wasted collecting more samples than needed or collecting too few samples to measure the indicator. Further, the sample sizes for the Post-Project Study will be optimally adjusted, taking into account the actual variance observed. This will lead to additional costs savings in the Post-Project Study and further assure that the changes in the indicators can be statistically detected with an acceptable probability.

- Rigor and ease of implementation – A final tradeoff in sampling design is the tradeoff between method and statistical rigor and the ease with which the planned methods can actually be implemented. If sampling designs are too ambitious and place expectations on field teams that cannot be fulfilled, data quality will suffer in a number of ways. Survey personnel in the field may get frustrated and try to adapt the method as they deem appropriate or make mistakes without being

aware. In any case, this introduces a complex array of distortions and biases in the data that may or may not be detectable. On the other hand, rigorous methods, when well followed, produce data that are more representative and freer from error. Therefore, it is critical that the sampling design strike the right balance to achieve optimal data quality given the context. Achieving this balance requires the following: survey designers and directors with field experience overseeing survey teams; an understanding the capabilities of the survey team; pilot testing sampling approaches; extensive and well designed training of survey personnel; and the ability to adapt sampling approaches as appropriate and necessary when something is not working.

3.4.2 SAMPLING DESIGNS USED

Household Survey

Due to the lack of reliable demographic data, we conducted an aerial household census of the ZOI. We used satellite imagery of one to two meters in resolution to identify and geo-tag residential structures. In total, 54,644 household structures were identified and geo-tagged within the study ZOI. Of those, 502 household structures were randomly selected for enumeration. Given the mountainous terrain and poor roads in the areas, the Study Team elected to limit the number of places that the Study Team had to travel which exceeded 10 km in distance from the road. It did this through creating a value-to-effort weighting system which allowed for a random selection of a specified number of household structures and then amplifying the number of households that were surveyed in proximity to the selected households. This served to increase the efficiency of the data collection without compromising the representativeness of the sampling group. Exhibit 6 maps the locations of the household survey sampling sites

Once the residential structures were selected, the Survey Teams were issued GPS units with each sampling point programmed into the unit. The enumerators were instructed to go the household points in their GPS units. These were denoted as three digit numbers (e.g., 322). They were told to put the GPS unit in their pocket once they were within thirty feet of the house. They were to then continue walking in the same direction, counting down from thirty. When they stopped, they interviewed the closest housing compound where they stopped. When there was more than one household residing in a compound, each survey had a randomization sheet where enumerators were to list all households in the compound, record the count, and using the minute on their cell phone and the count, find the random nth household to sample.

Given that we wanted to be able to compare household statistics, the Survey Team issued GPS units with the sampling points used during the Mid-Point Study into the unit. Unless there were any unforeseen security problems or villages turned out to be nomadic and no longer existed one year later, essentially the enumerators would be visiting the same households to conduct the same surveys with a one year time lag.

Business Survey

In the Mid-Point Study, IRP CDOs conducted a GPS census of all businesses located in the cities of Keshim and Faizabad and in the villages directly along the K-F Road. A total of 3,301 businesses were identified and from these a sample of 161 businesses was randomly selected. As with the household surveys, the GPS coordinates of each were entered into GPS units that were issued to the enumerators, who were instructed to conduct the survey at each GPS point. Each survey had a randomization sheet where enumerators were to list all businesses in the polygon, record the count, and using the minute on their cell phone and the count, find the random nth business and sample it.

In order to increase the sample size of businesses in the Mid-Point Study, the Survey Team decided to randomly add forty businesses to reach a sample size of 201 businesses. In order to do this, the Study Team instructed the Faizabad Community Development Office (CDO) to collect 500 GPS coordinates in Keshim and 500 GPS coordinates in Faizabad. Then, from the one thousand GPS points collected in the Post-Project business census, the Survey Team randomly selected one point from every group of fifty points (25 points in Keshim and 25 points in Faizabad) until 40 randomly distributed points had been

selected. The Survey Team distributed these points to the enumerator and instructed them to conduct interviews with this additional sample of businesses. This brought the total sample size to 201 businesses.

In the Mid-Point Study, the Study Team intended to survey a sample of 70 businesses in the household polygons off the road; however, of the 49 polygons that IRP had requested one or more businesses to be sampled, only 17 were sampled with the correct number. The under-sampling could have been due to the fact that there were not enough businesses in the polygon. As a result, the Study Team decided not to use the data from the surveys in villages where the GPS census was not performed. In the Post-Project Study, it was important to capture changes only in the businesses that fell within the geographic scope of the Mid-Point's sampling frame. While this means that data about businesses will be confined to the terminal cities, this approach will avoid using data where its representativeness is questionable.

Market Overview Survey

Market overview surveys were conducted to collect a sample of prices for a common range of goods from a shopper's perspective. These included 24 items such as food staples, personal care products, fuels, batteries, fertilizer and pesticides. A convenience sampling approach was adopted in which enumerators were instructed to go to various markets and to gather price samples. Enumerators were to pose as real buyers. This means the sample could suffer from a degree of selection bias. However, in the Mid-Point Study, the enumerators conducted the surveys in the same way, so whatever bias may be present will be replicated in a systematic way in the Post-Project enumeration. In order to assure a significant sample of prices for many goods, enumerators were instructed to continue to collect prices from as many shops in the bazaar that sold a certain item until ten prices were recorded. Thirty surveys in total were conducted in markets in both Keshim and in Faizabad.

Vehicle Operator Survey

The IRP Study Team instructed enumerators to conduct the vehicle operator surveys for both studies along the K-F Road and outside its two terminal cities—Keshim and Faizabad. In the Mid-Point Study, enumerators conducted surveys along the road in Athen Jalo (at 32 kilometer marker), and in Keshim and Faizabad cities. Post-Project enumeration was also conducted in Athen Jalo, Qara Kamar (at 64 km) and in Keshim city. Enumerators were instructed to attempt to stop each vehicle, conduct the survey, and then resume with the next passing vehicle. If a vehicle refused to participate in the survey, the enumerator would let that vehicle pass and stop the next passing vehicle on the road. In total, the enumeration team conducted 245 Vehicle Operator Surveys. Despite questioning drivers using the road between Keshim and Faizabad, the questions are framed in such a way so that vehicle operator costs can be adjusted for travel distance. For both studies, the Study Team considered only those trips between 80 and 180 km as full K-F Road trips, cutting down on the number of observations that gave responses and thus minimizing those trips that included other routes.

Freight Truck Survey

Similar to the Vehicle Operator survey, enumerators were stationed on the K-F Road and stopped freight vehicles heading towards the other city. The Study Team instructed enumerators to pose as interested clients in order to minimize response biases.

Paid Passenger Vehicle Survey

Similar to the Vehicle Operator survey and Freight Truck survey, enumerators were stationed on the K-F Road and they stopped personal vehicles heading towards the other city. The Study Team instructed enumerators to pose as interested clients in order to minimize response biases.

Bus Survey

Enumerators were instructed to seek buses and mini-buses Keshim bound for Faizabad and vice versa. Samples were taken at a point in each terminal city where buses are known to depart from, such as bus

stations. The Study Team instructed enumerators to pose as interested clients in order to minimize response biases.

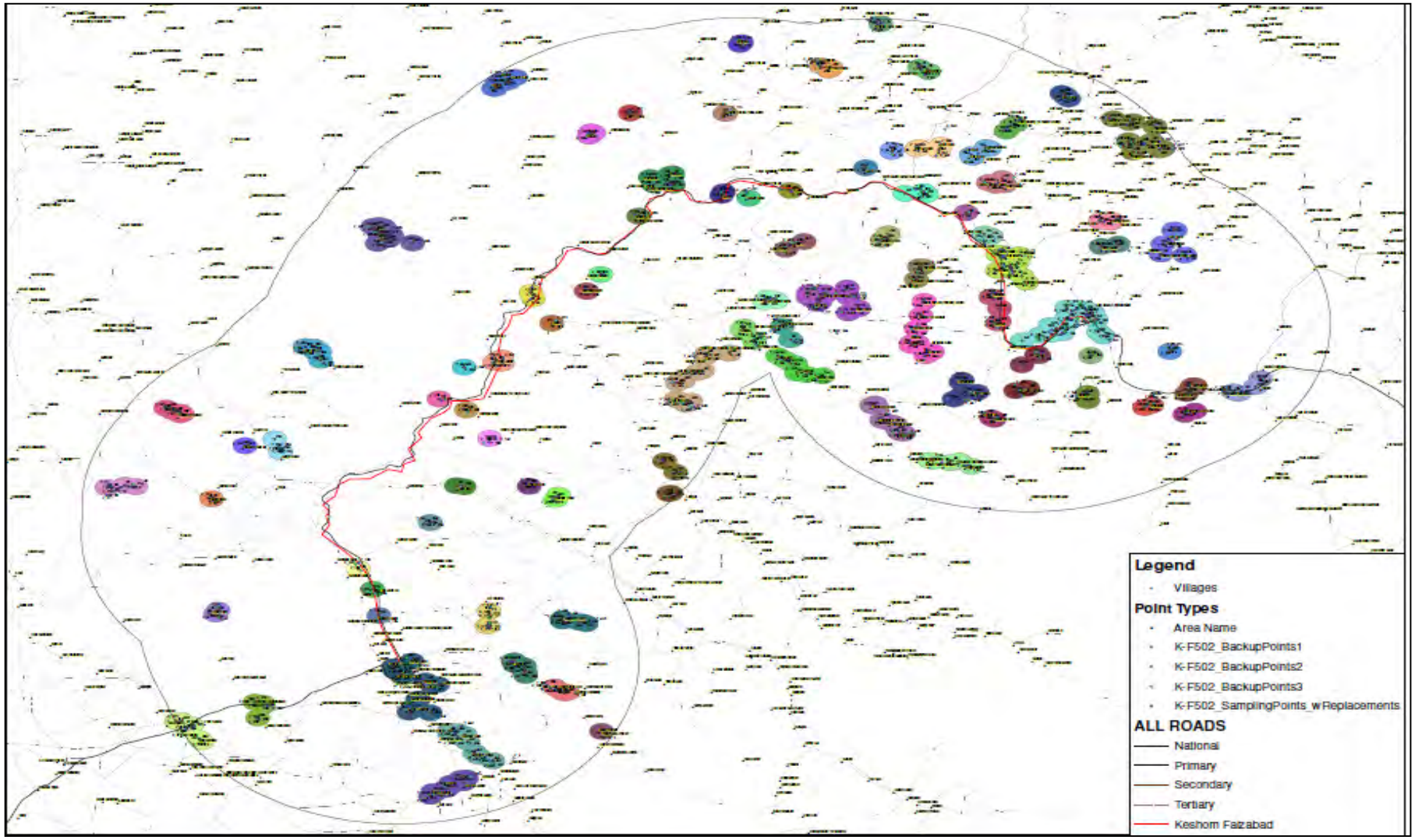
Taxi Survey

Similar to the Bus survey, enumerators were instructed to seek taxis Keshim bound for Faizabad and vice versa. Samples were taken at one point in each terminal city (most likely the city's main taxi stand) so that the taxi's departure city is known. The Study Team instructed enumerators to pose as interested clients in order to minimize response biases.

Village Elder Survey

In each polygon where household survey samples were taken, enumerators interviewed a village elder or leader, whenever possible. This survey functioned as a tool for protocol to ensure the support and cooperation of the community surveyed as much as it did for gathering qualitative information.

Exhibit 6: Map of Household Sampling Sites in the K-F Road Mid-Point and Post-Project Studies



IV. STUDY FINDINGS

This section provides context to the reader by reporting on overall findings after the road's rehabilitation has been completed. Section 4.1 gives an overview of findings concerning the ZOI, including a discussion of the geographic distribution of households in the ZOI, general household characteristics, road usage patterns, and village elder development priorities. Section 4.2 presents the findings for each of the fourteen indicators, providing information on the methodology for data collection, the quantitative results, and a discussion on any data limitations that were encountered. Section 4.3 discusses several special issues, including the security environment as well as key findings that were drawn from qualitative research that was conducted. Finally, Section 4.4 identifies various threats to validity for each indicator and the steps taken to mitigate concerns for bias in the data.

4.1 OVERVIEW OF THE KESHIM-FAIZABAD ZOI

In addition to data for the formal set of indicators, information on the characteristics of ZOI households, villages, and businesses was gathered.

This section presents an overview of the ZOI to give context for the changes observed in the socio-economic indicators, discussed later in this report. Using data from the household and business surveys provides the information needed for developing these general statistics; however, the Settlement Demographic instrument provides data collected from interviews with village elders, which can be used to provide a very general understanding of certain characteristics but should not be interpreted as conclusive about the ZOI population.

4.1.1 GEOGRAPHIC DISTRIBUTION OF THE POPULATION

Theoretically, the level of benefit a household or village receives from the road should depend largely on its proximity to the road. Households and villages that lie closer to the road inherently have greater ease of access to the road and thus should derive greater benefits. This may be particularly true for households that are more geographically isolated from the terminal cities, but still lie close to the road and can absorb the impacts of a rehabilitated road. This section takes a closer look at the geographic distribution of our ZOI population.

Geographic isolation, in theory, should make it more difficult for household members to access education and health services, main city markets, and income-earning opportunities. In the Post-Project Study, robust statistical relationships were found between distance to K-F Road and ease of travel to health facilities and schools. Looking at income, prior to the road's completion, income and distance to K-F Road was not found to be statistically significant. However, in the Post-Project Study, we found that proximity to the road, distance from a terminal city (Faizabad, in particular), and total travel distance (to and along K-F Road) to Faizabad are all strong, statistical predictors of income. Although attribution is difficult when observing changes in income, we can assume that the rehabilitated road can decrease the "costs" of isolation, especially for those households that live far from terminal cities but close to the K-F Road. Over time, we would expect this impact to grow.

The ability to answer spatial questions about road impacts has been limited. Data are often unmarked geographically, so past studies have yielded a less perfect picture of where the population is located. This makes it especially difficult to obtain a geographically representative sample and further makes it almost impossible to gauge whether any bias is present. The advantage of the approach this study has taken is that it has provided a much more representative sample with a geographically rich set of data.

Exhibit 7 shows the household distribution in the ZOI of the K-F Road for the 467 households sampled in the Post-Project Study.[17] As expected, the maximum number of households are distributed closer to the cities and located in Keshim and Faizabad. High household densities are also notable along the K-F Road, particularly approaching Faizabad. Household density also increases in valleys and along the secondary roads. A closer look at densities, we observe that in general the highest household density is found within one kilometer from the road (52 households per square kilometer). From 0 to 5 kilometers from the road, the mean density is 33 households per square kilometer, and continuing away the road, the area from 6 to10 kilometers has a mean density also of 33 households per square kilometer, with a slightly lower mean density of 28 households per square kilometer in the area 11 to15 kilometers from the road. It is important to note that the household distribution beyond 1 km from the road is not uniform. In fact, the second highest household density occurs between 10 and 11 kilometers from the road where there are approximately 45 households per square kilometer. Therefore, the expectation that household density would decrease at increasing distances from the road is not necessarily true.

Exhibit 7: Map of Household Distribution in the Keshim-Faizabad Road ZOI

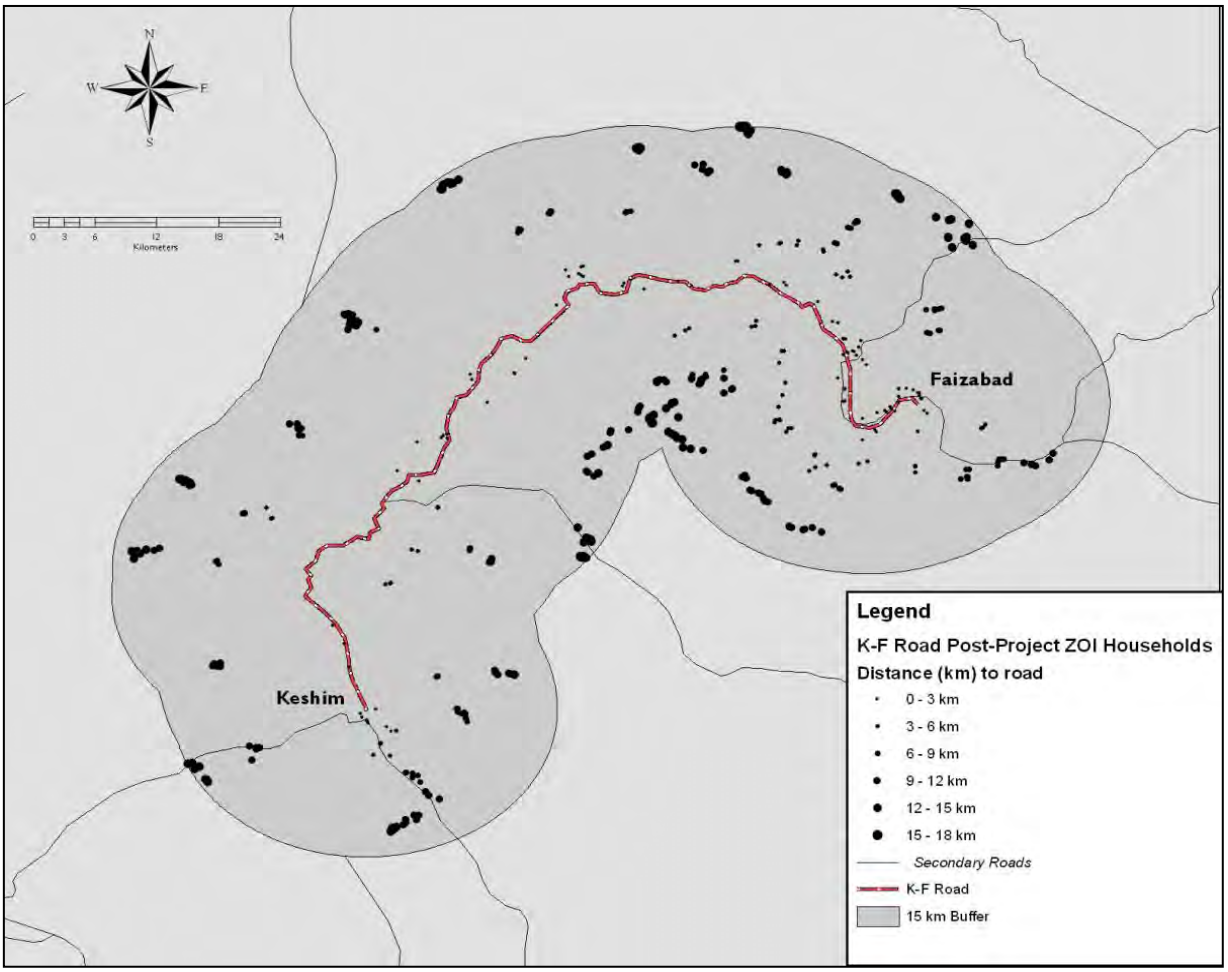
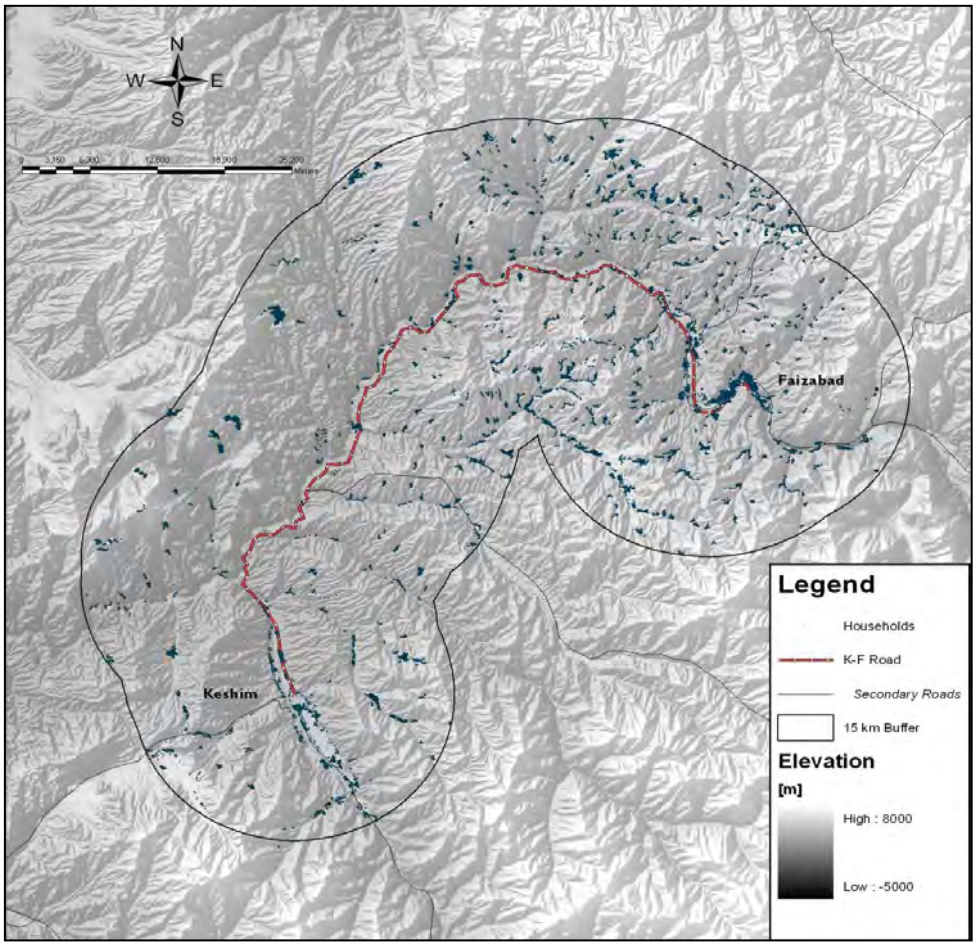


Exhibit 8 below shows a clear relationship between population distribution, elevation, and roads in the K-F Road ZOI. As expected, the maximum densities of households are located in Keshim and Faizabad. High

[17] In total, 54,604 houses were identified within the 15 kilometers ZOI of the K-F Road. Based on field data collected in the Mid-Point Study, the Study Team estimates that 3.5 percent of the households marked during the aerial census were not in fact occupied residences. It is possible that houses may have been abandoned since 2004 when the satellite imagery was taken and/or houses originally inhabited by nomadic tribes have been moved and/or do not exist any longer. It is not known the exact number of dwellings excluded from the census. One important dynamic to note in Afghanistan is that nomadic households typically use lower elevation residencies in the winter and then move to higher altitudes in the summer.

densities are also notable along the K-F Road, particularly approaching Faizabad. Household density also increases in valleys and along the secondary roads. The lowest densities occur in the southwestern portions of the ZOI.

Exhibit 8: Household Density and Elevation along the Keshim-Faizabad Road



4.1.2 GENERAL HOUSEHOLD STATISTICS

For the purposes of this study, a household is defined as, "a group of people living under one roof and sharing financial resources." According to the data collected in the Post-Project household survey, the number of households residing in a single compound range from one to nine, with the average number of households per compound falling around two. The average number of people living in a compound is sixteen. In regards to construction type of dwellings, 94 percent of households live in mud or clay structures while most of the remaining households live in brick structures. These dwellings typically have four rooms.

Looking at migration patterns, the average amount of time a household structure has existed is 35 years. It is apparent that few non-nomadic households physically resettle, as the average existence of households within a village is 62 years with only 19 percent of those having moved to another village in the last twenty years.

The age demographics within the households surveyed are similar to those generally found throughout Afghanistan – almost 3 in 5 members of households surveyed are under the age of eighteen, suggesting a burgeoning youth population.

Assessing household access to electricity, the Study Team found that most villages have rudimentary access. According to data gathered in the household survey, 15 percent of households purchased electricity for their homes. To fill this gap in electrification, 97 percent of households own a kerosene lantern and 79 percent own

battery-powered lamps. Diesel generators and kerosene/paraffin stoves are less prevalent; only 16 percent and 20 percent of households reported owning these items. Since the Mid-Point Study in 2009, generator ownership has increased by four percent and kerosene/paraffin stove ownership has increased by five percent.

Agricultural productivity is also measured in our household survey instrument. A large percentage of households grow crops. About half of the population depends on their crop growth for half or more of their food (see Exhibit 9). Furthermore, the majority of surveyed households (48 percent) reported consuming less than half of the food they grow. Almost four percent of households (equivalent to about 15 households) entirely depend on their crops for subsistence. Non-subsistence households (consuming some to most of their crop growth) reported spending a median monthly amount of $179 on food.

Exhibit 9: Household Daily Food Subsistence on Crops Grown

Estimate of Household Dependence of Food Grown for Daily Food Subsistence		
	2009	2010
All Food Grown	2.8%	3.5%
Most Food Grown	6.7%	14.2%
Half of Food Grown	41.0%	34.1%
Some of Food Grown	49.5%	48.0%
None of Food Grown	0.0%	0.2%
Total	**100%**	**100%**

The irrigation methods for households in the K-F ZOI did not change significantly over the course of a year, although the use of irrigation systems did increase slightly. Exhibit 10 provides the breakdown of households using irrigation and/or rain as a crop watering method. While almost thirty percent of households use irrigation to water their crops, 71 percent rely solely on rain.

Exhibit 10: Household Irrigation Use in Crop Cultivation

Irrigation and Rain Usage for Household Crop Cultivation		
	2009	2010
Irrigation	12%	14%
Rain	70%	71%
Both Irrigation and Rain	18%	15%
Total	**100%**	**100%**

Households growing crops were also asked about their usage of fertilizers, pesticides, and seeds for farming in the past twelve months. In the Post-Project Study, eighty-two percent of households surveyed reported using fertilizers, 95 percent reported planting seeds, and just under half of the households (47 percent) reported the use of pesticides. Compared to the Mid-Point Study, twelve percent more households reported using fertilizers, while 25 percent more reported planting seeds, and just under fifteen percent more households reported using pesticides. It is difficult to attribute these changes to the road itself since other agricultural development programs may be occurring in the area, particularly seed distribution programs.

4.1.3 ROAD USAGE

This sub-section highlights the different uses of the K-F Road for village elders, farmers, and business owners.

Current Village Interaction with the Road

To discern village accessibility to the K-F Road, the Study Team interviewed one village elder from every household polygon within the K-F Road's ZOI, in total 106 village elders.[18] The average distance these villages are located from the road is 9.7 kilometers. In order to reach the K-F Road, 94 percent of villagers reported having to travel along dirt roads while the rest reported using gravel roads (two percent indicated there was no access road from their own village to the K-F Road). Village elders reported on average nineteen annual trips to Keshim and thirteen annual trips to Faizabad on average. This revealed an increase (by 73 percent) in the number of trips to Keshim made by village elders since the Mid-Point Study, and a decrease in the number of trips to Faizabad by 41 percent.[19]

Current Road Usage for Education and Primary Health Care

The Study Team also used the village elder survey to learn about health care access and school presence within their villages. Half of the 106 village elders interviewed responded that there is a primary school located in their village. If a primary school is not located within their village, the median travel distance reported to the nearest school is three kilometers. The median time spent to travel to a primary school outside of a village is 30 minutes. The median travel time for those living in villages without a primary school did not increase from the Mid-Point Study. This is unusual given that there was a rise in the use of motorized vehicles for travel in the Post-Project Study. However, of those village elders who reported not having a primary school in their village, only eleven said that people living in their village use the K-F Road to travel to the nearest primary school. The primary mode of transportation for these people using the K-F Road to travel to the nearest school is walking. This leads us to conclude that for villages that do not have primary schools, the nearest school is close enough to go by foot.

Regarding secondary schools, of the 106 village elders surveyed, 68 percent reported they did not have a secondary school located in their village. For villages without secondary schools, the median travel distance to the nearest school is five kilometers, taking on average 30 minutes to reach the school. Of the 72 village elders who reported not having schools in their villages, only twenty reported they use the K-F Road to travel to the nearest secondary school. Of these respondents, only four take a motorized vehicle, while the rest walk. According to household survey data, eleven percent of households in the Post-Project Study use the K-F Road to travel to school compared to 12.4 percent of households in the Mid-Point Study, regardless of whether a primary or secondary school is within the village.

In regards to hospitals in the area, the village elders, when asked, reported having fifteen clinics and six hospitals in their villages.[20] The nearest hospital is 23 kilometers on average from a village, and 75 percent of villagers use the K-F Road to reach the nearest hospital. The nearest clinic is on average 8.2 kilometers from the respondent's village. About 40 percent of villagers said they use the K-F Road to get to the nearest clinic. Based on the household survey data, around 46 percent of households use a motorized vehicle to reach the nearest hospital or clinic, if a health care facility is not available in their own village. The other 54 percent travel by animal transport (donkey, mule, horse) or by foot.

Current Road Usage for Child Birth

In the Post-Project household survey, 47 percent of households reported having had a child birth within the last year. However, only 27 percent of these births were carried out in a hospital or clinic. Of those who

[18] Although the data reported by elders is not representative of the ZOI population, it provides village-level data that was not collected in the household survey.
[19] It is important to note that while these are the results of the village elder survey, we cannot directly attribute the road to greater travel to Keshim. In this case, it could just be that more village elders near Keshim were at home when the interview took place.
[20] The villages reported to have public hospitals are: Keshim, Faizabad, Yaka Toot, Momen Abad, Lesa Naswan, and Koche Faizullah.

provided a reason for not going to a clinic or hospital, 41 percent said the health facility was too far and twelve percent said travel to the clinic was too expensive. Exhibit 11 provides a breakdown of births occurring at home, in a clinic, or in a hospital and distance of households to K-F Road for those households reporting a birth in the past year.

Exhibit 11: Location of Births in the Keshim-Faizabad ZOI

Percentage Change in Households With Child Births in Last 12 months from 2009 to 2010			
Distance from K-F Road	Home	Clinic	Hospital
<1km from road	-3%	9%	-6%
1 to 3km from road	-19%	-	29%
3 to 6km from road	-11%	-	16%
6 to 9km from road	-6%	1%	7%
9 to 12km from road	-16%	7%	9%
>12km from road	-2%	4%	2%
Total	-9%	3%	17%

As the exhibit indicates the percentage of households with child births at home decreased by nine percent from Mid-Point Study to Post-Project Study. In particular, births in hospitals increased quite dramatically, overall an increase of seventeen percent, with the highest increase in hospital births shown among those households who live in close proximity to the K-F Road (within 3 km of the road). Although attribution is difficult to determine in this case, these results are supported by our qualitative findings from informal interviews with doctors at Keshim hospital.

Keshim hospital's head doctor reported, in an interview on November 25, 2010, that not only had the hospital's patient doubled in the last year, but two months prior to the interview, the found zero deaths due to pregnancy. He attributed these changes to increased access of the K-F Road. In addition, the head doctor confirmed that more villages had their own vehicles which allowed patients to travel faster to the nearest hospital or clinic than before; previously, a patient might have to travel 6 to 7 hours by donkey to get to the nearest health facility, while now that same patient could reach the hospital within 30 minutes by car. An interview with the female doctors working in the women's health division of the hospital revealed that they too had seen an increase in patient load (an increase of 50 percent from one year ago). They also remarked that the new road allowed greater access into villages to post more health education signage to bring awareness to preventative care, particularly prenatal care and family planning.

Current Road Usage by Farmers and Businesses

The business surveys were used to identify some key characteristics about K-F Road use. Of the 198 businesses that responded in the Post-Project Study, 62 percent received or transported their goods via the K-F Road (an eight percent increase from the Mid-Point Study).[21] About 80 percent of these goods come by trucks or vans, while the other 20 percent come by a variety of vehicles including buses/minibuses, cars, jeeps, trailers, and carts/wheelbarrows/wagons. Business owners were also asked about their usage of the road to transport their goods in the summer and winter months. The Study Team found in the Post-Project Study that 58 percent of respondents use the K-F Road to transport at least half of their goods and merchandise to their final destination during the summer months in 2010, an increase from 43 percent of businesses that reported

[21] There are other factors that could be attributed to this increase. Changes in road usage observed year to year should not be interpreted as direct impacts of the road's rehabilitation.

doing so in the summer of 2009 (see Exhibit 12). During the winter months, the usage of the road was roughly as high as the summer months in 2010 with 55 percent of businesses transporting their goods and merchandise on the K-F Road, an increase from 39 percent who reported using the road in winter of 2009.

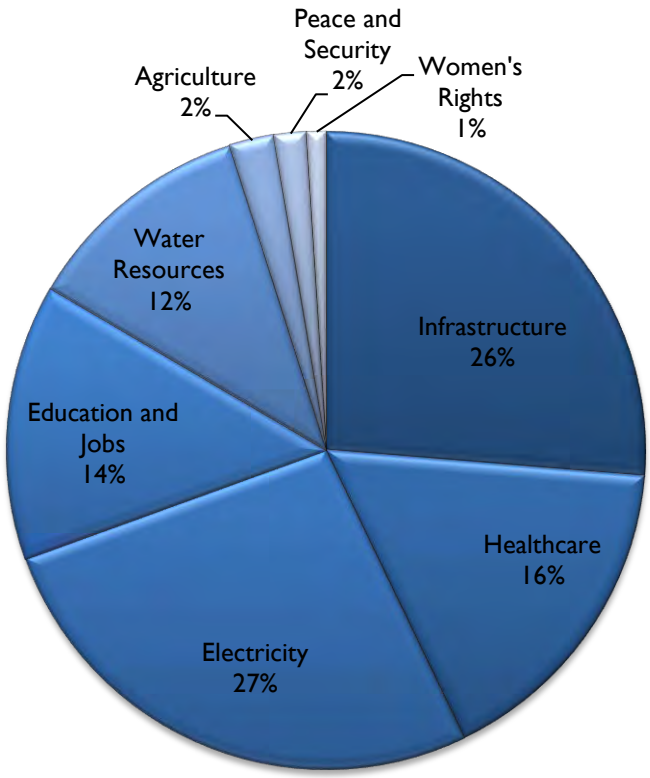
Exhibit 12: Proportion of Goods and Merchandise ZOI Businesses Transported via the K-F Road

Proportion of Goods and Merchandise Transported by ZOI Businesses along the K-F Road				
	2009 Summer	2010 Summer	2009 Winter	2010 Winter
All	38%	53%	36%	48%
More Than Half	4%	4%	3%	4%
Half	1%	1%	0%	3%
Less Than Half	4%	3%	4%	4%
Almost None	0%	2%	2%	2%
None	53%	39%	55%	40%
Total	**100%**	**100%**	**100%**	**100%**

4.1.4 HIGHEST DEVELOPMENT PRIORITIES

In the Village Elder Survey, 102 respondents listed the most important priorities that would affect their livelihoods. Exhibit 13 shows the breakdown of top priorities for development impacts.

Exhibit 13: Highest Development Priorities for Villages



More than half of the village elders claimed that electricity and infrastructure are the greatest priorities for their villages. For many, infrastructure included roads, bridges, retaining walls, and dams. The third priority

was healthcare and the development of health facilities, such as clinics and hospitals. Peace and security and women's rights/empowerment were not mentioned in 2009, but were newly stated as important aspects of the development post-road rehabilitation.

4.2 INDICATOR RESULTS

This section reports both on Mid-Point Study indicator values representing the K-F Road ZOI from data collection in November/December 2009 and April/May/June 2010, as well as the Post-Project Study indicator values from data collected in November/December 2010. The analysis will compare these two data points generated pre- and post-rehabilitation of the road, allowing the Study Team to gauge changes within a one year time span. Where appropriate, the Study Team attributes changes in indicator measures to the road's improvement. Exhibit 14 summarizes the indicator values for each study and provides brief definitions for each indicator. The sections that follow provide more specific information on each indicator, including its rationale, methodology, results, and data limitations.

Exhibit 14: Summary of Mid-Point and Post-Project Indicator Values

Indicator	Mid-Point Indicator Value	Post-Project Indicator Value	Unit*	Indicator Definition
Outcome Indicators as measured in Mid-Point and Post-Project Data Collection (November/December 2009, April/May/June 2009, November/December 2010)				
1. Cost of Food Staples	24.77	26.68	US Dollars	Mean Price for Bundle of Food Staples
2. Markets Where Goods Sold	7 (Crops) 10 (Livestock)	5 (Crops) 10 (Livestock)	Kilometers	Median Household Distance Traveled to Sell Crops and Livestock
3. Number of Businesses	3,212	2,299	Number	Total Number of Businesses in Keshim, Faizabad, and along K-F Road
4. Monthly Sales by Businesses	4,492	5,277	US Dollars	Median Business Sales (Last 6 Months)
5. Household Incomes	371	1,073	US Dollars	Median Total Household Income
6. Vehicle Operating Costs	783	552	US Dollars	Previous Month's Median Vehicle Operating Costs
7. Travel Times	234	98	Minutes	Mean Passenger Travel Time between Keshim and Faizabad
8. Passenger Fare Costs	7.95	3.27	US Dollars	Mean Passenger Fare Costs between Keshim and Faizabad
9. Cost of Freight Transport	0.27	0.17	US Dollars	Mean Cost Per Ton Per Kilometer
10. Freight Tonnage	2540	3159	Tons	Total Daily Freight Tonnage Transported
11. Cost of Informal Payments	2.32	1.47	US Dollars	Median Cost of Informal Payments per trip between Keshim and Faizabad
12. Travel Time to Health Clinics	62	95	Minutes	Mean Travel Time to Health Clinics for Minors
13. Frequency of Visits to Health Clinics	6	6	Number	Median Number of Household Visits to Health Clinics Per Year
14. Rates of School Attendance	83	82	Percent	Overall Percentage of School-age Children Attending School

* All US Dollars Amounts are estimated using inflation-adjusted 2007 exchange rates.

4.2.1 INDICATOR 1: COST OF FOOD STAPLES

Rationale

A rehabilitated K-F Road should reduce overall transport costs and increase farmer access to additional markets. We would expect that the improved road conditions and lower transport costs should result in food commodities becoming more widely sold across the ZOI giving consumers greater choice and that prices should converge across the main terminal markets. This is true regardless of whether goods are produced within the ZOI or not. Although lower transport cost should reduce consumer prices, the additional generated demand for the food commodities as well as other external factors could lead to initially higher prices in some markets. As such, the data collected for this indicator needs to be interpreted with some awareness of the ZOI's market dynamics.

Methodology

The Survey Team conducted Market Overview surveys to assess the cost of various food staples. Enumerators collected sales price data on 13 food staple items (including grains, dairy products, meats, fruits, vegetables, legumes, and cooking oil) from shops located in the three districts the K-F Road runs through: Keshim, Faizabad, and Argo. To collect sufficient observations to detect changes in prices, the Study Team used a non-statistical sampling method. Enumerators recorded prices in selected bazaars using a convenience sampling approach, collecting the prices they found, for a maximum of ten observations per enumerator per site. This approach was selected in order to mimic actual buying behavior in order to minimize response bias. In all, 2,968 price observations were included in the Post-Project analysis, with more than 175 observations for each food item. The sum of the average market prices of these 13 food staples was used to calculate the total bundle cost, which is a single figure that can be compared with past and future studies.[22] The total bundle cost was then used to analyze price deviations between the terminal cities, Keshim and Faizabad, and to compare with prices collected in the Mid-Point Study.

Results

The total bundle of 13 food staples for the ZOI in the Post-Project Study cost 26.68 USD, an 8 percent increase from the Mid-Point Study (see Exhibit 15). The food bundle price in Keshim city decreased slightly between the Mid-Point and Post-Project Study, while the food bundle price in Faizabad increased by 16 percent. The Mid-Point bundle price showed almost no differential between terminal cities; however, the cost of the Post-Project food bundle was 15.5 percent higher in Faizabad than in Keshim.[23] Thus, against the Study Team's expectations, there was an increase in price divergence. Due to the general rise in food prices, grains in particular, the Study Team expected to see a rise in the cost of the food bundles.[24] However, the effect of both market and non-market factors (e.g. seasonality, prices of exported goods, food insecurity,[25] etc.) in and outside the ZOI could be affecting some individual item prices more than others. This is discussed in greater detail below.

[22] The Mid-Point Study included 14 food items in the total bundle cost. However, due to an extremely limited number of observations of green grapes in the Keshim markets in the Post-Project Study, the Study Team removed green grapes from the bundle and adjusted the Mid-Point analysis accordingly.

[23] In general, food commodities tend to be cheaper in Keshim than in Faizabad, largely due to there being more arable land and agricultural production in Keshim.

[24] Although it is not quite clear why the food bundles experienced an increase in price divergence, it is possible that because the Post-Project Study was conducted only one month after the K-F Road's completion, the effects are still in the process of materializing.

[25] Maplecroft's Food Security Risk Index 2010 ranks Afghanistan as the least secure country in food supplies out of 163 countries based on 12 criteria developed with the World Food Programme. The Famine Early Warning Systems Network's October 2010 Afghanistan Food Security Outlook lists Badakhshan as "Moderately Food Insecure."

Exhibit 15: Total Cost of Food Bundle

Total Bundle Cost	Mid-Point Study (2009)	Post-Project Study (2010)	Annual Percent Change
Keshim	$ 25.50	$ 25.12	-2%
Faizabad	$ 25.10	$ 29.00	16%
ZOI	$ 24.77	$ 26.68	8%

To further test for price convergence, the Study Team calculated the mean absolute deviation of individual prices between Keshim and Faizabad for the Mid-Point Study and Post-Project Study (see Exhibit 16). The Study Team found price convergence in 9 of the 13 goods. Overall, the absolute mean price deviation between the two terminal cities decreased from 33.6 percent in 2009 to 25.3 percent in 2010, indicating a significant degree of price convergence between Keshim and Faizabad, a trend the Study Team expects to continue as the road's full effects materialize.[26]

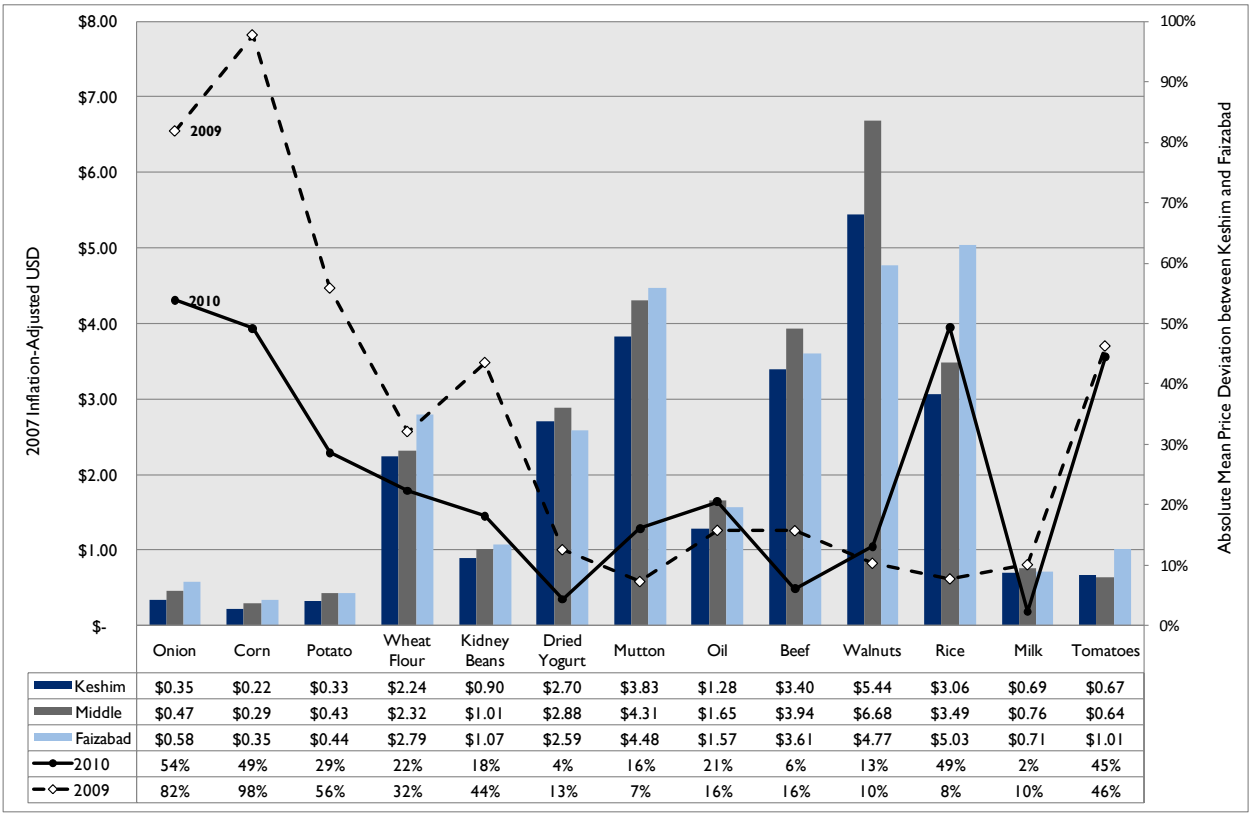
As shown in Exhibit 16, three commodities experienced a slight divergence and one commodity (rice) experienced a significant divergence that warrants further analysis. The price of rice in Faizabad increased from 4.08 USD in 2009 to 5.03 USD in 2010 (an increase of 23 percent), but decreased in Keshim by 30 percent (from 4.41 USD to 3.06 USD). This created a high absolute mean price deviation for rice between the two locations and contributed to the increase in price divergence between the food bundles.[27] It is possible the large differences in prices by location are due to a misreporting of quantities for rice sold in the markets (discussed in data limitations) or possibly a different grade of rice being reported in certain locations. [28] Despite some commodities showing greater year-to-year price fluctuations than others, the absolute mean deviation of the food bundle price is decreasing, indicating that prices overall are starting to converge post-rehabilitation. This is likely due to the effect of decreased transport costs.

[26] The Study Team found a large price differential for corn between Keshim and Faizabad in the Mid-Point Study, which contributed a substantial part of the 33.6 percent price differential in 2009. If corn is removed from the bundle, the absolute mean price deviation decreases to 28 percent in the Mid-Point Study and to 21 percent in the Post-Project Study.

[27] According to the World Food Program (WFP) November 2010 Price Report, the price of rice in Mazar (near Keshim) decreased by just 15 percent indicating that prices recorded during enumeration in Keshim may have been slightly high during the Mid-Point Study and low during the Post-Project Study. In addition, the prices of rice recorded in Faizabad in the Mid-Point Study were about 30 percent lower than what was reported by WFP.

[28] For rice, 17 price observations were misreported in one kilogram amounts, while the remaining observations were reported in *ser* (7 kg). The Team adjusted these accordingly by multiplying by a factor of 7.

Exhibit 16: Mean Food Prices and Absolute Deviations by Location



	Onion	Corn	Potato	Wheat Flour	Kidney Beans	Dried Yogurt	Mutton	Oil	Beef	Walnuts	Rice	Milk	Tomatoes
Keshim	$0.35	$0.22	$0.33	$2.24	$0.90	$2.70	$3.83	$1.28	$3.40	$5.44	$3.06	$0.69	$0.67
Middle	$0.47	$0.29	$0.43	$2.32	$1.01	$2.88	$4.31	$1.65	$3.94	$6.68	$3.49	$0.76	$0.64
Faizabad	$0.58	$0.35	$0.44	$2.79	$1.07	$2.59	$4.48	$1.57	$3.61	$4.77	$5.03	$0.71	$1.01
2010	54%	49%	29%	22%	18%	4%	16%	21%	6%	13%	49%	2%	45%
2009	82%	98%	56%	32%	44%	13%	7%	16%	16%	10%	8%	10%	46%

Additional Findings

Although non-food staples are not included in this indicator, the Market Overview survey instrument collected prices on additional goods as a comparator since food prices are subject to such volatility. Eight non-food commodities were included in a bundle for comparable prices across Keshim and Faizabad. These goods include body soap, toilet paper, shampoo, small batteries, large batteries, petrol, diesel, and wood.[29] Exhibit 17 shows the bundle for non-food commodities increased slightly from Mid-Point Study to Post-Project Study in both Keshim and Faizabad. Overall, the absolute mean deviation between the bundles in two terminal cities decreased by 9 percent, showing the expected convergence among non-food prices. The results for non-food commodities falls more in line with what we would expect to see as a result of reduced transport costs, namely prices converging over time in the ZOI. [30]

[29] Pesticides were removed from the bundle as there were no prices for pesticides recorded in Faizabad in the Post-Project Study. Fertilizers were also left out of the bundle given a wide range in reported prices. For both pesticides and fertilizers, there is a wide range of varieties sold in the region, both local and non-local. It is likely the discrepancy in prices is due to different types and qualities of these goods sold in the region.

[30] It is safe to assume that most of the goods come via Kabul and Mazar through Keshim city, so they provide a decent gauge of transport cost effects.

Exhibit 17: Cost of Non-Food Commodity Bundle and Absolute Mean Price Deviation

Total Bundle Cost	Mid-Point Study (2009)	Post-Project Study (2010)	Annual Percent Change
Keshim	$ 3.62	$ 3.86	7%
Faizabad	$ 4.23	$ 4.27	1%
ZOI	$ 3.96	$ 3.99	1%
Absolute Mean Price Deviation	21%	12%	9%

Data Limitations

The data used for this indicator have several possible limitations. The bazaars sampled may not be representative of other un-sampled bazaars in the ZOI, and the prices for the 13 food staples selected may not be representative of all shops that sell the same goods. Shops that were more visible had the required goods prominently displayed and were generally more accessible and had a higher probability of being sampled. Fortunately, the bias from this method simulates the purchasing patterns of an actual buyer better than a random sampling using GPS coordinates. Therefore, the data collected provides more relevant results in terms of what a buyer likely experiences when shopping in the market.[31] The bias would be the same for both the Mid-Point and Post-Project studies, so should not affect the analysis.

The variation in survey month could bias our year-to-year comparison and mean price deviations between locations. In the Mid-Point Study, the mean prices of some commodities increased or decreased depending on the month the observation was recorded. In the Mid-Point Study, 13 percent of total observations were recorded in November, and the remaining 87 percent were recorded in December. [32] All of the data for the Post-Project Study were collected in November. In addition, all November prices for the Mid-Point Study were only from markets located in Faizabad, while price data collected in the Post-Project Study were for both Keshim and Faizabad cities.

The different units by which goods are sold in the markets may have led to the misrepresentation of actual prices. This is a concern in particular for corn. The Ministry of Agriculture, Irrigation and Livestock of Afghanistan reported one kilogram of corn in Badakhshan costing 0.32 USD in 2009 and approximately 0.20 USD to 0.27 USD in North East Afghanistan in 2010. [33] In the markets, commodities such as corn can often be sold in one *ser* (equivalent to 7 kilograms) quantities. One-third of total observations for corn prices in the Mid-Point Study fell between 1.08 USD and 1.51 USD while a few prices (about 9 observations) in the Post-Project Study were recorded between 1.25 USD and 2.15 USD.[34] The Study Team decided that given the context of the regional and local markets, it is likely these prices had been recorded in *ser*, rather than kilogram. With this compensation accounted for in the analysis, the average prices of corn fell within 12 percent of the Ministry's 2009 price and also within the reported range for corn prices in 2010. Removing corn from the analysis has very little impact on the results, including the degree of ZOI price convergence and the differentials in bundle price year-to-year and between locations.

[31] There was no control for geographic sampling densities prior to enumeration. Further, price differences between the sampled areas may have been more or less variable in a randomized sample.
[32] Month as a dummy variable was found to be statistically insignificant for most commodities.
[33] The price of corn in Badakhshan was not listed in the Agricultural Commodity Price Bulletin (Year 6: Volume 10) in September 2010. All prices were originally listed in AFS, and converted by the Study Team using 2007 inflation-adjusted USD exchange rates.
[34] These data points are not considered as outliers and instead treated as misreported in quantity (possibly in *ser,* or 7 kg). Thus, in order to adjust prices accordingly, the observations for corn prices that fell within this range were divided by 7 (adjusting down to 1 kilogram price amounts).

4.2.2 INDICATOR 2: MARKET WHERE GOODS ARE SOLD

Rationale

Reduced transport costs and travel times on the Keshim-Faizabad Road should increase opportunities for farmers to sell goods farther from the place of production, potentially offering farmers access to markets with more favorable prices. This should transfer into increased rural incomes. A rehabilitated road could also allow greater distribution of goods so that new businesses and markets could set up along the road and in villages off the road making it easier for farmers to sell their goods locally. Thus, the expected effect of the road on distance to markets is ambiguous. We test this theory in our Results section below.

Methodology

The household survey was used to gauge the number of households that cultivate crops and raise animals. The survey identified which of these households sell crops or animals and the location in which they are sold. When asked where they sold crops or livestock, respondents were specifically asked about their highest value goods. This indicator is measured from these responses.

Results

Although access to markets is important, a relatively small portion of sampled households sell their goods in the markets. Based on responses from 467 households, 74 percent reported growing crops, out of which 15 percent reported selling them. Only 27 percent of households in the ZOI raise livestock, but most of these households (84 percent) reported selling their livestock in the past year. This is similar to the ZOI percentages of households growing and selling agricultural products at the time of the Mid-Point Study.[35] Within one year, the growing patterns of households located within the ZOI did not alter dramatically.

In regards to crop cultivation, about one-third of households growing crops use the K-F Road to sell their crops in the market. After the road's completion, the overall median distance traveled to sell crops was five kilometers (see Exhibit 1). This is a slight decrease from the median distance (7 kilometers) traveled to sell crops in the Mid-Point Study. Similarly, nearly 30 percent of households that sold livestock in the past year used the K-F Road to do so, traveling a median distance of 10 kilometers (see Exhibit 2). This was the same median distance travelled to sell livestock found in the Mid-Point Study.

Exhibit 1: Median Distance Traveled by HH to Sell Crops (Kilometers)

Where Crops Sold	Obs.	Median Distance
Roadside Stand	1	0.2
Nearest Bazaar	18	3.0
Bazaar in Keshim	9	10.0
Bazaar in Faizabad	11	7.0
Total	39	5.0

[35] Based on responses from 485 households in the Mid-Point Study, 65 percent reported growing crops, out of which 22 percent reported selling them. Twenty-five percent of households reported raising animals, and 70 percent of those households reported selling animals in the last year.

Exhibit 2: Median Distance Traveled by HH to Sell Livestock

Where Livestock Sold	Obs.	Median Distance
Roadside Stand	2	1.0
Nearest Bazaar	23	6.0
Bazaar in Keshim	17	14.0
Bazaar in Faizabad	19	11.0
Other	1	3.00
Total	62	10.0

The decline in median distance to sell crops can be partially explained by observing where and in which markets the farmers sell their goods. As shown in Exhibit 3, agricultural goods are primarily sold at nearby bazaars. Thirty-six percent of respondents sell their crops at nearby bazaars[36], while 34 percent sell their crops at a bazaar in Faizabad, and 15 percent sell in Keshim. Of the respondents who raise and sell livestock, the majority sell their livestock in the nearest bazaar (35 percent). Twenty-six percent of respondents sell their livestock in bazaars in Keshim and 29 percent in Faizabad.

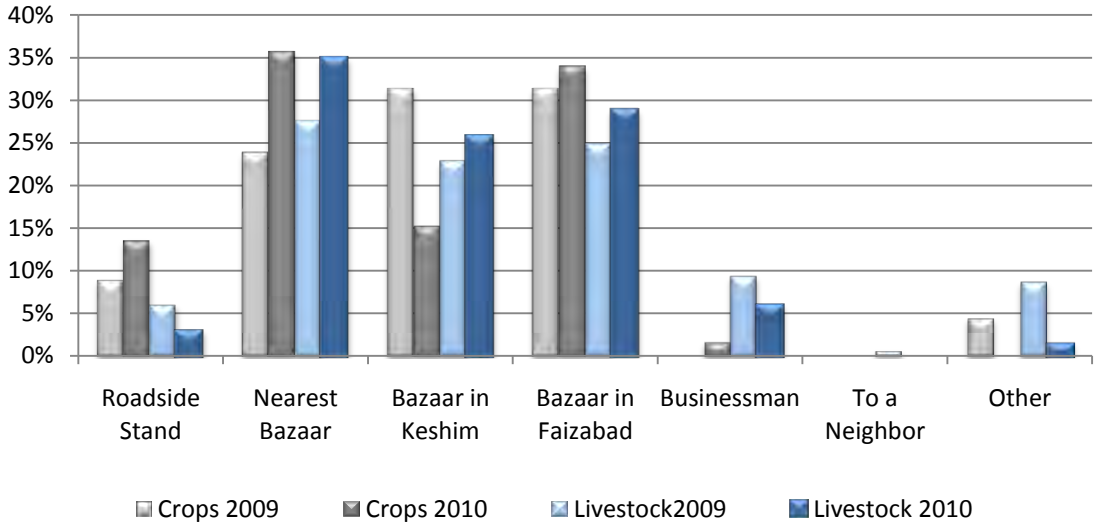
Exhibit 3: Post-Project Household Agricultural Sales by Market

Where Sold	Crops	Livestock
Roadside Stand	14%	3%
Nearest Bazaar	36%	35%
Bazaar in Keshim	15%	26%
Bazaar in Faizabad	34%	29%
Businessman	2%	6%
To a Neighbor	0%	0%
Other	0%	2%
Total	100%	100%

Compared to the Mid-Point Study, the percentage of respondents who sell their crops at a roadside stand increased by 5.6 percent, as did the number of household members who sold their crops in the nearest bazaar (an increase of almost 12 percent) (see Exhibit 4). The percentage of respondents who sold their crops in Keshim decreased by almost half, while those who sold their crops in Faizabad increased slightly (by only 2.5 percent).

[36] Households that grow and sell crops in the nearest bazaar travel between 0.5 km and 20 km.

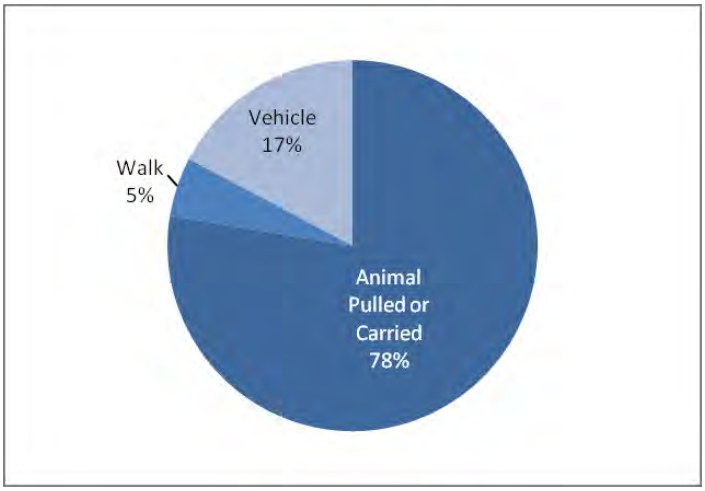
Exhibit 4: Changes in Agricultural Sales from Mid-Point to Post-Project Study



The Study Team expected to see an increase in producers selling their goods farther away to take advantage of better prices. It is possible that new marketplaces developed, perhaps in part due to the road's presence, which opened up new opportunities for farmers to sell their goods closer to the place of production. It is also likely that it is too early for farmers to have changed their growing patterns much. Over time, farmers should become increasingly aware of the benefits to accessing main markets and this should be demonstrated in increased distances they are willing to travel to sell their goods. This effect should be most pronounced in Faizabad where agricultural prices are generally higher than in Keshim due to the limited amount of arable land near Faizabad.

The primary mode of transportation used to get crops to market was animal-drawn or animal-carried carts with 78 percent of households reporting use of this method. Exhibit 5 shows the breakdown of modes of transport for crops to markets. There were no observable differences in the modes of transport respondents used to transport their crops to market in the Mid-Point Study compared with the Post-Project Study. Over time, we would expect to see more farmers using vehicles to transport goods to the market, especially if they are traveling farther distances over time.

Exhibit 5: Mode of Transport for Transporting Crops to Markets



Distance households lie from the road is a statistically significant predictor of distance traveled to sell crops.[37] The further a household lives from the road, the distance that household member will travel to sell their crops increased by a factor of 0.5. Interestingly, households located nine kilometers or more from the road are actually reporting traveling shorter distances to sell their crops. Furthermore, households located over 12 km from the road travel a median distance to sell crops of only 2 kilometers. This might indicate that more households are selling their crops locally, rather than in the main city markets.[38] In regard to households selling livestock, distance to city is a statistically significant predictor of distance traveled to markets; however, distance to road is not a statistically significant predictor of distance traveled to markets. This might reveal a correlation between types of goods sold (crops vs. livestock) and market prevalence – city vs. rural.

Data Limitations

When household members growing crops were asked how far they travel to sell their crops, 22 percent of total observations were entered as blanks which can only be interpreted as an enumeration error. We cannot predict what these households are likely to report as the location of sale; however, including these households would change the median distance results. In the case that the respondent could not provide the distance (in kilometers) they travel to sell their goods, they could instead provide the name of the destination village.[39]

4.2.3 INDICATOR 3: NUMBER OF BUSINESSES

Rationale

This indicator gauges whether the rehabilitation of the road improves the rural economy. Road improvements can create new business opportunities and one would expect that the current project would result in an expansion of businesses operating in the ZOI that typically benefit from lower transport costs and are directly or indirectly associated with the transport of people and goods (e.g., service stations, car parts, roadside food service). Lower transport costs could also generate additional economic growth in the ZOI as residents and road users increase their disposable income to spend on other goods and services in the region.

Overall, this indicator tracks, at best, only one component of economic growth—new business formation.[40] Economic growth could also stimulate existing businesses to expand operations. The latter is not captured by the indicator, which is simply a count of total businesses in the ZOI. In fact, it is even possible that future economic growth could lead to a consolidation of operating businesses in certain segments in order to take advantage of economies of scale so that we could see a decline in business counts over time. Thus, this indicator should be used cautiously when making conclusions regarding the projects ability to promote business growth in the ZOI (further discussed in the data limitations section).

Methodology

With the resources available to collect this kind of data, the Study Team decided that a human count is necessary to assess the number of businesses in Keshim and Faizabad. The Community Development Officer (CDO) in Faizabad conducted a on-the-ground census of businesses by counting and marking the location of each one with a handheld GPS unit. For the purposes of this count, businesses were defined as any permanent or semi-permanent structure where goods or services were sold. For example, people selling fruit off of a blanket on the ground or a cart with wheels were excluded as these are likely to change location over time.

[37] Distances to the road are based on the shortest linear distance to the road and therefore do not reflect the actual paths or trails taken to reach the road.
[38] Distance to city (K or F) has not statistically significant effect on distance household members travel to sell their crops.
[39] Distance to destination village was in most cases unknown so distance was still undetermined in this case.
[40] It is also important to note that new business formation can be the result of many other factors other than the rehabilitated K-F Road, so even if there is an increase in the number of businesses, the problem of attribution remains.

Results

In total, the Study Team counted 2,299 businesses in Keshim and Faizabad post-project. Exhibit 18 shows the breakdown of business counts by location.[41] Compared to the count for the Mid-Point Study, there was a 28 percent decrease in the number of businesses. In some follow-up inquiries with the IRP CDO in that region, the Study Team learned that the mayors of both cities had closed down a substantial number of businesses. It is possible that the reduction in businesses seen here is in large part attributed to this closing of businesses.

Exhibit 18: Mid-Point and Post-Project Count of Businesses in ZOI

Location	Mid-Point Number of Businesses	Post-Project Number of Businesses
Keshim	1,132	967
Faizabad	2,080	1,332
Total	3,212	2,299

A post-rehabilitation decrease in business counts could also possibly be due to several other factors, some of which were mentioned in the "Rationale" section. As already mentioned, a reduction in the number of businesses does not necessarily imply that reduced transport costs have no effect on new business growth. Economic improvement could lead to more competition and smaller businesses may shut down as a result of larger business growth or new companies coming in. Monopolies are not likely given that reduced transport costs have likely increased competition. Even if some businesses shut down as a result of greater competition, it is not probable that such a large number of businesses (about 150 in Keshim and over 700 in Faizabad) would shut down within one year. There is a greater likelihood that most of the decrease in businesses is due to a combination of two primary factors – the previously mentioned businesses forced to close by the government and certain data limitations discussed in the following section.

Although the counts did not reveal the influx of new businesses as we expected, qualitative data findings confirmed that new road-side businesses (particularly, food service) had already started to establish along the road as a result of the road's completion. In interviews conducted on November 28, 2010,[42] new business owners stated that increased traffic along the new road created a greater demand by drivers and enabled new business growth to supply this demand. These new business owners observed not only a greater customer base but speedier and less expensive transport of their goods.[43] In turn, they were able to offer customers a greater variety of goods and better quality products. Interestingly, neither business owner is concerned about increased competition in the area and stated they look forward to a border road being built to support their business enterprise growth. Further discussion on business growth as a measure of economic improvement in the ZOI can be found in the following section on business monthly sales (Indicator 4).

Data Limitations

Local CDOs from Badakhshan conducted the business counts in an attempt to ensure that all known areas with businesses were included. However, it is likely that businesses that are not visible from known commercial areas were not included in the counts. The likely effect is a downward bias in the business count. Since this bias was present in the Mid-Point Study and the CDOs implemented the same counting technique in the Post-Project Study, we would expect this particular bias not to be found. In addition, the Post-Project

[41] The only businesses counted in the Post-Project Study along the K-F Road were those found along the stretch of road leaving Faizabad city center. These were still considered as part of the business counts for Faizabad.
[42] These interviews were conducted with two business owners – a 24-hour roadside restaurant at kilometer 13 of the road, and a small shop owner at kilometer 15 on the K-F Road.
[43] The shop owner reported it used to take him three hours by donkey to transport goods from Keshim. After the road's completion, it only takes him ten minutes by personal vehicle.

business counts were not able to be conducted in the same manner due to resource constraints. In the Post-Project Study, the CDO could not count the locations of businesses along the road or in villages away the road due to a transport issue where our CDO did not have a personal vehicle to reach the more remote areas. It is assumed that the most detectable change in the number of business and in particular new growth of businesses would be along the road (i.e., roadside restaurants and general stores for drivers) than in the cities themselves. Furthermore, if the CDO collecting the data did not include certain businesses or randomly conducted the counts on a certain day when most businesses are closed (e.g., non-market days, holidays, etc.) it could have affected the data and given us an under-representative sample.

4.2.4 INDICATOR 4: BUSINESSES MONTHLY SALES

Rationale

Rehabilitating the K-F Road is expected to increase economic activity due to decreased shipping costs and reduced travel times. Reduced transport costs should lead to new business opportunities and overall economic growth. Additionally, as reduced transport costs are reflected in lower prices of goods, the consumption of goods and services is likely to increase. It is expected that the ZOI will experience an increase in particular for transport-related businesses (e.g., service stations, auto parts, roadside food service).

Not all impacts of the road will necessarily lead to increased shopkeeper sales. Greater access to goods may result in increased competition from new entrants to the marketplace, which could lead to a decrease in revenue and potentially lower profit margins for some individuals. Therefore, any changes in the values that this indicator measures need to be interpreted cautiously and in light of other dynamics at work.

Methodology

The Study Team used the data from the Small Business surveys to determine the mean monthly sales for businesses within the K-F Road ZOI. The Small Business surveys also provided data on employment, use of the K-F Road, transport and other expenses. Information collected on sales in the previous six months provided the greatest number of valid responses and thus, was used for the analysis of median sales by business-type.

A total of 200 Small Business surveys ZOI-wide were conducted. The Study Team randomly selected 161 businesses based on GPS census data for all businesses in Faizabad, Keshim, and along the K-F Road alignment.[44] The Study Team used GPS data from the Post-Project business count to randomly select one business from every group of 25 businesses in both Keshim and Faizabad until 40 randomly assigned businesses were added to the sample.[45] Of all 200 businesses surveyed in the Post-Project Study, 174 surveys had valid responses to the income questions.[46] The number of valid responses decreased as the Study Team asked respondents to recall their business incomes in previous seasons (winter and spring).

Results

Exhibit 1 shows the mean and median sales by business categories and district in the last 6 months for both studies. Mean sales for all businesses in the Post-Project Study is 10,460 USD, with median business sales in the total study area at 5,277 USD. The Retail/Trade category makes up 69 percent of all small businesses with 119 observations, while there are only five restaurants sampled, all found within Faizabad district. In the Mid-Point Study, no restaurants were surveyed in the entire ZOI. The overall Post-Project Study mean total sales by businesses were reported as 15 percent higher in Faizabad than in Keshim, while median sales for Faizabad were 20 percent more than Keshim. It should be stressed here that this study is not claiming that this growth

[44] The GPS census from the Mid-Point Study business counts found 3,301 businesses within the ZOI.
[45] The Study Team decided to increase the sample size of the small business surveys due to a low response rate to the income questions and problems in the data collection for businesses outside Keshim and Faizabad in the Mid-Point Study. See the Data Limitations section for further explanation.
[46] There were twenty-two "Don't Know" responses.

in sales is due to the rehabilitated road. Establishing such causation lies outside the capability of this study. In what follows, the Study Team finds a reduction in transport costs that seems to suggest the road's indirect impact on business expenses.

Exhibit 1: Mid-Point and Post-Project Business Sales in Keshim, Faizabad,[47] and Total Study Area (USD)

District	Business Category	Mean Sales Last 6 months		Median Sales Last 6 months		Obs		% Change Sales
		Mid-Point	Post-Project	Mid-Point	Post-Project	Mid-Point	Post-Project	
Faizabad	Restaurants	$ -	$ 5,725	$ -	$ 3,220	0	5	100%
	Retail/Trade	$ 7,727	$ 10,060	$ 4,043	$ 4,472	30	84	23%
	Service	$ 11,778	$ 17,379	$ 8,724	$ 10,733	6	15	32%
	Small-scale Industry	$ -	$ 11,679	$ -	$ 6,440	0	7	100%
	Total	$ 8,402	$ 10,956	$ 4,492	$ 5,367	36	111	23%
Keshim	Restaurants	$ -	$ -	$ -	$ -	0	0	0%
	Retail/Trade	$ 8,770	$ 7,434	$ 4,942	$ 5,367	30	35	-18%
	Service	$ 359	$ 13,202	$ 359	$ 3,220	1	11	97%
	Small-scale Industry	$ 2,695	$ 11,837	$ 2,695	$ 4,472	2	15	77%
	Total	$ 8,147	$ 9,557	$ 4,492	$ 4,472	33	61	15%
Total Study Area	Restaurants	$ -	$ 5,725	$ -	$ 3,220	0	5	100%
	Retail/Trade	$ 8,249	$ 9,288	$ 4,492	$ 5,188	60	119	11%
	Service	$ 10,146	$ 15,612	$ 8,724	$ 4,919	7	26	35%
	Small-scale Industry	$ 2,695	$ 11,786	$ 2,695	$ 5,367	2	22	77%
	Total	$ 8,280	$ 10,460	$ 4,492	$ 5,277	69	172	21%

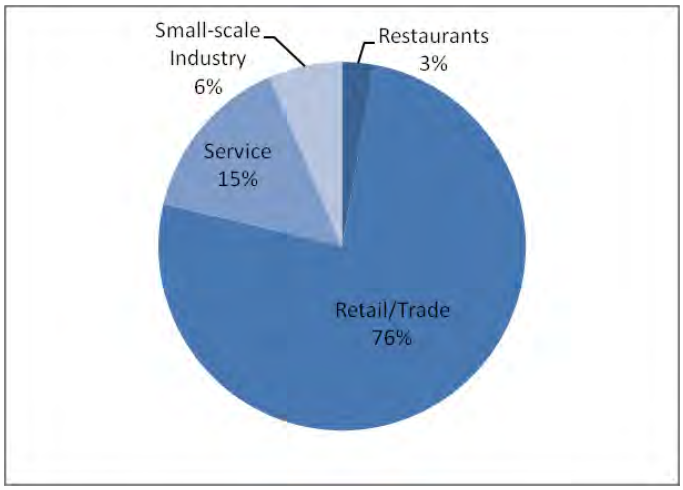
For the 119 Retail/Trade businesses that provided full answers to income and expense questions, mean transport costs amounted to 8 percent of mean total sales, while average total expenses are estimated at 13 percent of sales.[48] Among these businesses, the median transport cost in the Post-Project Study is one-third less than what they were in the Mid-Point Study. Overall median sales for Retail/Trade businesses increased by 15 percent, while median total business expenses decreased by almost 60 percent (see Exhibit 2).[49] The decrease in transport costs and increase in business sales are results we would expect due to the K-F Road's reconstruction; however, we cannot directly relate these changes to the road alone. Compared to the Mid-Point Study, the number of businesses surveyed in the Post-Project Study increased as did the number of respondents who were able to answer questions about business income and expenditures. This would exaggerate the increases we are seeing in the pre-post analysis for a particular business segment, especially for retail/trade businesses where the number of observations almost doubled in the Post-Project Study.[50]

[47] Data for Faizabad includes data for businesses located in Argo district.
[48] If median sales and expenditure figures are used, transport costs comprised 5 percent of sales and the proportion of total expenditures to sales equals14 percent.
[49] Mean and median comparisons draw different conclusions. According to Exhibit 1, the mean difference shows a post-project increase in total sales of 21 percent and the median difference shows a post-project increase of total sales of 15 percent. A closer look at the Mid-Point Study data reveals one outlier with a reported sales figure of 269,000 USD, which would pull the mean upward. We can confidently remove this observation since it is not particularly representative of the average small business. Additionally, there is an increase in the percentage of businesses in the Post-Project Study that have sales of 5,000 USD or more. In the Mid-Point Study, these businesses comprise of 38 percent of total business and in the Post-Project Study more than half of the businesses have sales above 5,000 USD. This supports our case that average total sales are increasing post-project.
[50] In the Mid-Point Study, there were 63 Retail/Trade businesses that responded to questions about business income and expenditures.

Exhibit 2: Mid-Point and Post-Project Business Sales in Total Study Area (USD)

The Study Team found a robust relationship between transport costs and small business income in the Post-Project Study.[51] Out of 198 businesses that gave responses to transport questions, 122 small businesses use the K-F Road to transport and receive goods, and ten of those businesses use both the K-F Road and other routes.[52] Exhibit 3 shows the breakdown of businesses in the Post-Project Study that used the K-F Road to transport and receive their goods.

Exhibit 3: Post-Project Businesses That Use the K-F Road to Transport Goods



Use of the K-F Road to transport and receive goods among businesses in the Post-Project Study demonstrated a robust relationship so that use of road predicts a decrease in transport costs by 83 percent. In the Mid-Point Study, the relationship between K-F Road use and transport costs is also a statistically significant negative relationship; however, the effect on transport expenses is less (at 49 percent). Overall, the rehabilitation of the K-F Road is correlated with lower transport costs by 34 percent.[53] It is reasonable to assume that a substantial portion of this decrease in transport costs is attributable to the road, which will have a growing impact on business income over time.

[51] A one percent increase in transport costs would yield a 0.55 percent increase in small business total income (p=.000).
[52] The majority of other routes reported are routes to Kabul, Kunduz, Mazar, and Takhar.
[53] Using the K-F Road does not have a statistically significant impact on small business income (p=.335) or total sales in the last 6 months (p=.261).

Data Limitations

Enumeration issues in the Mid-Point Study limited the Study Team's analysis of business income, business cost profiles, and road usage to only those businesses located in Keshim or Faizabad, as discussed earlier in regards to sampling designs. Given that the prevalence of businesses in the ZOI is higher in the two main cities and that the road's impact will be most directly felt in them, this should not pose too great a problem for the findings. A greater challenge in determining changes to business incomes is that those changes in business transport costs and road usage costs are most likely underestimated since the "baseline" data were collected when 50 percent of the road had already been rehabilitated.

Businesses founded less than six months prior to when this study was conducted would not be able to answer retrospective questions about income or sales. Although this could pose a problem for the comparison analysis, it is not likely to have significant effect given that there were only eight businesses surveyed in the Post-Project Study that were founded in 2010. [54]

A final limitation in our pre-post comparison is that the response rates increased tremendously in the Post-Project Study. In the Mid-Point Study, about 46 percent of respondents gave answers regarding sales in the last 6 months, with an even lower number of responses to retrospective questions for summer and winter income. Responses for total expenditures and transport costs in the Mid-Point Study also had a lower than expected number of valid responses.[55] In the Post-Project Study, 86 percent of respondents were able to give answers for all questions regarding business sales, total expenditures, and transport costs. This would bias the data so that the Post-Project analysis would be more representative of the ZOI population's business incomes since much of the data from the Mid-Point Study is invalid and perhaps overestimate the changes observed.

4.2.5 INDICATOR 5: HOUSEHOLD INCOME

Rationale

Household income is an important indicator to track trends in economic development. With the improvement in road conditions, the Study Team expected to see a general increase in household incomes across the ZOI due to improved access to markets and increased economic activity from decreased transport costs, although it is expected that this effect will be realized only gradually over time. The construction of the road also brought temporary jobs to the local economy. Thus, the Study Team investigated this as another factor in increased household incomes due to an increase in employment opportunities.

Methodology

The Study Team collected information on household incomes from the household surveys. We calculated income as the total cash earnings from crop and livestock sales, non-farm cash earnings, and non-cash payments received. Households providing inconclusive and invalid responses were excluded from the analysis. Additionally, the Study Team collected information on total household expenditures to provide a reference point for total reported income. Total expenditures include both goods and services. Due to the variability in reported household incomes, median income is reported.

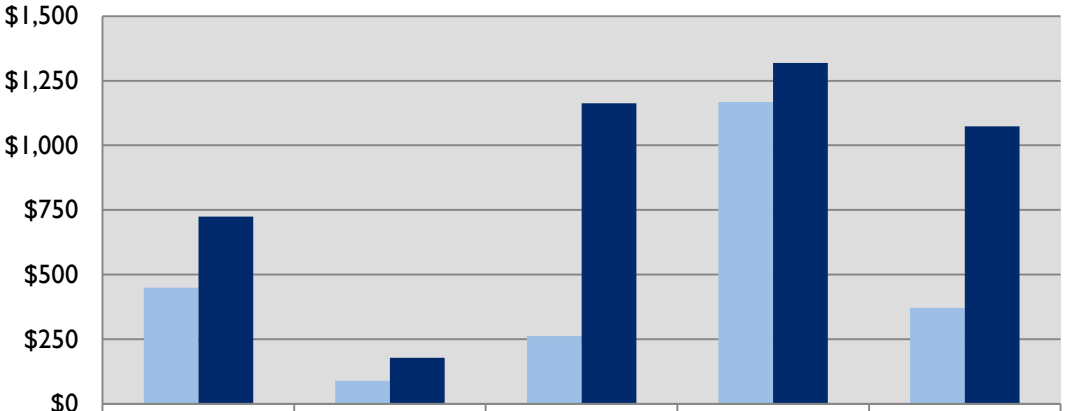
Results

Of the 467 households surveyed in the Post-Project Study, approximately 64 percent provided information on income. Only those households reporting some level of income were used to calculate median household income.[56] The Post-Project analysis found that total median household incomes have increased nearly threefold since the Mid-Point Study, from 371 USD to 1,073 USD. Median household incomes across all

[54] Due to the design of the Small Business Instrument, there was only one question that would gather the information of when the business started. This question only asked what year the business was founded, not the date or month.
[55] In the Mid-Point Study, only 120 of 196 observations for total expenditures and 92 out of 196 responses for transport costs were valid.
[56] Any household reporting an income of zero was not included in the analysis.

income source categories increased since the Mid-Point Study, with household incomes from only non-farm sources showing the most significant increase (see Exhibit 19). Households that generate income from mixed sources reported the highest median income in both the Mid-Point Study and the Post-Project Study.[57]

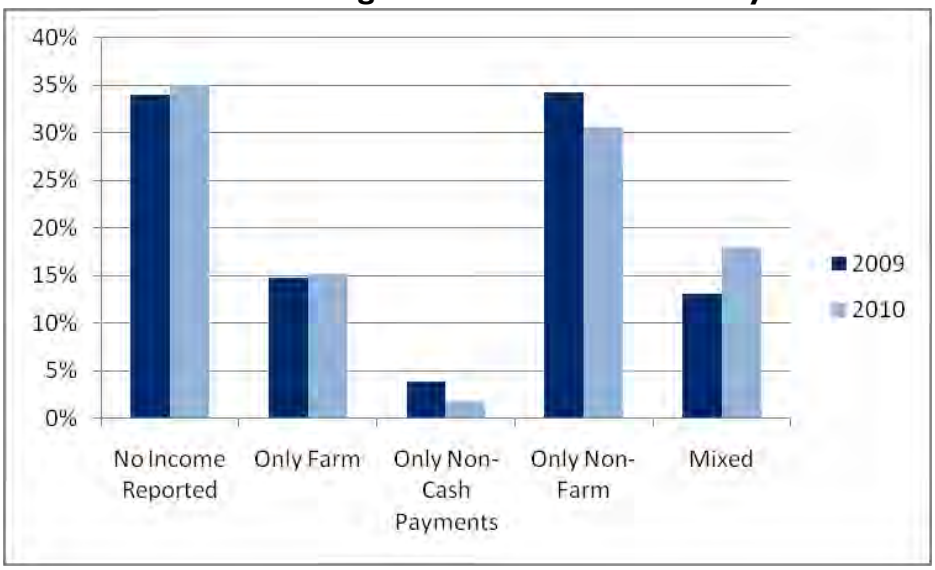
Exhibit 19: Median Annual Household Income by Income Source



	Only Farm	Only Non-Cash Payments	Only Non-Farm	Mixed	Total
2009	$449	$90	$262	$1,168	$371
2010	$724	$179	$1,163	$1,319	$1,073

In the Post-Project Study, when households were queried about income sources, over one-third of households did not report any source of income in both studies (see Exhibit 20). The majority of the households that did report income reported it from a single source. Of these households, the most common was non-farm income (31 percent in the Post-Project Study and 34 percent in the Mid-Point Study), followed by only farm income (15 percent in both studies). Those reporting income from mixed sources increased from 13 percent in the Mid-Point Study to 18 percent in the Post-Project Study.

Exhibit 20: Percentage of Household Income by Source



[57] Income categories according to the following: "Farm" income includes sales from selling crops and/or livestock; "Non-Cash Payments" represent any in-kind payments for any activities, including selling crops; "Non-farm" income includes income from sources other than farm; "Mixed" represents income generated from at least two of the other income sources (farm, non-cash, and/or non-farm).

Households earning larger incomes have increased in the Post-Project Study. Households earning less than 1 USD per day decreased by 18 percent from the Mid-Point Study to the Post-Project Study (see Exhibit 21). Notably, the percentage of families earning 2 USD to 8 USD per day increased 11 percent since the Mid-Point Study. Overall, households earning about one dollar or more per day increased from 33 percent in the Mid-Point Study to 49 percent in the Post-Project Study. This is a promising indication that household incomes are increasing across the ZOI. However, this result is no doubt a variety of factors at work and not directly attributable to the road. It is credible that the road is one of these factors and its impact on income growth will increase over time.

Exhibit 21: Daily Household Income Distribution (percentage of households)

	Mid-Point	Post-Project
Reported No Income	34%	35%
Less than 1 USD	33%	15%
1 to 2 USD	10%	11%
2 to 8 USD	20%	31%
8 to 16 USD	2%	5%
Over 16 USD	1%	2%

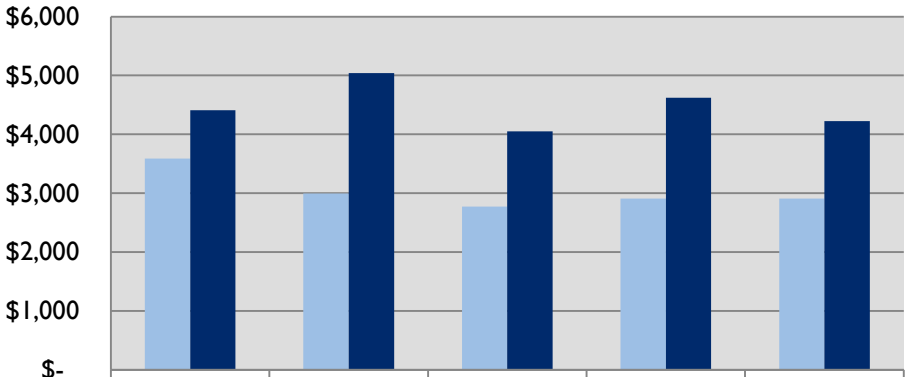
The Study Team was also able to use the data to discern other factors related to income. The percentage of workers using the K-F Road to commute to work increased from 17 percent in the Mid-Point Study to 29 percent in the Post-Project Study. The data indicates that household incomes are on average 374 USD higher for families who use the K-F Road to commute to work than those who do not.[58] Possible explanations for this increase are greater employment opportunities, decreased travel times resulting in increased working hours, and/or people's willingness to commute longer distances for higher paying jobs. In the Post-Project Study, the Study Team found proximity to the road, distance from a terminal city (Faizabad in particular), total travel distance (to and along K-F Road) to Faizabad, and number of adults in the household all to be significant predictors of total income.[59] The relationship between households having one or more members employed to work on the K-F Road and household income is statistically insignificant, thus reducing the chance that new jobs created due to the road's construction had an effect on the income profile the data has generated.[60]

Income is an indicator can be easily misreported by the respondent.[61] Therefore, the Study Team considered changes to household expenditures as a proxy for household income.[62] Total annual household expenditures include monthly expenses (for example, soap, electricity, public transportation, etc.), as well as annual expenses such as clothing, school fees, and housing rent.[63] Exhibit 22 shows an increase in median annual expenditures by 45 percent, from 2,906 USD in the Mid-Point Study to 4,223 USD in the Post-Project Study. Median household expenditures increased across all income categories, ranging from 23 percent for only farm income to 68 percent for income from only non-cash payments. Interestingly, 65 percent of households in the Mid-Point Study and 52 percent of households in the Post-Project Study reported lower total annual incomes than total annual expenditures. This is most likely due to bias towards over-reporting expenditures and/or

[58] Use of the K-F Road to commute to work is slightly statistically significant to income in the Post-Project Study (p = 0.083).
[59] Proximity to road has a negative relationship to income so that the further a household resides from the road, the lower their income (p = .023). Not surprisingly, distance from the nearest city is also a negative relationship to income so that households living further away from Keshim (p = .001) or Faizabad (p = .000) have lower incomes. Number of adults living in the household is positively correlated with income (p = .036) so that the more working-age household members, the higher the household income.
[60] Thirteen respondents in the Mid-Point Study and twenty-nine respondents in the Post-Project Study reported having one or more households members employed to work on the K-F Road.
[61] Respondents were asked to estimate income retrospectively for the previous 12 months.
[62] The Study Team found that total annual expenditures predicts total annual incomes in a positive manner, so that as expenditures increase household income also increase (p = .000).
[63] In-kind payments were included in the calculation of total annual income, but had no impact on median expenditures.

under-reporting income. Respondents might also have difficulties with annual estimations when reporting expenditures.

Exhibit 22: Median Annual Household Expenditures



	Only Farm	Only Non-Cash Payments	Only Non-Farm	Mixed	Total
2009	$3,590	$2,994	$2,775	$2,906	$2,906
2010	$4,411	$5,042	$4,052	$4,622	$4,223

Finally, although we see more households growing and selling crops in the winter, this is not necessarily a direct seasonality correlation. It could imply issues with giving retrospective answers; or, could be related to geographic differences between spring and winter sampling points. In the Mid-Point Study, the spring sampling points were more remote households, in more mountainous terrain that limits plot size, resulting in a greater concentration of subsistence farming. The remoteness of these households also limits the number of markets where producers can sell goods. There is no correlation between crops grown in winter as being more cultivatable than in the spring so it is not biasing our incomes for winter sampled households in any way.

Data Limitations

Data limitations exist due to the number of respondents that failed to provide income information, a problem that is fairly standard in such studies. Such refusals to respond can be due to a variety of reasons: shame of reporting low levels of income, fear of information being used by government for taxes, etc. Also, differences in the Mid-Point Study between the data collected in the spring and winter must be considered. In general, sampling in the spring versus the winter showed a reasonable influence on reported income and expenditures. The Study Team found a statistical significance of seasonality on farm income, in-kind payments, annual expenditures and total crops sold, all of which were found to be greater in data collected in the winter versus spring.[64] In particular, about 41 percent of spring respondents reported growing crops, of which only 4 percent reported selling crops. In comparison, about 67 percent of winter respondents reported growing crops, of which 21 percent reported selling crops. This is likely related to geographic differences between spring and winter sampling points. In the Mid-Point Study, the spring sampling points were more remote households and they were located in more mountainous terrain that limits plot size, resulting in a greater concentration of subsistence farming. The remoteness of these households also limits the number of markets where producers can sell goods.[65]

[64] Statistical significance levels for each are: farm income (p = .013), in-kind payments (p = .031), annual expenditures (p = .000) and total crops sold (p = .019).
[65] There is no correlation between the types of crops grown in the winter being more cultivatable than the types of crops reported being grown in the spring. Therefore, we know that this is not biasing our incomes for winter sampled households in any way.

4.2.6 INDICATOR 6: VEHICLE OPERATOR COSTS

Rationale

Roads in poor conditions increase operating and maintenance costs on the vehicle operators using them. Accelerated wear and frequent breakdowns are common problems; and vehicles consume more fuel while travelling on rough and degraded roads than on paved roads. The high maintenance, repair, and fuel costs borne by the vehicle operator are ultimately built into passenger fares and the price of freight shipments. Rehabilitation of the K-F Road is expected to reduce costs to vehicle operators. This will over time increase the variety of consumer goods while lowering the prices of these goods. Reduced transport costs will also allow producers to be able to ship their goods more cheaply which will make them more competitive.

Methodology

The Study Team measured the median monthly cost for operating a vehicle using the K-F Road. Vehicle operator costs (VOCs) are defined as the sum of monthly fuel, maintenance, and repair costs, all of which were collected in the Vehicle Operator survey instrument. In addition, the Study Team asked vehicle operators about their use of the K-F Road, including frequency and kilometers driven on the road during the previous month. These data were then used to measure VOCs per kilometer traveled on the K-F Road. Finally, the Study Team used data on number of households owning a motorized vehicle to detect changes in vehicle ownership among households and vehicle operators. This was collected based on a question asked in the Household survey instrument.

Results

One hundred and forty-five vehicle operators from the Mid-Point Study and 199 vehicle operators from the Post-Project Study fully responded to questions regarding their VOCs for the previous month. The median VOC for the average vehicle operator decreased 30 percent from 783 USD in the Mid-Point Study to 552 USD in the Post-Project Study.[66]

Exhibit 23 disaggregates VOCs for both the Mid-Point and Post-Project studies into two categories: cost of maintenance and repairs and cost of fuel by vehicle type. While average VOCs decreased 30 percent between the Mid-Point and Post-Project studies, repair costs, fuel costs, and VOCs did increase across some vehicle types. Since VOCs only consider total maintenance, repair, and fuel costs from the previous month and do not take into account K-F Road use, the Study Team conducted additional analysis to gain a better understanding of vehicle operating costs per kilometer driven.[67]

Exhibit 23: Vehicle Operating Costs by Vehicle Type

All Vehicles**	Mid-Point				Post-Project				Average VOC % Change
	Median Cost of Repairs	Median Cost of Fuel	Median Total VOCs	Average VOC*	Median Cost of Repairs	Median Cost of Fuel	Median Total VOCs	Average VOC*	
Personal Vehicles	$ 108	$ 174	$ 305		$ 125	$ 247	$ 411		
Trucks	$ 422	$ 1,527	$ 2,043	**$ 783**	$ 358	$ 716	$ 1,163	**$ 552**	**-30%**
Multi-Use Vehicles	$ 90	$ 180	$ 359		$ 233	$ 358	$ 796		
Total	$ 126	$ 198	$ 368		$ 179	$ 358	$ 537		

* Average VOCs are calculated by weighting median VOCs to traffic counts.

[66] Median VOCs were weighted with average traffic counts from October 2009 and January 2010 for the Mid-Point Study and from October 2010 and January 2011 for the Post-Project Study to calculate the average VOC for all vehicles. The Study Team recalculated the average VOCs from the Mid-Point Report to be weighted by traffic counts for this report.

[67] The original survey instrument did not include a question asking drivers how many total kilometers they drive on all roads. Therefore, total kilometers driven on the K-F Road were used as a proxy and only those drivers who use the K-F Road on a frequent basis were included in this section of the analysis. Frequent K-F Road users are defined as operators who reported travelling on the road at least four times in the previous month, and traveled from 800 kilometers (the equivalent of approximately one round trip between Keshim and Faizabad per week) up to 5562 kilometers (equivalent to 26 times a month, not including Fridays).

** Personal Vehicles include all cars, 4-wheel drive vehicles, and pick-up trucks; Trucks include 2-axle and 3-axle trucks; and Multi-Use Vehicles include buses, mini buses, and vans.

Vehicle operating costs per kilometer driven on the K-F Road (VOCs per KM) for frequent K-F Road users[68] decreased by 21 percent, from 0.23 USD per kilometer in 2009 to 0.18 USD per kilometer in 2010 (see Exhibit 24).[69] VOCs per KM decreased substantially for trucks and multi-use vehicles, but remained relatively stable for personal vehicles at approximately 0.18 USD per kilometer. This could be due to a perceived increase in the cost of fuel.[70] Respondents in the Post-Project Study reported a liter of fuel to cost roughly 12 percent more than what respondents reported in the Mid-Point Study. The increase in cost of fuel places upward pressure on VOCs for all vehicle types in the Post-Project Study. Given the increase in reported fuel prices, the data indicate that VOCs per KM for frequent K-F Road users have decreased across all vehicle types since the road's rehabilitation.

Exhibit 24: Vehicle Operating Costs per Kilometer of K-F Road Driven

	Mid-Point		Post-Project		Percent Change
	Median	Obs.	Median	Obs.	
Personal Vehicles	0.18	18	0.18	55	-1%
Trucks	1.68	2	0.72	1	-57%
Multi-Use Vehicles	0.25	8	0.16	5	-34%
Total	**0.23**	28	**0.18**	61	**-21%**

Looking at vehicle ownership from the Mid-Point Study to Post-Project Study, the percentage of households owning one or more vehicles increased by two percent (from two to four percent) while vehicle operators increased their vehicle ownership by nine percent (from 76 to 85 percent). Increased vehicle ownership found in the villages and among drivers on the road might indicate a number of things that may or may not be directly attributable to the road; for example, increased incomes to afford maintaining and operating a vehicle, greater access so villages can have their own car for local use, decreased VOCs and travel expenses makes owning a car less expensive, etc.

Data Limitations

Unfortunately, the only data collected via the Vehicle Operator survey instrument was total kilometers traveled on the K-F Road. The survey did not collect information about other roads drivers may be traveling on. Therefore, they would only answer total distance traveled for the whole trip or just the part of the trip traveled on the K-F Road. Originally, the Study Team designed the indicator for vehicle operating costs to include total VOCs without adjusting for non-KF Road behavior, such as kilometers driven on other roads and/or the percentage of time spent traveling on the K-F Road compared to other roads. Although this would bias reported VOCs to include non-KF roads, the bias is eliminated since the same method was employed in both the Mid-Point and Post-Project studies. Furthermore, to help mitigate this issue, the Study Team created a measure for VOCs per KM as a consistent unit of measurement across time.

4.2.7 INDICATOR 7: TRAVEL TIMES

Rationale

Rehabilitation of the K-F Road is expected to reduce overall travel times along the road. The smoother roadway and improved design will allow for more comfortable travel and less vehicle wear at higher speeds.

[68] See preceding footnote for how "frequent driver" is defined.
[69] These values are not weighted to traffic counts due to the limited number of observations in some categories.
[70] Fuel prices are reported by respondents in the Vehicle Operator survey interview. Therefore, we are not certain these reported fuel prices accurately reflect fuel prices in the region. As the cost of fuel is self-reported, it is possible a respondent's answer may be influenced by his own perception or experience.

To track this effect, we measured travel times between Keshim and Faizabad as an indicator of road improvement.

Methodology

The Study Team surveyed vehicles that carry passengers for hire, inquiring about the duration of the trip in a context that replicated an actual passenger-operator interaction. We calculated mean travel times for two service types: buses and taxis/personal vehicles.[71] For buses and taxis, enumerators conducted the surveys in bus stations or taxi stands in or near Keshim and Faizabad, such as bus stations or taxi stands. In order to estimate an overall measure of travel times across different modes of transportation, mean trip durations were weighted based on the actual flow of vehicles or traffic counts.[72] These weighted travel times are referred below as "true mean passenger travel time". The Study Team counted the number of vehicles traveling from Keshim to Faizabad on a weekly basis and then used the average occupancy of each vehicle to calculate the true mean passenger travel time.[73]

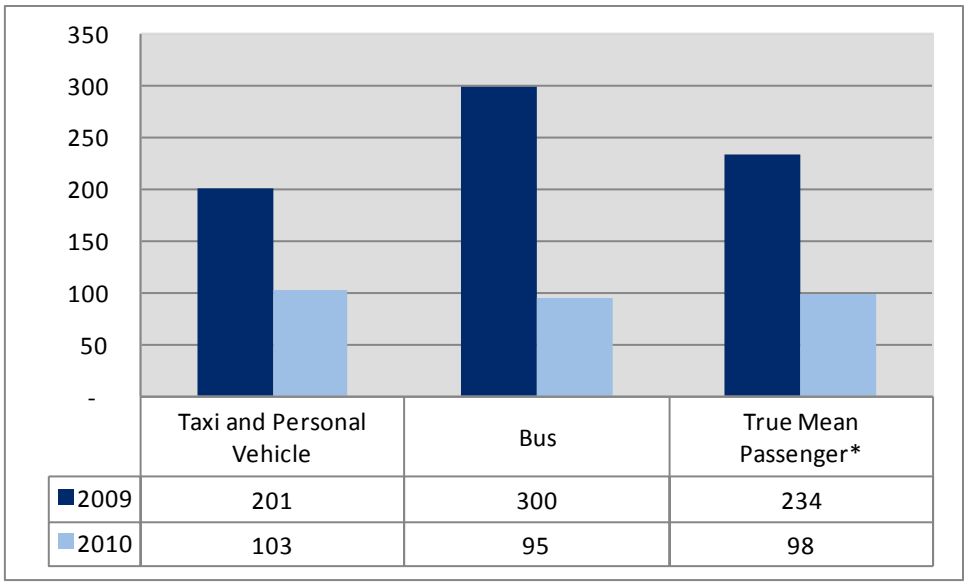
Results

In 2007, prior to any construction done on the road, it took buses 480 minutes and taxis 360 minutes to travel the length of the K-F Road. Exhibit 25 shows the mean travel times between Keshim and Faizabad from the Mid-Point Study and Post-Project Study. Travel times have significantly decreased across both modes of transportation since the Mid-Point Study. The mean travel time of the "true mean passenger" decreased from 234 minutes in 2009 to 98 minutes in 2010 (by 58 percent). Travel by bus and taxi/personal vehicle fell by 68 percent and 49 percent, respectively.

Travel times in the Mid-Point Study were recorded after the road had already been 50 percent paved so much of the changes in travel speed had already taken place. Therefore, the data displayed in the graph below significantly underestimate the actual changes in travel times pre- and post-rehabilitation. Based on our "baseline" travel times recorded in 2007, the Post-Project Study reveals a reduction in bus and taxi mean travel times by 80 percent and 71 percent, respectively.

[71] In Badakhshan, it is very common for personal vehicles to pick up passengers along the route to their destination and charge them a fee for riding along. Because there are no registered taxis in the ZOI and no way for the enumerator to physically distinguish a personal vehicle carrying paying passengers from a taxi, the two types of vehicles were combined in data analysis.
[72] Traffic counts were conducted in October 2009 and January 2010 for the Mid-Point Study and in October 2010 and January 2011 for the Post-Project Study. Only traffic counts from Keshim were included in this analysis due to data collection issues on the Faizabad side of the road in January 2011.
[73] In the Paid Passenger survey instrument, ever driver stopped along the road, was asked about the number of passengers traveling in the vehicle.

Exhibit 25: Mean Travel Times between Keshim and Faizabad (minutes)



	Taxi and Personal Vehicle	Bus	True Mean Passenger*
2009	201	300	234
2010	103	95	98

*True mean passenger travel time is weighted based on traffic counts and average passenger capacity for each vehicle type on the road.

Data Limitations

It is quite unexpected that it would take buses eight minutes less time on average to travel between Keshim and Faizabad than taxis/personal vehicles in the Post-Project Study. One possible explanation is that taxis/personal vehicles are traveling just beyond the terminal cities and/or to nearby villages or cities, whereas buses are traveling more direct routes from one major city terminal to the other.[74] Taxis/personal vehicles might be making a few more stops along the road to drop passengers off as well. Both studies revealed relatively small sample sizes of buses compared to other types of vehicles (between 9 and 10 percent for both studies) which could have distorted our results slightly for bus mean travel times.[75]

There were also certain limitations due to survey design. For example, respondents were only given two options for destination: Keshim or Faizabad. Thus, the respondent's *direction* rather than true *destination* was recorded. As a result, the Study Team was unable to determine which respondents were traveling only the length of the K-F Road based on reported travel times alone. For example, if a driver reports a travel time of 9 hours in 2010, he was likely traveling to Kabul and should be excluded from the analysis. Similarly, if a driver reported traveling only 30 minutes, we know that that particular vehicle did not complete a full K-F trip. For the vehicle traveling to Kabul from Faizabad, it is highly likely that 103 km of the trip is spent on the K-F Road; however, we do not know exactly how much of the travel time is on the K-F Road. Thus, in order to capture travel times for vehicles traveling only the full length of the K-F Road, the Study Team included only surveys with travel times between 120 and 330 minutes for the Mid-Point Study and 90 and 120 minutes for the Post-Project Study.[76] Without this limited index, our results would include drivers not driving the full length of the road and could bias our results in either an upward direction.

[74] Data on vehicles traveling to destinations other than either ends of the K-F Road were not recorded in either study.
[75] Thirty-seven percent (or seven buses) from the Post-Project Study and all 8 buses from the Mid-Point Study were considered as 'minibuses' if they reported carrying fewer than twenty passengers. The Study Team established the threshold for minibus in the Gardez-Khost Baseline Study. In order to preserve continuity, the Team decided to use the same categorization in both studies in order to minimize the bias. This categorization for buses is also used in the next section on Passenger Fare Costs (Indicator 8).
[76] Although this index may be imposed by the Study Group, it was selected based on the range in data and number of outlier found. When certain cutoffs were determined by outliers (either extreme high or low travel times), we could then safely assume that the majority of K-F trips were captured in the determined ranges. Furthermore, even without these parameters imposed, mean travel times between Keshim and Faizabad for all modes of transportation decrease from the Mid-Point Study to the Post-Project Study.

4.2.8 INDICATOR 8: PASSENGER FARE COSTS

Rationale

Rehabilitation of the K-F Road is expected to lower travel times and operating costs for travel, thereby reducing the overall cost of providing passenger transport services between Keshim and Faizabad. As such, reduced passenger fare costs are an indicator of improvements in the K-F Road. This indicator also serves as a good proxy for the impact of the road on VOCs. As discussed earlier, it is difficult to clearly assess to what extent reductions in VOCs are due to the K-F rehabilitation or to what extent other factors are at play. Assuming a competitive transport market, decreases in VOCs should be passed down to the consumer. Since fare costs can be determined more easily for a particular road segment, this makes the direct impact of the road more easily discernible.

Methodology

The Study Team surveyed vehicles that carry passengers for hire, inquiring about the cost of a passenger trip in a context that replicated an actual passenger-operator interaction. Mean passenger fare costs were calculated for two service types: buses and taxis/personal vehicles.[77] Fares considered are for trips between Keshim and Faizabad and measured for both directions. Enumerators conducted the surveys at bus stations or taxi stands (or other commonly known departure points) in or near Keshim and Faizabad. In order to estimate an overall measure of fare costs across different types of vehicles, the Study Team combined mean fare costs into a weighted value based on traffic counts that recorded the weekly frequency of different vehicle types,[78] and typical occupancy of each vehicle type as determined from the Paid Passenger survey instrument.

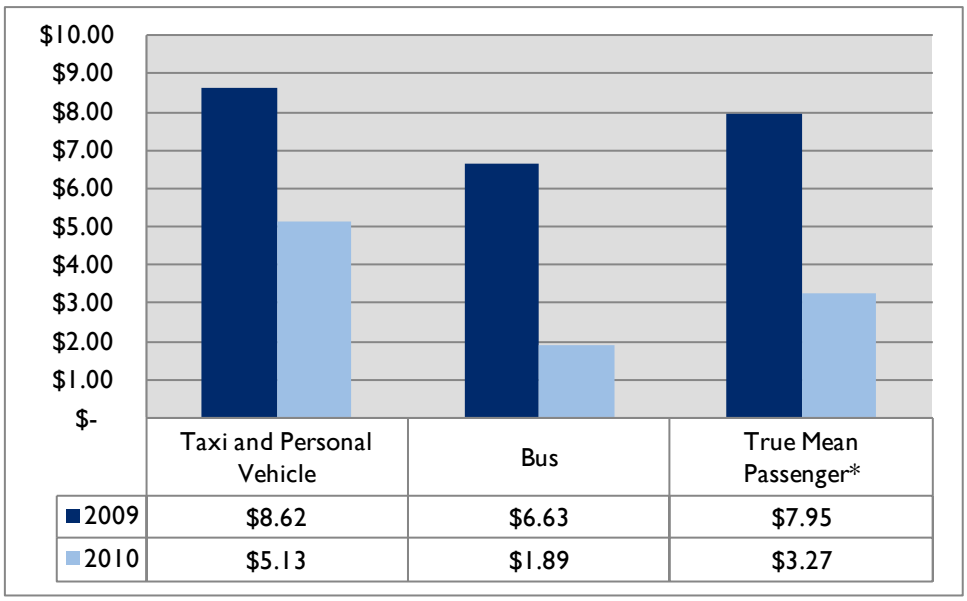
Results

Passengers reported lower fares between the two terminal points of the K-F Road in the Post-Project Study. As shown below in Exhibit 26, the true mean passenger fare cost decreased by 59 percent, from 7.95 USD in 2009 to 3.27 USD in 2010. Passenger fares for bus demonstrated the most significant decrease, with average fares dropping by 71 percent.[79] These sharp drops in passenger fare costs are likely the result of lower vehicle operator/repair costs due to the improved road. The increased traffic along the road has also likely increased vehicle operator competition, thus placing downward pressure on passenger fare prices.[80]

Overall, the results indicate that the rehabilitation of the K-F Road significantly reduced passenger fare costs for all modes of transportation traveling between Keshim and Faizabad. As already stated in other sections, the values asserted her significantly understand actual fare reductions since the comparison is between the completed road and the road after 50 percent construction completion. Reductions in passenger fares will over time generate secondary benefits, such as increased market access, reduced prices of consumer goods, and increased access to social services.

[77] See previous section (Indicator 7) for further explanation on why taxis and personal vehicles are classified together.
[78] For more information, see section Travel Time and Traffic Volume in 4.3.2 Assessment of Road Impacts to Date.
[79] Post-Project Study data shows full-sized bus travel costing 9 percent more than travel by minibus (i.e. buses with fewer than 20 passengers. See previous section on Indicator 7 for more information on bus classifications. However, this variation in mean passenger fare cost is statistically insignificant.
[80] The number of cars and buses on the K-F Road increased by 145 percent and 72 percent, respectively, since the Mid-Point Study. Furthermore, buses (not including minibuses) accounted for just 0.1 percent of all traffic on the K-F Road at the time of the Mid-Point Study, while in the Post-Project Study, buses account for nearly 2 percent of all traffic (equivalent to about 128 buses per week).

Exhibit 26: Mean Passenger Fare Cost Between Keshim and Faizabad



	Taxi and Personal Vehicle	Bus	True Mean Passenger*
2009	$8.62	$6.63	$7.95
2010	$5.13	$1.89	$3.27

*True mean passenger fare is weighted based on traffic counts and average passenger capacity for each vehicle type on the road.

Data Limitations

Data limitations for this indicator are similar to those of Indicator 7 (Travel Times) and are discussed in the previous section. Namely, survey design limitations required established parameters for travel times on the K-F Road in order to include only those vehicle operators surveyed who were traveling the length of the road.

4.2.9 INDICATOR 9: FREIGHT COSTS

Rationale

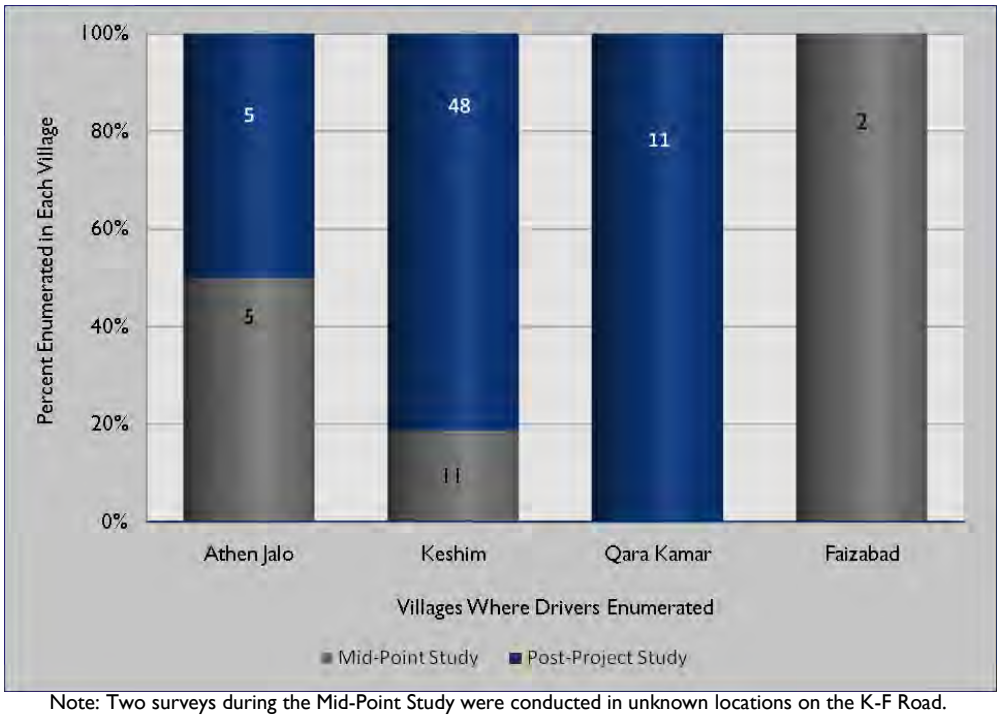
An improved road should lower vehicle operating costs (VOCs), such as fuel and maintenance expenses, which lowers freight shipment costs. This in turn should stimulate economic growth by creating new business and trade opportunities and through making goods that are already shipped by road cheaper. New businesses should be able to enter the marketplace because the barriers to entry should diminish with decreases in VOCs. Increased trade opportunities for those using the K-F Road will result from a drop in the cost of goods and lower shipping costs.

This indicator measures the cost per ton per kilometer for commercial freight shipped by trucks via the K-F Road, which is only one component of a road's rehabilitation. Lower shipping costs should allow existing businesses to be able to expand their consumer-base locally and regionally by shipping products to areas where the goods being shipped are scarce and may sell at a higher price. Furthermore, over time, business growth could lead to reshaping the marketplace so that businesses are able to reach economies of scale.

Methodology

Enumerators queried freight trucks along the length of the K-F Road traveling both to and from Keshim and Faizabad cities. Exhibit 27 illustrates the locations and number of drivers enumerated for both the Mid-Point and Post-Project studies. In total, the Mid-Point Study surveyed 33 freight drivers and the Post-Project Study surveyed 81. The surveys asked questions regarding shipment weight (in tons), trip distance, travel time and cost of shipping. Analysis includes only those freight trucks traveling the K-F Road and driving 80 to 180 kilometers and/or those trucks that reported their origin or destination as Keshim or Faizabad.

Exhibit 27: K-F Road Mid-Point and Post-Project Study Enumeration Points



Note: Two surveys during the Mid-Point Study were conducted in unknown locations on the K-F Road.

Results

The average cost per ton per kilometer in the Post-Project Study was 0.17 USD, down from an average cost of 0.27 USD in the Mid-Point Study, which constitutes a 36 percent reduction. Mean travel times from one terminal of the K-F Road to the other terminal decreased by about 4 hours from the Mid-Point Study to the Post-Project Study (see Exhibit 28). The increased mean tonnage observed also likely leads to lowered freight costs, further discussed below. The traffic counts data discussed in a later section show a dramatic increase in freight truck road usage, which further corroborates these findings as lowered transport costs from the improved K-F Road result in increased demand for freight shipments.

Exhibit 28: Mid-Point and Post-Project Freight Truck Cost per Ton per Kilometer

	Obs	Mean Cost per Ton per KM	Mean Tons per Freight Truck	Mean Time (H:MM)
Mid-Point	20	$0.27	15.5	8:08
Post-Project	64	$0.17	18.8	3:59
% Change		-36%	21%	-51%

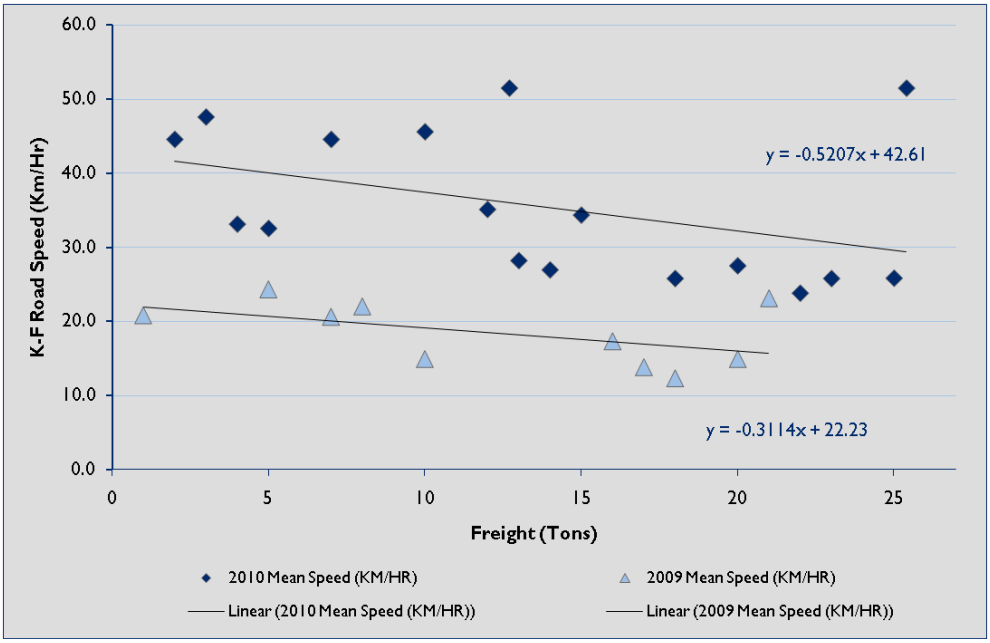
The Study Team analyzed kilometers per hour for both studies and compared speeds to freight tonnage shipped via the K-F Road. The Study Team also found that mean speeds for freight trucks traveling on the K-F Road increased by 79 percent, from 16.8 Km/Hr to 30.1 Km/Hr (see Exhibit 29). Based on our traffic counts data, we found a significant increase in 2-axle trucks post-rehabilitation. These trucks are easier and less expensive to operate than 3-axle trucks, which are fitted for rough terrain. Thereby, while the amount of freight traveling on the road increases (on average from about 16 tons to 19 tons) these trucks are able to travel at faster speeds with lower transport costs when the road is in good condition.

Exhibit 29: Mid-Point and Post-Project Freight (Tons) and Speed (KM/HR)

Inputs to Cost of Freight per KM	Mid-Point Study	Post-Project Study	Percentage Change
Mean Freight (Tons)	15.5	18.8	21%
Median Speed (KM/HR)	17.1	25.8	51%
Mean Speed (KM/HR)	16.8	30.1	79%

The trends illustrated in Exhibit 30 provide a good approximation of movements in cost per ton per kilometer as well as freight volumes on the K-F Road as result of increased speeds. The following Section on Indicator 10: Freight Volume provides further analysis on freight volume in the context of actual traffic flow on the K-F Road.

Exhibit 30: Mid-Point and Post-Project Freight Tons and Truck Speeds (Km/Hr)



Data Limitations

The low number of observations in the Mid-Point Study made it difficult to detect a statistically valid change in this indicator. The sampling technique replicated for both Mid-Point and Post-Project studies may not be representative of freight truck travel in regards to direction, time of day, or other times of year. However, since the methods employed in the Mid-Point Study were replicated in the Post-Project Study, any bias would not affect our results.

In both studies, some drivers did not respond to each question in the survey instrument necessary to calculate the cost per ton per kilometer for commercial freight traveling the K-F Road. As a result, the Mid-Point Study analysis excluded 13 observations and Post-Project Study analysis excluded 17 observations due to non-response. The non-response rate where drivers stopped but data collection was incomplete for the Mid-Point

Study was 43 percent while in the Post-Project Study, non-response was 16 percent. Overall, these data issues constrained Mid-Point analysis more than Post-Project Study analysis.[81]

4.2.10 INDICATOR 10: FREIGHT VOLUME

Rationale

As described in the rationale for Indicator 9, an improved K-F road should reduce freight costs. If reduced freight costs indeed stimulate new business opportunities and economic growth, this should be evident in an overall increase in the volume of freight travelling the K-F road. This growth may result from new demand for currently traded goods and services, for example, transport-related businesses such as fuel stations, mechanics, and vehicle suppliers. Additionally, there is an expectation that increased economic activity will spur growth in the region's per capita income creating employment opportunities and new business creation.

Methodology

Enumerators interviewed freight truck drivers traveling in both directions on the K-F Road near Keshim, Faizabad, and about halfway between the road's terminal points. The Freight Truck Survey Instrument contained questions about freight shipment (tonnage), trip distance, travel time, and shipment cost. The Study Team first calculated the mean cargo weight in tons as reported. Then, to estimate freight volumes, the Study Team used the mean tons in combination with two sets of traffic counts. The total K-F Road freight volume values were then analyzed to detect year-to-year changes.

Results

In the Post-Project Study, freight truck loads were reported between five and forty tons while Mid-Point Study tonnage ranged from one to 21 tons. Freight truck drivers traveling the K-F Road in the Post-Project Study reported a mean cargo of 18.8 tons, approximately three tons more than reported in the Mid-Point Study (15.5 tons). Exhibit 31 shows the estimated monthly K-F Road freight volumes for the Mid-Point Study and the Post Project Study using tons reported by drivers and traffic counts collected prior to data collection.

Exhibit 31: Monthly K-F Road Freight Volumes and Cost (USD)

	Average Daily Truck Count	Mean Truck Load	Monthly Freight Volume	Monthly Freight Cost
Mid-Point Study	164	15.5	77,252	$2,148,373
Post-Project Study	168	18.8	95,905	$2,333,091
Percentage Change	2%	21%	24%	9%

Although these changes in freight volume are quite dramatic, they understate the actual changes that took place due to the fact that the Mid-Point Study was conducted when half of the road's rehabilitation was complete and changes in truck volume had already taken place. Traffic counts conducted prior to the road's construction allowed the Study Team to estimate pre-project freight volumes. In July 2006, there were 95 trucks on average traveling daily on the K-F Road. Using the Mid-Point Study mean truck load (which gives us an overestimation of pre-project loads), pre-project monthly freight volume would fall at about 44,789 tons. This reveals a 115 percent increase in freight volume post-rehabilitation.

Daily freight volume was calculated by applying the mean tons per truck and multiplying by the average daily freight trucks traveling the K-F Road (using two quarter traffic counts). Exhibit 32 shows a 24 percent increase

[81] Further analysis of Mid-Point Study data indicated that freight costs were marginally sensitive to excluded observations when reasonable values were imputed for missing responses. The limits comparing the two data sets are not as great as they initially appear and it was possible to overcome many of the limitations and still maintain statistically significant results.

in daily freight volumes between the Mid-Point Study and Post-Project Study.[82] It was found that the daily cost of freight shipped via the K-F Road increased by nine percent, from 70,631 USD in the Mid-Point Study to 76,848 USD in the Post-Project Study. Overall, the Study Team's estimates translate into an annual freight volume of approximately 1.15 million tons shipped via the K-F Road at a cost of about 28 million USD.

Exhibit 32: Daily K-F Road Freight Volume (USD)

	Average Daily Truck Count	Mean Truck Load	Daily Freight Volume	Mean Daily Cost for Freight
Mid-Point Study	164	15.5	2540	$70,631
Post-Project Study	168	18.8	3153	$76,704
Percentage Change	2%	21%	24%	9%

Data Limitations[83]

The traffic counts used in this analysis from both the Mid-Point and Post-Project Studies each had limitations. The Post-Project Study Traffic Counts, conducted in October 2010 and January 2011, were conducted closer to the terminal cities and likely included increases in-city traffic counted at the Faizabad-end of the road. Therefore, the Study Team decided to use only traffic counts from the Keshim-side of the K-F Road (see analysis section on Traffic Counts for more information). Additionally, the Study Team discovered, while recalculating Mid-Point traffic data to be consistent with Post-Project data, an error in the type of vehicles included in the Mid-Point truck counts. Mid-Point Study traffic data actually reflected all vehicles traveling the K-F Road, not just freight trucks with 2-axles or more.

4.2.11 INDICATOR 11: COST OF INFORMAL PAYMENTS

Rationale

The improvement of a road should substantially reduce vehicle operator costs, which would result in lower transport costs. This, in turn, should increase commerce and improve access to social services. These benefits, however, depend on the lower costs of transport being passed on to road users, and will not materialize if government officials and/or local "bandits" co-opt this benefit through collecting informal tolls. There is strong anecdotal evidence in Afghanistan that road improvements have lead to increased informal payments to either government officials or self-appointed toll collectors. Thus, identifying how these payments change once the road is complete will help detect whether the benefits of road improvements are being captured illicitly and to what extent.

Methodology

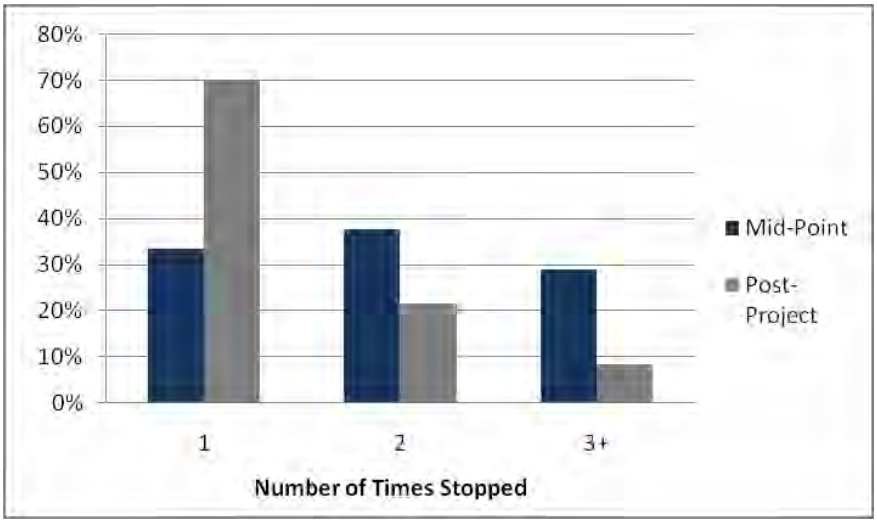
The Study Team interviewed 203 vehicle operators in the Mid-Point Study and 244 vehicle operators in the Post-Project Study about informal tolls while driving one direction on the K-F Road. For both studies, enumerators interviewed respondents at each of the K-F Road's terminal points as well as locations along the alignment. Drivers were asked if they had ever encountered a situation on the K-F Road where they were stopped to pay a toll.[84] Those that responded affirmatively were asked how many times they were stopped and approximately how much they normally paid for tolls while traveling a one-way trip on the K-F Road.[85]

[82] The Study Team estimated the daily cost of freight traveling the K-F Road for studies using freight cost per ton per km from Indicator 9 and daily freight volume.
[83] See Indicator 9 Data Limitations section for limitations regarding average cost per ton per kilometer results.
[84] The Vehicle Operator survey question specifically asks specifies drivers the number of times he is usually stopped per one-way trip.
[85] Of the 203 Mid-Point vehicle operators surveyed, 188 drivers had valid responses to the question on whether they were stopped while driving the K-F Road. Of the 244 vehicle operators interviewed, 239 Post-Project responses were valid.

Results

Of the vehicle operators providing valid responses, 61 percent of vehicle operators in the Mid-Point Study responded that they had been stopped to pay a toll while traveling on the K-F Road. Seventy-seven percent of Post-Project vehicle operators reported that they were stopped for informal payments. Exhibit 33 illustrates the number of stops reported by vehicle operators in both the Mid-Point and Post-Project Studies for an average one-way trip along the K-F Road.[86] The number of stops at the Mid-Point ranged from one to 24 while the Post-Project responses were between one and six.[87] The Mid-Point median number of stops was two, while the median number of stops in the Post-Project Study reduced to one. The mean number of stops in the Post-Project Study was 1.6 (compared to a mean of 2.7 stops in the Mid-Point Study). Thus, while a higher percentage of drivers were stopped post-project, drivers were stopped less frequently.

Exhibit 33: Informal Tolls Reported by Drivers Traveling One-Way on the K-F Road



The median cost of informal payments reported for an average one-way trip on the K-F Road decreased from 2.32 USD in the Mid-Point Study to 1.47 USD in the Post-Project Study.[88] To determine if the type of vehicle had any impact on informal tolls, the Study Team grouped vehicles into three broad categories: Personal Use vehicles, Multi-Use vehicles and Trucks (see Exhibit 34).[89] Trucks continue to report the highest mean cost per stop (6.49 USD in the Mid-Point Study and 8.90 USD in the Post-Project Study). For both Multi-Use vehicles and Personal vehicles, means costs per stop decrease substantially – 19 percent for Multi-Use vehicles and 29 percent for Personal vehicles.[90] The median price for trucks also experienced a decline of 10 percent. Thus, both the frequency of being stopped and the cost of payments per stop seem to have generally declined between the two reporting periods. This means that at this point, the benefits of the road can be passed on to road users and are not being captured by rent seekers.

[86] Of the 203 vehicle operators surveyed at the Mid-Point, 112 valid responses were collected in response to how many times they were stopped; the Post-Project had 182 valid responses out of 244 vehicle operators surveyed.
[87] The Post-Project Study excludes two outliers of responses of 50 and 55, which were most likely due to enumeration errors.
[88] The cost of informal payments are weighted by average traffic counts from October 2009 and January 2010 for the Mid-Point Study and October 2010 and January 2011 for the Post-Project Study to calculate the average cost of informal payments.
[89] Trucks include 2-axle trucks, 3-axle trucks, and tractor trailers. Personal Use vehicles include cars, 4 wheel-drive vehicles and pick-up trucks. Multi-Use vehicles include buses, minibuses and vans.
[90] The difference of the means between these three vehicle types was found to be statistically significant (p=0.011).

Exhibit 34: Cost of Informal Payments by Vehicle Category (2007 USD)

Vehicle Category	Mid-Point Study					Post-Project Study				
	Mean Cost per Stop	Median Cost per Stop	Tolls Paid	Traffic-Weighted Mean	Traffic-Weighted Median	Mean Cost per Stop	Median Cost per Stop	Tolls Paid	Traffic-Weighted Mean	Traffic-Weighted Median
Trucks	$6.49	$3.59	22			$8.90	$3.22	55		
Personal	$2.54	$1.80	67	**$ 3.65**	**$ 2.32**	$1.81	$0.98	98	**$ 2.85**	**$ 1.47**
Multi-Use	$2.89	$2.16	20			$2.35	$2.86	22		
Total	$3.40	$2.16	109			$4.10	$1.79	175		

Data Limitations

To ensure the largest sample size of drivers on the K-F Road, the enumerators positioned themselves along the road and near urban city areas. The majority of surveys conducted were completed in Faizabad and Argo districts (56 percent combined) with 42 percent of drivers sampled in Keshim and 2 percent in Shahre Naw. This would create some bias and provide a sample more representative of the Faizabad end of the road. That is, it would capture more of the traffic traveling to and from Faizabad which might bias driver information to those transporting goods to and from the provincial seat. A final limitation may be an inherent bias in the pool of respondents that were enumerated for the Vehicle Operator Survey. Drivers stopped by enumerators holding clipboards along the K-F Road may have appeared "official" and thus drivers may have stopped for the same reasons they stop and pay for informal tolls. Given that these biases exist in both phases of reconstruction, it is likely their effects are canceled out overall in our analysis.

4.2.12 INDICATOR 12: TRAVEL TIME TO HEALTH CLINIC

Rationale

Changes in the average travel time to health clinics are an indicator of increased access to health services, which are related to improvement in road conditions. With completion of the K-F Road, we expected that the time required traveling to health facilities (clinics and hospitals) will decrease. In addition, reduced travel times and travel costs (e.g., passenger fares and vehicle operator costs) to health facilities should lead to an increase in visits to health facilities on an annual basis.[91]

Methodology

The Study Team used the household survey to evaluate travel times to health clinics. We asked households how far away the nearest clinics and hospitals are from their residence, the length of time it takes to reach the nearest clinic and hospital, and the number of trips they made to each type of health facilities in the last 12 months. Of the total 467 households surveyed, 461 provided responses regarding the length of time it takes to reach the nearest clinic. The results for this indicator are provided for minor and adult female populations, of which there are 3,030 minors and 1,130 adult females residing in the surveyed households.

Results

The mean travel time to the nearest clinic for both minors and adult females was 95 minutes. As shown in Exhibit 35, this represents a 53 percent increase in mean travel times to clinics for minors and a doubling of mean travel time to clinics for adult females. The mean travel time to reach the nearest hospital also increased in the Post-Project Study. The average travel time for minors was 150 minutes and for adult females was 133 minutes (see Exhibit 36). Although these results are not what we would expect, further analysis reveals general trends in reduced travel times (from Mid-Point Study to Post-Project Study) for households in similar distance categories from the road (see below for further discussion).

[91] Annual visits to health clinics are examined in the next section on Indicator 13: Frequency of Visits to Health Clinics.

Exhibit 35: Average Travel Time to Clinic

Mean Total Travel Time to Clinic		
	Mid-Point	Post-Project
Minors	62 Minutes	95 Minutes
Females	47 Minutes	95 Minutes

Respondents using the K-F Road to travel to a health facility live on average three kilometers from the road (compared to households not using the road to travel to the nearest health facility which are located on average 9.5 kilometers from the road). Approximately 21 percent of minors and females in the Post-Project Study use the K-F Road to travel to the nearest health clinic – an increase of six percent from the Mid-Point Study. A greater percentage of minors and females rely on the K-F Road to access the nearest hospital than the nearest clinic (between 62 and 63 percent for both). This is most likely due to the fact that hospitals are generally located in the major cities, while clinics can operate more locally in the villages (see data limitations section for further discussion). As Exhibit 36 shows, use of road does diminish travel times slightly. Minors and females who use the K-F Road to travel to a health facility have lower average travel times than those who do not use the K-F Road – eleven minutes less for minors and nine minutes less travel time for females.

Exhibit 36: Mid-Point and Post-Project Travel Times to Clinics and Hospitals[92]

Clinics	Mid-Point	Post-Project
Total Households Surveyed	485	467
Average Travel Time to Health Clinics for Minors	62 min	95 min
Average Travel Time to Health Clinics for Females	47 min	95 min
Percentage of minors travelling to Clinic using KF	15.2%	21.4%
Percentage of females travelling to Clinic using KF	16.7%	20.3%
Average Travel Time for Minors Using K-F Road	74 min	86 min
Average Travel Time for Minors Not Using K-F Road	62 min	97 min
Average Travel Time for Females Using K-F Road	51 min	88 min
Average Travel Time for Females Not Using K-F Road	47 min	97 min
Hospitals	**Mid-Point**	**Post-Project**
Average Travel Time to Hospitals for Minors	108 min	150 min
Average Travel Time to Hospitals for Females	82 min	133 min
Percentage of minors travelling to Hospitals using KF	59.6%	61.9%
Percentage of females travelling to Hospitals using KF	61.3%	63.1%
Average Travel Time for Minors Using K-F Road	80 min	127 min
Average Travel Time for Minors Not Using K-F Road	130 min	185 min
Average Travel Time for Females Using K-F Road	63 min	115 min
Average Travel Time for Females Not Using K-F Road	103 min	161 min

Looking at locations of households within the ZOI, the Study Team found that the median travel time to the nearest clinic fell around 20 minutes for respondents living within one kilometer of the road. However, for those living one kilometer or more from the K-F Road median travel times increased to one hour or more (see Exhibit 37). Not very surprisingly, robust statistical relationships were found between travel times to the

[92] Average travel times were calculated by dividing total populations (total number of females or minors) by total travel times, providing a weighted value average of travel time per person.

nearest clinic and both household distance to the K-F Road[93] and distance to the nearest city (Keshim or Faizabad).[94] Similar results were found for distance traveled to hospitals. Households located within one kilometer of the road travel a median time of 30 minutes to the nearest hospital, while households located more than one kilometer from the road experienced greater median travel times ranging from 90 minutes to almost 4 hours. Overall, despite a slight rise in average travel times for minors and females, the median values help us avoid extreme travel times while observing values across distance increments for the total population. In general, travel times to clinics in particular have decreased since the Mid-Point Study.

Exhibit 37: Travel Times to Clinic for Household Distances from the K-F Road and City

Travel Time to Clinic				
	Post-Project		Mid-Point	
Distance from Road	Median (min)	Obs	Median (min)	Obs
<1km from road	20	57	30	55
1 to 3km from road	60	28	120	24
3 to 6km from road	150	61	150	59
6 to 9km from road	120	81	157.5	74
9 to 12km from road	120	134	120	143
>12km from road	90	100	60	105
Distance from City	Median (min)	Obs	Median (min)	Obs
<5km from city	20	35	27.5	28
5 to 15km from city	80	153	120	173
15 to 25km from city	150	156	90	150
25 to 35km from city	120	84	150	76
35 to 45 km from city	210	33	420	31

Data Limitations

One limitation to the data is the large portion of "I don't know" responses. Of the 467 households, thirty percent (approximately 141 households) answered "I don't know" to the number of kilometers to the nearest hospital or to the nearest clinic. Of the 141 households that answered "I don't know" to each of the distance questions, roughly half of them (67 households) answered "I don't know" to both questions. The households that answered "I don't know" to both questions were located both farther from the K-F Road and the nearest city – 61 percent were over nine kilometers away from the K-F Road and 94 percent were over fifteen kilometers from the nearest city. This could bias our analysis to document health facility travel times for households residing closer to the roads and terminal cities.

Although the data indicate that households living farther from the road are traveling shorter distances to clinics than those living closer to the road, we do not have accurate geographic data on the locations of all clinics outside the cities and within the ZOI. Therefore, we cannot accurately say they are traveling to new local clinics in the ZOI that did not exist during the Mid-Point Study.

[93] Distances to the road are based on the shortest linear distance to the road and therefore do not reflect the actual paths or trails taken to reach the road.

[94] Every kilometer a household lives from the K-F Road, travel time to clinics increases by about four minutes (p = .019). For every kilometer a household resides from either Keshim or Faizabad city, total travel time to the nearest hospital increases by almost seven minutes (p=.001). These households are only those located along the road and are closer to the road than to a city (not including the end terminals).

4.2.13 INDICATOR 13: FREQUENCY OF VISITS TO HEALTH CLINICS

Rationale

As rehabilitation of the K-F Road reduces travel times and travel costs (e.g., passenger fares and vehicle operator costs) to health facilities, we would expect to see residents in the ZOI access health services more frequently. Furthermore, as the rehabilitated road allows for faster and easier transport into remote villages proximate to the road, information about preventative health care and regular check-ups may indirectly impact the number of visits made to health clinics. Additionally, people living farther from the terminal cities, particularly those proximate to the road, may have increased access to vehicles which would provide access to transport to reach the nearest hospital or clinic. While some of these factors are direct impacts of the newly constructed road, they are not all easily measured. For this reason, the Study Team will use qualitative information to support possible reasons for increased access to health facilities.

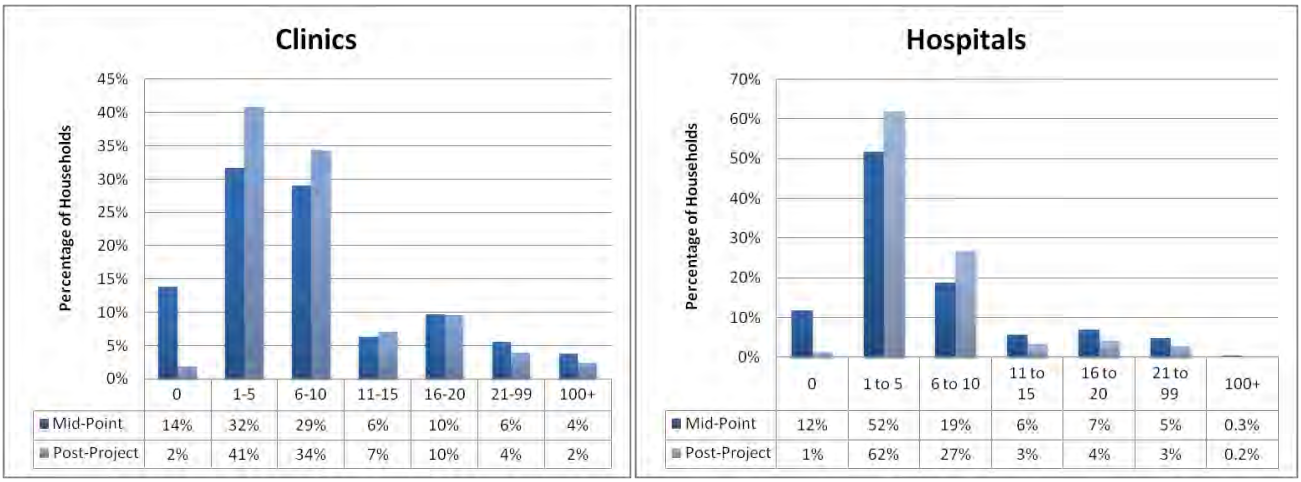
Methodology

In the household survey, respondents were asked the number of times members of the households visited clinics and hospitals within the last year. Of 467 households surveyed, 98 percent provided responses to questions regarding the number of visits to clinics and hospitals.

Results

Of the total 467 households surveyed in the Post-Project Study, 453 provided responses regarding number of visits to clinics. For clinics, 41 percent reported one to five visits, and 34 percent reported six to ten visits to clinics (see Exhibit 38). Of the 458 households that provided a response to the number of visits to hospitals, 62 percent reported one to five visits to the hospital, and 27 percent reported six to ten trips to the hospital (see Exhibit 38). The number of households who reported zero trips to clinics decreased from fourteen percent in the Mid-Point Study to two percent in the Post-Project Study, revealing that more people are making at least one trip annually to a health clinic due to the road's rehabilitation. Hospitals revealed a similar increase in annual trips, with those reporting making no trips to a hospital in a year decreasing by eleven percent.

Exhibit 38: Annual Visits to Health Facilities



To decrease sensitivity to extreme values, the median value was selected as the baseline value. As shown in Exhibit 39, the median total household visits to health facilities remained at six visits per year to clinics and four visits per year to hospitals for both studies. There is a negative, statistically robust relationship between

number of trips to the nearest clinic and total time it takes to make the trip.[95] This indicates that distances people are willing to travel or improved access to speedy transport impacts the number of trips made to a clinic on an annual basis. The relationship is similar for trips to hospitals, but at a lesser degree.[96]

Exhibit 39: Median Annual Household Visits to Clinics and Hospitals

Facility Type	Mid-Point Median HH Visits Per Year	Mid-Point Households	Post-Project Median HH Visits Per Year	Post-Project Households
Clinic	6	615	6	583
Hospital	4	693	4	588

For all households, cost of travel is a statistically significant predictor of number of annual trips to clinics and hospitals, so that as the cost to travel to the nearest health facility increases the number of annual trips decreases slightly.[97] There is no correlation between the cost of travel for households using the K-F Road to travel to a health facility and number of annual trips.[98] While this study found no change in the median annual household visits to clinics or hospitals, it is reasonable to surmise that the reduced travel times and travel costs, which the rehabilitation of the road has generated, will over time lead to more people accessing health services. As mentioned earlier (see Section 4.1.3) the director of the Keshim hospital indicated that the doubling in patient load in the past couple of years was largely attributed to the effect of the road.

In the Mid-Point Study, household responses to number of visits to health facilities were sensitive to the time in which the survey was conducted. For example, surveys conducted in the spring responded with a median number of two visits to clinics and hospitals, whereas households surveyed in the winter responded with a median number of six visits to clinics and five visits to hospitals. The Post-Project Study did not face this issue of seasonality, since all household surveys were completed in winter of 2010. The Study Team tested whether distance to the K-F Road or to the nearest city could have been a factor in this difference. [99] It was found that distance to the nearest city, either Keshim or Faizabad, was greater for the households surveyed in the spring with the average distance to the nearest city at 24 kilometers. [100] The distance to the nearest city for households surveyed in the winter was half the distance of the households surveyed in the spring (at thirteen kilometers).[101] The household surveys were done in the spring due to weather conditions preventing the completion of these surveys in the winter. The analysis shows that these households were in more remote areas, so the statistical difference between seasons in this case seems to be largely attributable to this fact, rather than to seasonality itself.

The data showed a large discrepancy in the number of households that reported using the K-F Road to travel to clinics or hospitals than the number of households that reported not using the K-F Road. This may have affected the statistical significance of use of the K-F Road as a predictor of number of annual trips. Due to the fact that clinics are generally found in the smaller towns and villages while the hospitals are located in the cities, the requirement of the road will change based on the kind of facility a household member is visiting. Thereby, it is expected that more respondents are using the road to travel to hospitals than they are to

[95] For households using the K-F Road to travel to clinics, as total travel time to the nearest clinic increases by one minute, the number of annual trips decreases by 0.03 (p=.046).
[96] As total travel time to the nearest hospital increases by one minute, the number of trips annually decreases by .01 trips (p=.004).
[97] For clinics, every one percent increase in the cost of trip results in a one percent decrease in the number of annual trips (p=.028). Annual visits to hospitals decrease by 0.02 trips with every one percent increase in the cost of travel (p=.000).
[98] This relationship is just barely statistically significant (p= .116).
[99] Of households that visit clinics and hospitals, 70 percent live six or more kilometers from the road and 60 percent live 15 kilometers or more from a city.
[100] Distances to the nearest city are based on the shortest linear distance to the city and therefore do not reflect the actual paths or trails taken to reach the city.
[101] Every kilometer a household is located farther from the nearest city, the number of times they travel to a health facility decreases by 0.34 times for clinics and by 0.28 for hospitals.

clinics.[102] Furthermore, it is possible that more households are using secondary roads to get to the clinics which are most likely closer to villages and greater in number than hospitals.

4.2.14 INDICATOR 14: RATES OF SCHOOL ATTENDANCE

Rationale

Over time, lower transport costs and faster travel times as a result of the road's rehabilitation could provide children with increased access to schools. However, it is difficult to measure the potential magnitude of a rise in school attendance rates because only a small proportion of surveyed households with school age children use the road to travel to school (see below). Forty-seven percent of households with at least one child not attending school identified distance to travel to school as the reason for non-attendance.[103] Furthermore, differences in household school attendance rates as a result of the road's rehabilitation are not likely to be realized immediately (within one month of the road's completion), in particular for those households located several kilometers or more from the road and that do not use the road to get to the nearest school.

Methodology

The Survey Team surveyed 467 households asking questions about the number of children that attend school within the household. In the Mid-Point Study, the survey instrument did not include a question that asked the number of females between the ages 6 and 18 (school-age) living in the household. In the Post-Project Study, the survey design team added the question "How many school age females currently live in your household?" This question, in conjunction with asking households the number of females between the ages of 0 to 18 and the number of school-age females not attending school, allowed the Study Team to get a better measure for number of females attending school than in the Mid-Point Study. For comparison purposes, the new data will be tested with the assumption and estimation method used in the Mid-Point Study (discussed further in the data limitations section).[104] Seasonality is also an issue in the Mid-Point Study as discussed in a later section. Since the Post-Project Study was conducted in the winter months only (November-December, 2010), the comparative analysis includes only those households surveyed in the winter from the Mid-Point Study.

Results

In the Post-Project Study, households reported that approximately 82 percent of all school-age children attend school, which represents a slight decrease from the 83 percent reported in the Mid-Point Study. They reported approximately 86 percent of male school-age children attending school and an estimated 77 percent of female school-age children attending school. An estimated 82 percent of households reported full school attendance by male school-age children and 74 percent reported full school attendance by female school-age children. Of these, households reporting full school attendance by both male and female school-age minors increased from 63 percent in the Mid-Point to 67 percent in the Post-Project Study. This four percent increase demonstrates that post-rehabilitation more households in the ZOI are sending all of their children (aged 6 to 18) to school. Although this study cannot make any claims that the newly constructed road impacted school attendance rates in a direct way and to the degree found, it represents a positive change that may or may not be due to the constructed road providing greater access to schools.

[102] Twenty-one percent of households that reported making at least one trip to a clinic also use the K-F Road to make their trip. Seventy-nine percent do not use the K-F Road when making their trip to the nearest clinic. For hospitals, the results were the opposite: 63 percent of respondents have made at least one trip to the nearest hospital using the K-F Road, while 37 percent reported not using the K-F Road to travel to the nearest hospital.

[103] The majority of these households live quite far (six kilometers or more) from the K-F Road.

[104] In the Mid-Point Study winter surveys, the total number of females ages 0 to 18 was 797, so it was estimated that half (398) were between 6-18 years of age. In the Post-Project Study, the total number of females ages 6 to 18 was 707. Given that the number of female minors decreased slightly, the estimation fell within a reasonable range in assuming 50:50 ratios.

Exhibit 40: Rates of School Attendance

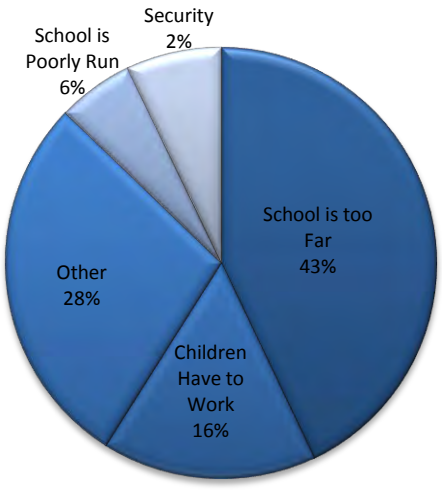
	Mid-Point	Post-Project
Households with Full School Attendance	63%	67%
School-Age Minors Attending School	83%	82%

Survey data indicates that approximately eleven percent of households use the K-F Road to travel to school (compared to twelve percent of households in the Mid-Point Study). Of the households that use the road, 81 percent of the households in the Post-Project Study reside within one kilometer of the road.[105] Households residing closer to the K-F Road also reported a greater percentage of full school attendance, compared to households living farther from the road. Eighty-eight percent of households within one kilometer of the road reported full school attendance, whereas less households (66 percent) residing farther from the road (six kilometers or more) reported full school attendance. Since the ZOI population already exhibits higher attendance rates for those households living within a few kilometers from the road then it is likely that the K-F Road's rehabilitation would not result in a significant increase in school attendance rates.

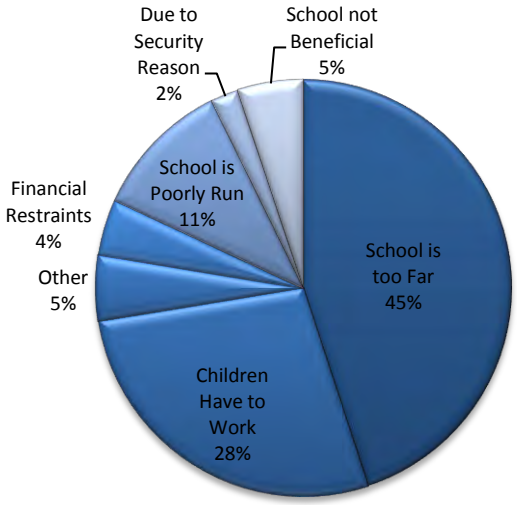
In the Post-Project Study, the majority of households reported that the reason for children not attending school was that the school was too far (see Exhibit 41). About five percent of the households responded that there were "Other" reasons their children did not attend school.[106] Ninety percent of households that reported male non-attendance due to the school being located too far away live six kilometers or more from the K-F Road. Similarly, 83 percent of households reporting school is too far as the reason for female non-attendance also live six or more kilometers from the road. Distance to travel to school is still a negative factor in school attendance, but it mostly exists for those households that live quite far from the road.

Exhibit 41: Reasons for Children not Attending School

Mid-Point Study (2009)



Post-Project Study (2010)



In the Mid-Point Study, households reported a greater instance of full school attendance in the spring months (77 percent attendance) compared to winter months (60 percent).[107] Given that the spring households were further from the road than the winter households, one would have expected school attendance rates to be

[105] Seventy-seven percent of households that reported using the K-F Road in the Mid-Point Study lived within 1 km of the road.
[106] Other responses included the child is too young, teacher was not present, or other "missing" or invalid responses which were enumeration errors.
[107] Although there is greater percentage of households reporting full school attendance in the spring months, the difference between these attendance rates were not found to be statistically significant.

lower in the spring households on the basis of the earlier observation that attendance appears to decline the farther away a household is from the road. If there is indeed a difference between school attendance in the spring and fall, the numbers given here probably understate the difference.

Data Limitations

As shown in Exhibit 41, twelve percent more households are reporting children having to work as a reason for non-school attendance in the Post-Project Study than in the Mid-Point Study. This suggests that more children are getting jobs in the years prior to the road's completion and during the construction phases. Due to a lack of data, we cannot determine the types of jobs children obtained in the region and at what age children start to work.

As mentioned earlier, the estimate of school-age females was based on a 50:50 distribution determined by the percentage distribution of males for the age groups 0 to 5 and 6 to 18 in the Mid-Point Study. Therefore, our comparative analysis is slightly limited in that we do not have exact mid-point population data on school-age females and had to rely on estimation. It is not likely the estimation severely underestimated or overestimated the number of school-aged females; however, we cannot be certain that the changes perceived between mid-point and post-project are based on completely accurate measures of school-age female populations.

A final data limitation is that we do not distinguish which levels of schooling male and female students are currently attending. For future studies, it would be helpful to add a question to the survey instrument to gauge if drop-outs occur more often during primary, secondary, or tertiary levels of schooling. It is also likely that the road's impact will be felt more in secondary school attendance, since secondary schools are farther apart and require more travel.

4.3 TOPICS OF SPECIAL INTERESTS

The next section will discuss topics of special interest and additional analysis the Study Team conducted that was not included in our discussion of the results of the fourteen socio-economic indicators. First, we will discuss security in the area and number of incidents occurring within the ZOI from the pre-construction in 2006 to post-rehabilitation in 2010. Second, traffic count analysis and observed changes in traffic volume due to the road's rehabilitation will be discussed. Finally, the Study Team conducted focus groups and key informant interviews in both studies in order to ask local populations and key personnel about positive (and negative) impacts that had taken place due to the road's rehabilitation. In addition, secondary qualitative findings from informal interviews conducted on field site visits will be included here to provide context to our quantitative data findings in the previous sections.

4.3.1 KESHIM-FAIZABAD ROAD SECURITY

Badakhshan has traditionally been one of the safest provinces of Afghanistan. It is the only province un-occupied by the Taliban during their drive to control the country. Burhanuddin Rabbani, a Badakhshan native, and Ahmed Shah Massoud were the last remnants of the anti-Taliban Northern Alliance during the peak of Taliban control in 2000 and 2001, and they used the province as their base of operations. The province was about to fall to the Taliban when the American invasion allowed the Northern Alliance to reclaim control of the country with the aid of American military air power and assistance.

Historically, conflict in Badakhshan has been linked to land use and control of major economic lifelines in the province, which may or may not be illicit. In addition, land and water conflicts arise from tensions related to the availability of both arable land and of water for irrigation purposes. [108] Exhibit 42 below lists the security incidents tracked by WITS data in Badakhshan Province since pre-construction on the K-F Road. From October 2006 until December 2010 (after the K-F Road's completion), 75 security incidents have been

[108] "Conflict Analysis: Baharak District, Badakhshan Province." Cooperation for Peace and Unity, 2009, p. 5, 15. www.cpau.org.af/file.php?id=18&code=eec67d3. Accessed 14 April 2011.

reported in Badakhshan Province. Around 10 percent of total incidents are indicated to be perpetrated by the Taliban.[109]

Exhibit 42: Number of Attacks[110]

Date	Subject	City	Dead	Wounded	Hosage	Total Victims
10/15/2006	7 civilians wounded in IED attack	Faizabad	0	7	0	7
10/16/2006	1 child killed in IED attack	Faizabad	1	0	0	1
1/6/2007	2 NGOs damaged in mortar attacks	Faizabad	0	0	0	0
4/8/2007	1 civilian injured in grenade attack by suspected Taliban	Faizabad	0	1	0	1
5/17/2007	1 bodyguard killed, 3 others, 1 police officer injured in IED attack	Faizabad	1	4	0	5
6/11/2007	1 NGO worker killed in armed attack	Faizabad	1	0	0	1
7/19/2007	1 civilian killed, 26 others injured in suicide IED attack	Faizabad	1	26	0	27
8/7/2007	1 residence damaged in rocket attack	Faizabad	0	0	0	0
9/2/2007	1 office damaged in rocket attack	Keshim	0	0	0	0
11/21/2007	Community targeted in RPG attack	Faizabad	0	0	0	0
6/28/2008	Community targeted in RPG attack	Faizabad	0	0	0	0
8/8/2008	1 security guard wounded in rocket attack by Taliban	Faizabad	0	1	0	1
12/3/2008	3 police officers killed in armed attack by suspected Taliban	Faizabad	3	0	0	3
12/20/2008	2 contractors killed in IED attack	Keshim	2	0	0	2
1/21/2009	1 civilian kidnapped	Faizabad	0	0	1	1
1/24/2009	1 health clinic damaged	Faizabad	0	0	0	0
3/4/2009	1 residence damaged in rocket attack	Faizabad	0	0	0	0
5/11/2009	1 school damaged in arson	Darayim	0	0	0	0
8/18/2009	3 election workers killed in IED attack	Faizabad	3	0	0	3
11/7/2009	Community targeted in RPG attack	Faizabad	0	0	0	0
11/21/2009	3 police officers wounded by Taliban	Keshim	0	3	0	3
3/22/2010	Police officers targeted in IED attack	Argo	0	0	0	0
3/22/2010	2 police officers injured in armed attack	Argo	0	2	0	2
5/11/2010	1 police officer wounded in RPG attack by Taliban	Keshim	0	1	0	1
5/30/2010	8 police officers killed, 1 other injured in IED attack by Taliban	Darayim	8	1	0	9
7/10/2010	4 security guards, 1 contractor killed in IED attack by Taliban	Keshim	5	0	0	5
8/22/2010	Government official targeted in RPG attack	Keshim	0	0	0	0
8/26/2010	Political campaign office targeted in armed attack	Faizabad	0	0	0	0
10/22/2010	Police officers targeted in RPG attack	Faizabad	0	0	0	0
10/29/2010	2 police officers killed, 1 other injured in armed attack by suspected Taliban	Darayim	2	1	0	3
		TOTAL	**27**	**47**	**1**	**75**

4.3.2 TRAFFIC VOLUME

Traffic counts measure changes in road usage over time and as such constitute the best way to measure one of the most direct impacts of an improved road. Traffic volume serves as a good proxy for other benefits that a new road brings but that are more difficult to measure and attribute fully to the road, such as economic growth, access to social services, and social connectivity.

The first traffic count on the K-F Road was conducted in July 2006. It was a 7-day, 16-hour (4:30 – 20:30) count. The final count was conducted in January 2011, two months after the road's completion. It was a 7-day,

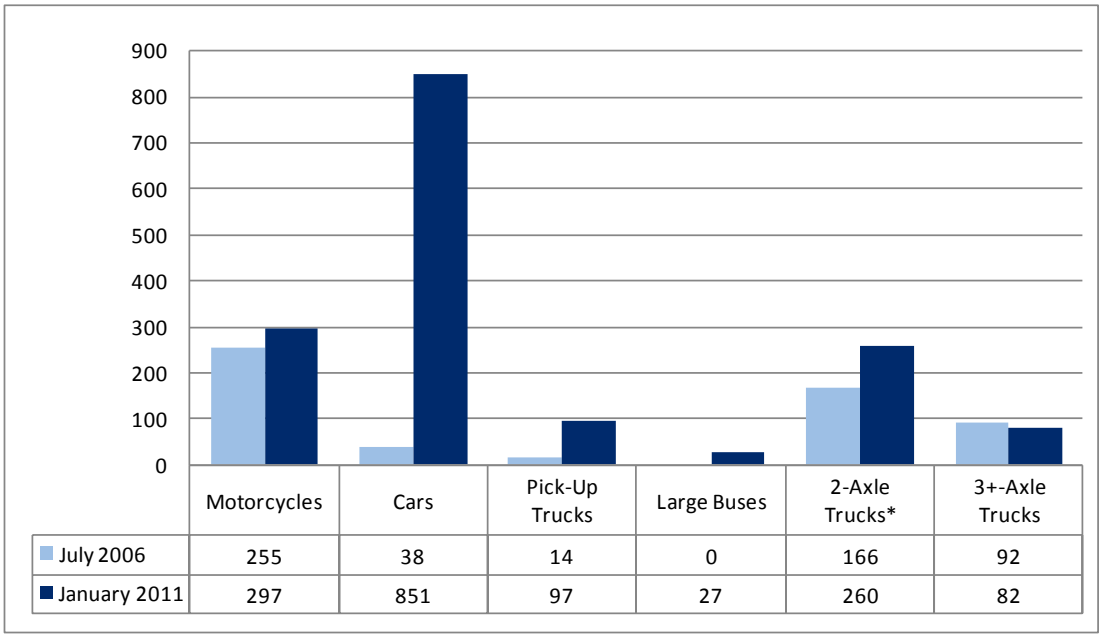
[109] On August 5, 2010, ten members (eight foreigners and two Afghans) of International Assistance Mission Nuristan Eye Camp were killed in Kuran wa Munjan District of Badakhshan. The incident received wide international media attention; however, it occurred in the southwest corner of the province, on the border of Nuristan, and outside of our ZOI. For more information, see: http://www.nytimes.com/2010/08/08/world/asia/08afghan.html?adxnnl=1&pagewanted=1&adxnnlx=1306166774-1anBJJH278xTfZvr2wQOKA. Accessed 23 May 2011.

[110] Data is drawn from the Worldwide Incidents Tracking System, which was created by the National Counterterrorism Center. The WITS data tracks "terrorist incidents," defined as occurring when "groups or individuals acting on political motivation deliberately or recklessly attack civilians/non-combatants or their property and the attack does not fall into another special category of political violence, such as crime, rioting, or tribal violence." Since it only tracks incidents at the provincial level, the data is somewhat limited in its usefulness for this indicator, Incidents occurring in cities or districts that the K-F Road does not intersect have been removed from the above exhibit. https://wits.nctc.gov/FederalDiscoverWITS/index.do?Rd=ProvincesStates|4294947102|Badakhshan&t=Records&Rcv=Incident&Nrc=id+8092+dynrank+disabled&N=0. Accessed 14 April 2011.

24-hour count. To make the counts comparable, the traffic counted between 20:00 and 5:00 was removed from the 2011 count.[111] Also, for this analysis, only the Keshim end of the road is evaluated.[112] The count of vehicles include cars, trucks, SUVs, 2-axle medium sized trucks, and 3+-axle medium and heavy trucks. The count of vehicles do not include military vehicles, tractors, rickshaws or any carriages pulled by animals.

As Exhibit 43 indicates, the changes in traffic volume are quite dramatic. Overall, the road experienced a three-fold increase in total traffic, from 565 vehicles in July 2006 to 1615 vehicles on the road in January 2011. In particular, car traffic volume increased twenty-two fold and 2-axle truck traffic volume increases by 57 percent. In addition, rehabilitation of the road led to greater large bus travel; large buses traveling the road increased from zero in 2006 to an average of 27 on a daily basis. The only category that experienced a decline in traffic volume was 3+-axle trucks, which decreased by eleven percent. This decrease is expected as 3-axle trucks in Afghanistan are fitted for rough terrain and therefore more expensive to operate compared to 2-axle trucks. While 2-axle trucks may transport less cargo by weight, it is likely more cost-effective (in fuel consumption costs) when aggregated across many trips on a paved road. As substantial as these increases are, the counts most likely understate the actual differences since traffic volume is heavier during the summer months in the height of the growing season. It is expected that traffic volume will continue to grow now that the road is fully constructed.

Exhibit 43: Annual Average Daily Traffic (AADT) by Vehicle Type[113]



	Motorcycles	Cars	Pick-Up Trucks	Large Buses	2-Axle Trucks*	3+-Axle Trucks
July 2006	255	38	14	0	166	92
January 2011	297	851	97	27	260	82

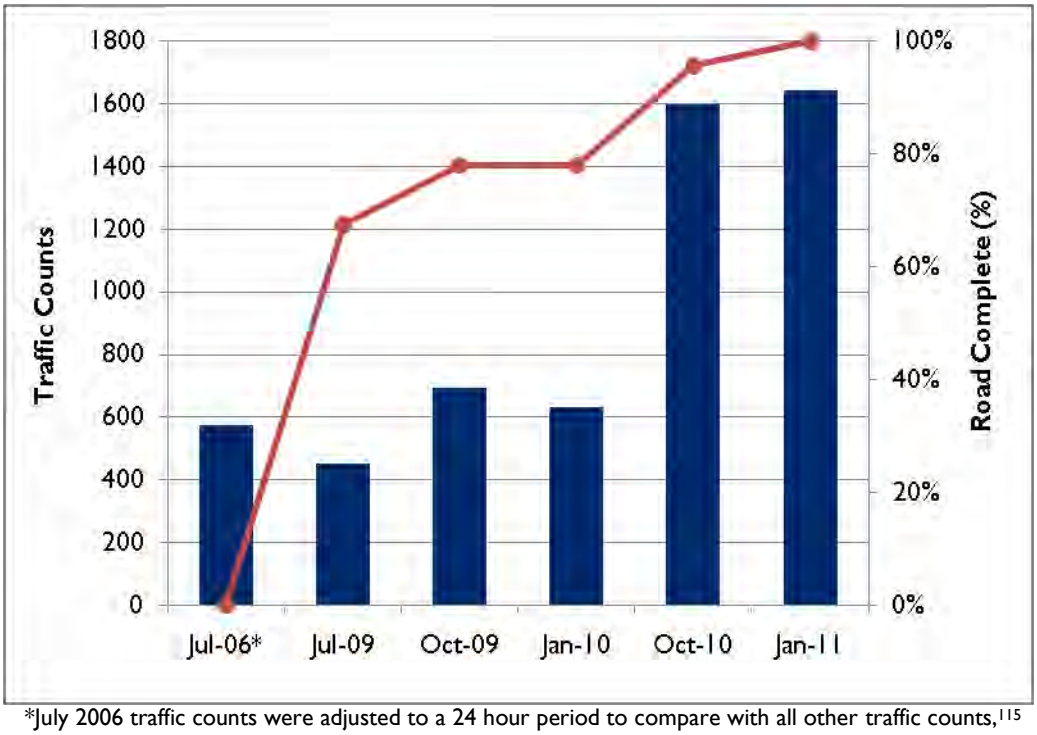
*Includes 4WDs and Minibuses

These traffic counts reveal that lower transport costs have had a profound effect on traffic volume, leading to increased commerical and personal use of the road. The earlier indicators explored this theory further by determining the road's effect on economic activity and social access, but these impacts are more difficult to measure and attribution is challenging to establish. The dramatic increases in traffic volume, however, implicitly points to broader impacts. Data from the household survey established that more families own a

[111] The 2006 count used hour increments that began on the half hour, whereas the 2011 counts began on the hour. Thus, the Study Team subtracted the counts for an extra half hour on each side (20:00 to 20:30 and 4:30 to 5:00) for the 2011 count. For the total traffic counts, there is only a slight difference (less than 2 percent). The one place where it makes a bit of a difference is for the counts on 3-axle trucks. Exhibit 1 shows about an eleven percent decrease in 3-axle traffic. If all the 3-axle trucks that fell into the excluded hours were counted, this decrease would reduce to 5%. The true number is likely somewhere in between.
[112] The 2011 traffic count on the Faizabad end was conducted at KM 99.5 instead of KM 95 as was the case with the 2006 count, so it included a lot more near-town traffic, thus compromising its analytical value.
[113] AADT collected at Keshim End of Road (KM 2) for traffic traveling in both directions.

motorized vehicle and thus have their own means to travel along the road.[114] Anecdotally, informal discussions with villagers along the road revealed that local people directly attribute increased vehicle ownership to the road's rehabilitation. Thus, it appears that lower transport costs has led to increased vehicle ownership which promises to incrsease economic opportunties and social access.

Exhibit 44: Comparison of Traffic Counts as Road Paving is Completed



*July 2006 traffic counts were adjusted to a 24 hour period to compare with all other traffic counts,[115]

Exhibit 44 compares the total vehicle counts between Keshim and Faizabad with the percentage of road paved. As the graph depicts, traffic counts remain relatively stable between pre- rehabilitation (July 2006) and during road construction (July 2009 through January 2010), fluctuating between about 450 and 700 vehicles per day. Following the completion of the K-F Road in December 2010, traffic counts nearly tripled from their baseline figures.[116] As mentioned earlier, this change may actually understate the impact since in the winter traffic volume is typically lower. There is every reason to expect that traffic volume will continue to grow now that the road is fully constructed.

4.3.4 QUALITATIVE DATA FINDINGS

In addition to quantitative instruments, qualitative data collection was also integrated into the evaluation design to supplement survey findings and to provide anecdotal insight into potential causal mechanisms. For example, the Study Team attempted to collect hospital records from before and after road construction to provide an outside reference on whether more patients are making visits and whether they are coming to the

[114] Compared to the Mid-Point Study, two percent more households reported owning a motorized vehicle in the Post-Project Study. This could include bus/minibus, car, van, truck, motorcycle, or tractor.
[115] Adjustments made were based on a 2 percent decrease in 2011 total traffic counts when the hours of 20:00 to 5:00 were removed (see earlier section). Although this change in traffic during night hours is based on 2011 traffic flows and may overstate the difference slightly for 2006 traffic (rough terrain would limit travel during night hours), the difference is no more than eleven vehicles, which seems a reasonable assumption.
[116] According to the IRP Semi-Annual Report for September 2010, the K-F Road was about 94 percent complete at the time of the October 2010 traffic counts.

hospital from a wider area than before.[117] Field visits before the study, during, and at the end of the study allowed the Study Team to have informal discussions with local villagers, hospital workers, traffic department officers, and new business owners to gauge changes sought by the local community that perhaps were not captured in the designed qualitative instruments. These are anecdotal findings in nature and should not be pressed too far.

Methodology

Several qualitative interviews were used to capture more fully how the rehabilitation of the K-F Road is impacting the area. In addition to the Settlement Demographic survey instrument which interviewed one village elder in every household polygon, three key informant interviews were conducted with district agriculture officials and two interviews were conducted with the Mayor of Faizabad city and the Mayor of Keshim city. Furthermore, eleven focus groups were conducted—two with urban women, one with rural women, one with urban men, one with rural men, and two with urban businessmen in Faizabad and Keshim. In the Post-Project Study, the following focus groups were added: one with personal vehicle drivers in Keshim city, one with bus drivers and officials from the transport department in Faizabad, one with freight transport operators and agencies in Faizabad, and one with taxi drivers in Keshim.

Positive Impacts

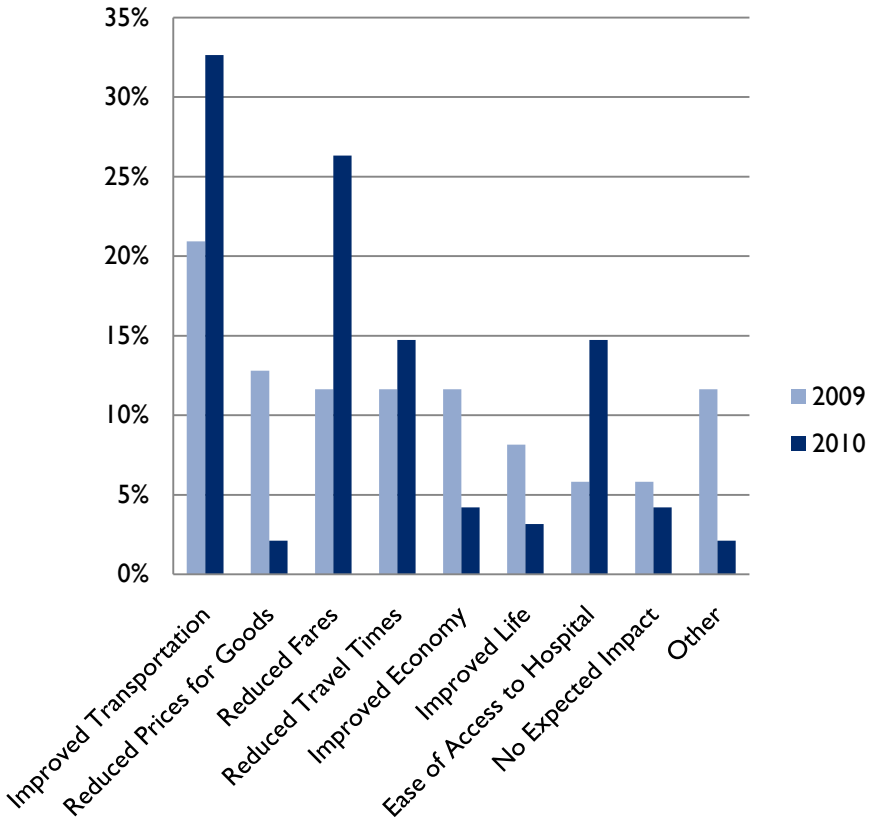
In the women's focus groups, participants highlighted the way the road opens access to new markets, which will help women in their businesses, particularly tailoring. They underlined the need to further these efforts through the rehabilitation and paving of feeder roads in the villages. Rural women pointed out how reduced transport fares has given them expanded access to markets as well as increased their ability to get to a medical facility. Students and female teachers are also able to travel to schools with ease and less time.

The mayors of Keshim and Faizabad cities remarked that before the re-construction of the road, travel times from Badakhshan to Kabul took three to four days, high transportation costs existed, vehicles were easily damaged due to the conditions of the road, and there was no support to trade/business by the government. Now, the road has played a vital role in business development and trade has improvement with the overall economic status of the communities also improving. Both the mayors and business men focus groups agreed that the area still suffers from low exports and high imports and that they rely on the government to help establish a link with neighboring countries, such as China, to encourage trade opportunities across both borders. In several cases, interviewees expressed concern about the government's ability to support trade and greater business development now that the road has been built.

There were 86 respondents in the Mid-Point Study and 99 respondents (out of 106) in the Post-Project Study that responded to an open-ended question on the Settlement Demographic survey asking about perception of road improvements due to the road's completion. Exhibit 45 displays how people's perceptions changed in regards to how they felt their lives would be affected by the road's rehabilitation. This data is based on responses from village elders and should not be interpreted to represent the ZOI population as a whole.

[117] Due to limitations from Keshim and Faizabad hospitals in providing confidential or archived data, the Study Team was not able to gather all data recorded in the hospital logs, as intended. However, we did discuss with hospital directors several times about keeping detailed logs to track patient loads and cause of injury.

Exhibit 45: Greatest Potential Impacts of the Road



In the Post-Project Study, more than half of the respondents highlighted the direct benefits of the road post rehabilitation as generally improved transportation (31 percent), reduced fares (25 percent), and reduced travel times (14 percent). Interestingly, fourteen percent also remarked that the road's improvements would improve life of the community, a response that doubled in number from 2009 to 2010. This demonstrates how the perception of the road's overall benefit on the lives of the local community could have been understated during the construction phase when perhaps it was too early for people to see the benefits a new road could bring them. Secondary impacts of the road stated by respondents were improved access to health care (4 percent), improved economy (3 percent), and reduced prices of goods (2 percent). Only two percent of respondents answered that the road's improvement would have no impact at all, a decrease from six percent of the village elders who thought the same during the Mid-Point Study.

While the Study Team did not include a measure of political connectivity in the study, a road has the potential to foster greater political, social, and economic integration. As people experience increased access to hospitals, visit markets that are located farther afield, and travel to political centers to address grievances, they will start thinking of themselves as belonging to a larger social area than they did earlier. While such changes require time to take effect, there was some evidence from our qualitative research that such a shift had already begun to occur. In an interview in September 2009, Keshim's deputy governor mentioned that before the road was built the people in Keshim district did not feel a part of Badakhshan Province. He stated that now the road allows official travel to Faizabad on a frequent basis, and that this has made them feel connected to their province in a new way. In another interview that same month, one village elder mentioned that leaders used to travel to Faizabad only for emergencies, usually once a year at the most, but now they can travel to Faizabad whenever business demands. In a politically and ethnically fractured country, this sense of connectivity is one of the vital, if not easily quantifiable, benefits that an improved road brings.

Although not heavily looked at, changes in population density around the road and migration patterns were mentioned as occurring due to the road's rehabilitation. It was observed by the Faizabad CDO that after

construction some villages and households re-located closer to the road to reap greater access to the transport corridor and ease of reaching the main city terminals. Whatever the reason for people moving closer to the road, this is part reveals a perception that the road brings benefits which the people are choosing to take advantage of.

Negative Impacts

In both focus group discussions and key informant interviews, there were two major negative impacts of the road that were mentioned: increased accidents and road safety; and uncompensated land taking.

The traveling speed of a taxi has risen from an average of 17 km/h to an average of 60 km/h. While reduced travel times bring numerous benefits, such a dramatic rise in speed in a heavily rural area where many have never seen travel at such speeds has meant a precipitous rise in traffic accidents, a reality that was recounted in several conversations with villagers. In an interview with the Badakhshan Traffic Department in November 2010, they recounted that in the previous six months 36 serious accidents and 49 overall had occurred on the K-F Road. In the entire previous year, there had only been 20 accidents total. In an interview in September 2009, the head doctor of Keshim's hospital estimated that they have two cases a day related to road incidents, which he said was a sharp rise from the past. In focus group discussions with women from rural dwellings, it was discussed that although traffic accidents increased, they were only occurring in a few locations along the road. Furthermore, the women claimed that the road itself does not have a negative impact but rather it is an issue of the people using the road not learning how to use it properly and safely. This is an interesting finding, indicating a willingness to accept personal ownership of the road and responsibility for use of the road.

The issue of uncompensated land taking came up in every meeting our Study Team had in the Keshim District during September 2009. It also came up in conversations with rural and urban woman conducted in November/December 2009 and in November 2010 where a series of focus groups and key informant interviews were conducted with both rural and urban residents and other road users. While many of the local people suggested that the benefits would outweigh any loss of land, land taking was an obvious sore point for many living along the road. There is a keen awareness that the government is responsible for compensating any land taking and that it has ignored this responsibility. Focus group participants made it clear that the land taking had created a great deal of hardship for many, in some cases leaving people without the means to provide shelter for their families. They said in most cases, people would be willing to accept government land as compensation. There apparently had been efforts to intervene in Kabul on behalf of those who had suffered from land taking, but this effort had led to no results. Apart from the injustice of not compensating those who had to move due to the rehabilitation of the road, failure to provide due compensation undermines one of the key objectives for building the road, especially in a country where road building is a means of building government legitimacy.

Finally, a road's benefits will endure only so long as the road is serviceable. In several interviews conducted in December 2009, interviewees expressed concern about the government's ability to maintain the K-F Road. The Mayor of Faizabad was skeptical that the government would carry out its responsibility in this area. One participant in the urban men's focus group in Keshim highlighted the need for the government to levy road user charges, which could finance road maintenance. The technical capacity for maintenance is lower than that required by road building and such a program would allow some jobs to continue beyond the life of the initial project. An effective maintenance program built into road programs from the outset will ensure that the substantial benefits that roads bring will endure long into the future.

4.4 THREATS TO VALIDITY AND OTHER KNOWN EVALUATION ISSUES

Every study has its limitations, both in design and in implementation, calling into question the results presented. For the sake of transparency and conservatism, this section presents the caveats and statistical issues that should be considered when assessing the validity of the findings in this report. Since this is a follow up study to the Mid-Point Study, some of the issues in the previous study that created bias in the results were either replicated in the current study analysis or were corrected through further survey design or sampling corrections. The table below highlights the issues the team is aware of in the Post-Project Study and outlines what has been done to mitigate their effect on the issue and assesses the implications for the study findings.

Exhibit 46: Threats to Validity and Data Limitations by Indicator

Indicator	Issue	Mitigation and Implications
1. Cost of Food Staples	1. A non-statistical sampling technique was used to collect up to 10 price values for each commodity in a given market. Therefore, the weighting of any averages is arbitrary and does not reflect the actual makeup of shops or volume of goods traded. 2. The survey month in which data collection occurred was not the same for both studies. This variation between the Mid-Point and Post-Project Study could bias year-to-year comparisons and mean price deviations between locations.	1. This method simulates the purchasing patterns of an actual buyer better than a random sampling method using GPS coordinates. Furthermore, replicating the technique in both studies reduces any systematic sampling error, making any detected change likely representative of the actual composition of prices. Price levels themselves should not be taken as representative. 2. The differences in prices between November and December in the Mid-Point Study were statistically insignificant for most commodities and should therefore have little, if any, impact on our analysis.
2. Markets Where Goods Sold	There was a sizeable portion of households that grow crops for which the answer to the question "How far away does your household sell [your highest valued crop]?" were entered as blank (22 percent in the Post-Project Study and 34 percent in the Mid-Point Study). This can only be interpreted as an enumeration error since respondents were provided with the options "I don't know" or "Refuse to Answer."	The effect of non-response to market distance questions is replicated for both studies; however, how this change relates to the population as a whole is unclear. The Study Team could not predict what these households are likely to report as the location of sale, and including these households would change our results with an upward bias (lower median distance).
3. Number of Businesses	For businesses in Keshim and Faizabad, the Study Team conducted a full on-the-ground census of businesses, counting and marking the location of each one with a handheld GPS unit. It is likely that businesses that are not visible from known commercial areas were not included in the counts. The likely effect is a downward bias in the business count.	The counting technique for both studies was implemented in the same manner, and thus the bias is replicated.

Indicator	Issue	Mitigation and Implications
4. Monthly Sales by Businesses	1. The businesses surveyed in Keshim and Faizabad were randomly selected from the business census, so the data is likely to suffer from the same selection bias issues that Indicator 3 faces (see above). 2. In the Mid-Point Study, the sub-contractor failed to comply with the sampling method that was chosen to gather data on businesses in areas more distant from the road, where the business census count was not conducted.	1. The identical sampling frame was used in both studies assuring that the bias is replicated and that the two samples are comparable. 2. In the Post-Project Study, the Study Team did not attempt to gather information on businesses in more remote areas further away from the road, and instead focused on businesses in Keshim and Faizabad where the Mid-Point data was collected well. This meant that the Post-Project data will have a valid point of comparison and the indicator will only measure business income changes for businesses in Keshim and Faizabad and not be representative of businesses from the entire ZOI.
	3. Response rate for questions asking about business sales and income increased tremendously in the Post-Project Study. In the Mid-Point Study, about 46 percent of respondents gave answers regarding sales in the last 6 months, with an even lower number of responses to questions regarding total expenditures and transport costs. In the Post-Project Study, 86 percent of respondents were able to give answers for all questions regarding sales in the last 6 months, total expenditures, and transport costs.	3. The effect of non-response to sensitive income questions should be replicated in both studies; however, the 40 percent increase in response rate is likely due to different enumerator training yielding greater success. Therefore, we cannot claim that the any bias from non-response is canceled out. Since much of the data from the Mid-Point Study is invalid, this would bias the data in a downward direction so that the Post-Project data is more representative of the ZOI's population and thus changes observed are slightly overestimated.
5. Household Incomes	1. There was a sizable portion of respondents who did not answer questions regarding income. Of the 467 households surveyed, only 64 percent provided information on income. 2. In the Mid-Point Study, sampling in the spring versus the winter showed to have an influence on reported income and expenditures. Given that the households in the spring were naturally residing in more remote areas, the correlation between seasonality and income could not be determined.	1. The effect of non-response to sensitive income questions is replicated in both studies, thereby eliminating any bias observed in the change in income as representative to those who did not respond. 2. All of the Post-Project Study household surveys were conducted in the winter months. Therefore, to mitigate difference observed in seasonal reporting, the Study Team included only winter households from the Mid-Point Study in the comparison analysis.

Indicator	Issue	Mitigation and Implications
6. Vehicle Operating Costs	1. The Study Team implemented a non-statistical sampling technique to collect responses from vehicles with enumerators standing along the road stopping passing vehicles. This sample may not be representative of the actual traffic using the K-F Road as some types of vehicles or drivers with certain driving habits may have been more or less likely to be driving at particular times and to stop during those times 2. Due to a limitation in the Vehicle Operator survey instrument design, the team was not able to accurately measure VOCs incurred solely from driving on the K-F Road.	1. Replicating the same sampling technique in the Post-Project Study reduces any systematic sampling error, making a detected change likely representative of the population of drivers who stopped. 2. The Study Team created a measure for VOCs per kilometer driven on the K-F Road as a consistent unit of measurement across time. The team only included vehicles operators reporting frequent K-F Road use by these standards in the analysis for both studies.
7. Travel Times	1. The traffic counts conducted at the time of the road's rehabilitation included an abundance of in-city traffic at the Faizabad end of the road (see section on Traffic Volume for more information).	1. To eliminate an upward bias of over-counting traffic in Faizabad city, the Study Team decided to use only traffic counts from the Keshim-side of the K-F Road for analysis requiring the use of traffic counts. This issue pertains to Indicators 8, 10, and 11 as well.
	2. A non-statistical sampling technique was used to collect responses from taxis and buses at established departure points. 3. For buses, 37 percent (7 buses) in the Post-Project Study and all 8 buses in the Mid-Point Study were categorized as minibuses if reported carrying fewer than twenty passengers.	2. Replicating the data collection techniques in both studies reduces any systematic sampling error. 3. We would expect travel times for minibuses to be lower than those for large buses. However, the mean travel times for passengers traveling by bus and minibus only differed slightly; thus, our analysis was not biased by the sub-types of bus used in both studies.
8. Passenger Fare Costs	The sampling technique used to collect data for this indicator faces similar limitations to those discussed above for Indicator 7.	As described above, replicating the data collection techniques in both studies reduces any systematic sampling error.
9. Cost of Freight Transport	1. The low number of observations in the Mid-Point Study ultimately made it difficult to detect statistically significant changes in cost. Furthermore, the number of observations for the Mid-Point Study and the Post-Project Study may not be representative of freight truck travel in regards to direction, time of day, or other external characteristics that may influence traffic flow. 2. A non-statistical sampling technique was used to collect data for this survey with surveyors stopping trucks driving on the K-F Road. Enumerators did not record the number of freight truck operators that refused to stop. Thus, certain characteristics of those drivers that refused to participate in the survey are unknown.	1. Although truck traffic increased with the completion of the road, this does not change the fact that in the Mid-Point Study insufficient observations made it impossible to establish statistical significance and further challenges claims of representativeness. Enumerators were instructed to conduct surveys at the same time of day which would minimize bias due to increased traffic flows at certain hours of the day for both studies. 2. Replicating this technique in both studies reduces any systematic sampling error, making detected changes likely representative of the truck drivers who stopped.

Indicator	Issue	Mitigation and Implications
10. Freight Volume	The Study Team conducted the analysis of this indicator to include average daily traffic, average daily tons and average cost per ton per kilometer over a specific 103 kilometer length of road. This assumption limits the data so that other trends and respective analyses have not been considered.	The method of analysis employed was replicated for both studies, thus reducing any systematic sampling error in our results and making detected changes in freight volume likely representative of the subset of truck drivers who stopped.
11. Cost of Informal Payments	1. To ensure the greatest sample size of drivers on the K-F Road, the enumerators positioned themselves along the road and near urban city areas. The majority of surveys enumerated were completed in Faizabad and Argo districts (56 percent combined). This would provide a sample more representative of the Faizabad end of the road. That is, it would capture more of the traffic traveling to and from Faizabad which might bias driver information to those transporting goods to and from the provincial seat. 2. There may be an inherent bias in the pool of respondents that were enumerated for the Vehicle Operator Survey. Drivers who stopped for enumerators holding clipboards along the K-F Road may have appeared official and thus may have stopped for the same reasons they stopped and paid informal tolls, resulting in a potential upward bias.	1. The sampling technique was replicated in both studies, thus, any bias in the data due to an overly urban and Faizabad-end sample would not present in our post-project analysis. 2. Replicating this technique in the Post-Project Study reduces any systematic sampling error, making a detected change likely representative of the population of drivers who stopped. Ultimately, if there is any difference between drivers that chose not to stop versus drivers that did, and that different is correlated with informal payments, this will bias the results in an unknown way in making claims for the wider population of vehicles.
12. Travel Time to Health Clinics	A large portion of the households answered "I don't know" to distance to health facilities. These households were both located farther from the K-F Road and the nearest city. This could result in a bias of documenting health facility travel times for households closer to roads and cities.	The bias present in the Mid-Point Study would also be present in the Post-Project Study and thus not affect our results.
14. School Attendance Rates	1. In the Mid-Point Study, the estimate of school-age females was based on a 50:50 distribution determined by the percentage distribution of males for the age groups 0 to 5 and 6 to 18. Therefore, our comparative analysis is slightly limited in that we do not have exact mid-point population data on school-age females and had to rely on estimation.	1. In the Post-Project Study, a question was included to collect data on females aged 6 to 18. It is not likely the estimation severely underestimated or overestimated the number of school-aged females; however, we cannot be certain that the changes perceived between mid-point and post-project are based on completely accurate measures of school-age female populations.

AFGHANISTAN INFRASTRUCTURE AND REHABILITATION PROGRAM

KESHIM-FAIZABAD ROAD SOCIO-ECONOMIC POST-PROJECT STUDY REPORT

APPENDICES

APPENDIX 1: METHODOLOGY

1.1 TRANSLATION

The instruments were translated to Dari from English. These instruments were then back-translated to English by a different translator to verify the integrity of the translated meaning. The Study Team then worked with translators to reconcile any inconsistencies between the translated and original English versions. Finally, survey managers from communities within the ZOI made comments and suggestions on words used in the translated version while taking part in survey manager training. Final revisions were made as necessary. In addition, the advantage of conducting a pre- and post-evaluation study is that any issues with translation and/or question phrasing that appeared in the Mid-Point Study could then resurrected in the Post-Project Study. Nevertheless, it is important to maintain validity in data collection so that questions did vary study to study. If any questions were added in the post-project phase, they were added at the end of sections so as not to affect respondents' answer patterns and in order to collect additional information needed.

1.2 TRAINING

In order to assure quality and consistency in survey execution, all enumerators and survey managers were trained on the Study Team's specific survey instruments and sampling strategy. Although some enumerators were already experienced in survey implementation skills training, such as handling and use of GPS units, was essential. The Study Team retained technical control over training the subcontractor's survey personnel. The LBG Economist and Community Development Team Leader conducted and oversaw all training sessions, which were completed in Kabul.

Training was done in two stages. First, the survey managers underwent a four-day training program, and then the enumerators went through the same program. The survey managers played an active role in facilitating enumerator training and often participating in group-led training where they could start to assume their managerial positions not only in survey implementation but to ensure high quality data collection and recording was in place. Trainings were structured by instrument. Each instrument was introduced and then conducted from start to finish in a simulated class environment with the instructor acting as the respondent. This allowed the instructor to give alternate answers, teaching the survey managers and enumerators how to quickly deal with difficult answers. Then enumerators practiced in pairs with each taking the turn of respondent and enumerator. Then enumerators were instructed to practice giving the instrument to a neighbor or family member that evening as homework. On the following day, practice surveys were corrected for enumeration errors, and common mistakes were highlighted and clarified. Personnel unable to consistently follow the guidelines and apply the survey as instructed were dismissed. Upon completion of training, the enumerators and survey managers were each issued a manual detailing all the rules introduced during training. Two versions were distributed, one for enumerators and one for survey managers, as appropriate.

1.3 SURVEY MANAGEMENT

The subcontractor structured their survey personnel into teams of four enumerators. Each team was overseen by a survey manager, who was, in turn, overseen by the Program Manager. Finally, quality was assured by an expatriate Program Director, most often an LBG Economist from the Washington, DC office.

Although field survey management was left to the subcontractor, the Study Team mandated the use of certain tools to assure smooth operation and high data quality. These included:

i. Instrument Control Logs – This is a tool that was used to track the chain of possession of all copies of the instruments issued to the subcontractor.

ii. GPS Units – GPS units were distributed to enumerators. The Program Director entered the GPS coordinates for all household sampling points and their alternates. The enumerators used the GPS units to locate the households where surveys needed to be conducted. The sampling points were grouped by polygon, and enumerators were instructed to conduct one villager elder survey in each polygon as well as a pre-determined number of business surveys.

iii. Sampling Worksheets – To guide consistent application of sampling methods and in order to assess how well these methods were carried out, step-by-step worksheets were issued for the household and business surveys.

1.4 DATA ENTRY

Data entry was carried out by four data entry staff using CS Pro.[118] The Data Entry Manager oversaw all four data entry staff and positioned himself to either share an office or work close by so that he could periodically conduct spot-checks for data quality assurance. The CSPro software allows a number of controls that limit error in the data entry process by rejecting invalid responses. Further, the software enables a double-entry validation check so that each survey can be entered twice by different operators and then automatically on-the-spot checks for discrepancies. This was conducted on a daily basis at the end of the day. Double-entry allowed data entry staff to be warned when a value conflicts with the one previously entered and prompts them to re-check the value and enter it again. Finally, a system of codes was used to track enumerator errors such as blanks (-222) and invalid responses (-333) to make sure that they were traceable to the point at which the survey was processed.

1.5 DATA CLEANING

During data cleaning, all variables were screened for extreme values and general logical congruence. Questionable values were sent back to the field for verification with the original instrument. The overall data entry error for all data was roughly ten percent. More often than not, any data entry issues could be resolved with hard copy survey validation. If the error turned out to be on the enumeration side, then the proper code was replaced for the variable value to note this (either -222 or -333). Data cleaning was conducted using STATA statistical software.

1.6 DATA ANALYSIS

A team of Economists based in Washington, DC conducted the data analysis. All results were audited using an internal quality assurance process to assure that calculations were replicable and appropriately treat outliers, non-response, averaging with zeros and other data issues.

For example, outliers remaining after verification were handled on a case by case basis in accordance with generally accepted statistical principles. Average values are highly sensitive to outliers, so in situations where this was the case, the Study Team used the median value or presented the mean and median together. It also tested to see if any statistical conclusion hinged on inclusion or exclusion of potential outliers. For estimation of aggregate values for the population, the mean was necessarily used, and therefore these estimates are sensitive to extreme values. Confidence intervals were observed to the 95 percent to show the certainty surrounding these estimates.

Any exceptions discovered in the quality assurance process were corrected and revised for a second round of quality assurance before indicator values were finally accepted and reported here. Analysis was conducted using STATA statistical software and MS Excel.[119]

[118] A freeware data entry program created by US Census, available here: http://www.census.gov/ipc/www/cspro/

[119] It is important to note that for post-project comparison analysis, in many cases, the Mid-Point indicator values had to recalculate for various reasons. See individual sections on Indicators for more information.

APPENDIX 2: INSTRUMENTS

APPENDIX 2: INSTRUMENTS

2.1 HOUSEHOLD SURVEY

Survey Number: KF2010HH

IRP Keshim–Faizabad Road Follow Up Survey:

Household Module

A1	**Village/City Identification**	
A2	**District Identification**	
A3	**KM Along the Road**	
A4	**GPS Point**	
A5	**Enter the last number on your cell phone's clock**	

[ENUMERATOR SHOULD SIGN AND DATE BEFORE STARTING SURVEY. SURVEY MANAGER WILL SIGN AFTER CHECKING SURVEY FROM THE FIELD. DATA ENTRY OPERATOR WILL SIGN AFTER SURVEY IS ENTERED.]

		Name	Signature	Date (M/D/Y)	ID Code
A6	Enumerator				
A7	Survey Manager				
A8	Data Entry				

		Result Code	Enter Result Code	Start Time	End Time
A8	First Visit	Fully conducted……..1 Partially conducted……..2 Not conducted for security reasons……3 Come-Back…….....4 Unavailable…….....5 Refusal…….....6			
A9	Second Visit	Fully conducted……..1 Partially conducted……2 Not conducted for security reasons……3 Come-Back…….....4 Unavailable…….....5 Refusal……...6			

[IF TWO ATTEMPTS ARE UNSUCCESSFUL OR THERE IS A REFUSAL, SELECT A REPLACEMENT HOUSE AND BEGIN WITH B1.]

		Result Code	Enter Result Code	Start Time	End Time
B1	First Visit	Fully conducted……..1 Partially conducted……..2 Not conducted for security reasons……3 Come-Back…….....4 Unavailable…….....5 Refusal…….....6			
B2	Second Visit	Fully conducted……..1 Partially conducted……2 Not conducted for security reasons……3 Come-Back…….....4 Unavailable…….....5 Refusal……...6			

[IF YOU ARE UNABLE TO CONDUCT THE INTERVIEW AFTER TWO ATTEMPTS WITH THE INITIAL HOUSEHOLD AND REPLACEMENT HOUSEHOLD, GIVE THIS SURVEY TO YOUR MANAGER AND START OVER WITH A NEW SURVEY.]

[At this point, please begin the interview by saying]
Good Afternoon, my name is_____. Could I please speak with the head of household*[the person in the household who is the primary breadwinner and makes most of the financial decisions]*?
[If the head of household is not available, please interview the household member who makes the most financial decisions.]

My name is …… and I came here on behalf of the company that constructed the KF Road. I am here to ask you some questions regarding the current changes which have happened in your daily life due to the road.

This survey is designed to acquire information from the household regarding the type of changes which have taken place in your daily life. We are very kindly requesting your participation in this survey and hope you will answer our questions.

Now, if you have any questions regarding this survey please let me know.
[If asked, the survey will take approximately one hour.]

C1. May I begin now? Yes……..1 No……..2 ***[Enter code and skip to S7]***
[Enter Code]

Z1. How many people live in this compound?	**Z2.** How many families live in this compound?	**Z3.** How many households live in this compound? *[If respondent's answer is one, enter number and skip to D1]*	*[If the respondent does not know or understand what a household is, then refer to D3 and say,"A household is defined as a group of people living under one roof and sharing financial resources."]*
[Enter Number]	*[Enter Number]*	*[Enter Number]*	

Z4. Household Code	**Z5.** What is the name of the head of each household?	**Z6.** *[Enter the number from A5.]*
1		
2		
3		
4		
5		
6		

[Utilizing the Numbers from Z3 and Z6, circle the appropriate number in the white area of the table below. This number refers to the household code in Z4. This is the household that you should interview. Please ask to interview the head of that household listed in Z5.]

Number of households from Z3		**Last Number on your digital clock from Z6**									
		0	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**
2		1	2	1	2	1	2	1	2	1	2
3		1	2	3	1	2	3	1	2	3	2
4		1	2	3	4	1	2	3	4	3	4
5		1	2	3	4	5	1	2	3	4	5
6		1	2	3	4	5	6	5	3	1	4

[ANSWER CODES FOR USE THROUGHOUT ENTIRE SURVEY]
Don't Know…..-777
Not Applicable… -888
Refuse to Answer….-999

D1. *[HOUSEHOLD EDUCATION]* *[Please say]* **Now I will ask you some basic information about the members of your household. A household is defined as a group of people living under one roof and sharing financial resources.**	**D2.** How many people live in your household that are over the age of 18?	**D3.** How many males live in your household that are from the ages of _____?	**D4.** How many females under the age of 18 live in your household? *[Do not ask for females over 18]*	**D5.** Do all MALE household members ages 6 to 18 currently attend school? *[Do Not Read]* Yes……1 *[Enter code and skip to D8]* No…….2	**D6.** How many MALE household members ages 6 to 18 do not currently attend school?	**D7**. What is the primary reason that these Male Children do not currently attend school? *[Do Not Read]* Children have to work ….……1 School is too far ….……..……...2 Cost of travel too expensive……...3 School fees too expensive……..4 School is poorly run……..……..5 School does not bring any benefit……..6 Due to security reason……...7 Other (Specify_____)…….……..…..8
	[ENTER NUMBER]	*[ENTER NUMBER]*	*[ENTER NUMBER]*	*[ENTER CODE]*	*[ENTER NUMBER]*	*[ENTER CODE]*
		0-5	**0-18**			
		6-18				
		Over 18				

D8. Do all FEMALE household members ages 6 to 18 currently attend school? *[Do Not Read]* Yes……1 *[Enter code and skip to D11]* No…….2 *[Go to next question]* *[If -777, -888, -999, skip to D11]*	**D9.** How many FEMALE household members ages 6 to 18 do not currently attend school? *[Do Not Read]* **If there is no FEMALE household members ages 6 to 18 in the family, skip to D11**	**D10**. What is the primary reason that these Female Children do not currently attend school? *[Do not Read]* Children have to work ……1 School is too far ….……..……..2 Cost of travel too expensive……..3 School fees too expensive……4 School is poorly run……..…5 School does not bring any benefit……6 Due to security reason……...7 Other (Specify_____).....8	**D11.** Do any household members attending school use the Keshim-Faizabad road to get to school? *[Do Not Read]* Yes……1 No…….2 *[If 2, -777, -888, -999, skip to D14]*	**D12.** How many household members attending school use the Keshim-Faizabad road to get to school?	**D13.** For household members using the Keshim-Faizabad road, how many kilometers do they travel to attend school?	**D14.** How many school age females currently live in your household?

[ENTER CODE]	*[ENTER NUMBER]*	*[ENTER CODE]*	*[ENTER CODE]*	*[ENTER NUMBER]*	*[ENTER KMs]*	*[ENTER NUMBER]*

E1. *[After observing the dwelling, please enter one of the appropriate codes from below.]* House made of mud/clay…....1 House made of brick……2 House made of cinder block….3 House made of concrete…….. 4 House made of corrugated metal…….....5 Tent……..….6 Other (Specify_____).....7	**E2.** *[DWELLING CHARACTERSISTICS AND RESIDENTIAL STATUS]* *[Please say]* **Now I would like to ask you about your dwelling and your residential status.**	**E3.** *[Before beginning this section, please read the following definition of dwelling to the respondent]* **A dwelling is a space or a collection of spaces in which your household resides. If you reside in a space with another household, which is not a part of your family (for example, if another family lives in the same house, but does not share financial resources with you), please only refer to your household's specific space when answering the following questions.**	**E4.** How many rooms does your dwelling have?	**E5.** How long has your household resided in this dwelling?		**E6.** How long has your household resided in this village/city?		**E7.** Have you returned to this village/city after living somewhere else previously? *[Do Not Read]* Yes……..1 No……..2
[ENTER CODE]			*[ENTER NUMBER OF ROOMS]*	*[ENTER YEARS AND MONTHS. If no months or years given, enter 0]*		*[ENTER YEARS AND MONTHS. If no months or years given, enter 0]*		*[ENTER CODE]*
				a. Years	*b. Months*	*a. Years*	*b. Months*	

[END DWELLING CHARACTERISTICS AND RESIDENTIAL STATUS]

F1. ***[HOUSEHOLD CONSUMPTION AND WEALTH]*** ***[Please Say]*** **Now I would like to ask you about the consumption for your household.**	**F2**. How much money did your household spend on food last month?	**F3.** Does your household grow some of the food it eats? ***[Do Not Read]*** Yes.....1 No.....2 ***[Enter code and skip to F5]***	**F4.** How much of your food consumed does your household grow? ***[Read List]*** All……1 Most…….2 Half……..3 Some…….4 None…….5	**F5.** How far away is the nearest bazaar to you?		**F6.** How do you usually get to the nearest bazaar? ***[Do Not Read]*** Bus……...…..1 Minibus……...2 Car…….....3 Jeep…….....4 Van…….....5 Truck……..……6 Motorcycle.....7 Tractor ….....8 Trailer ..…… Donkey, Mule, Horse……. Walk……1 Rickshaw…….. Other (Specify _____)…1	**F7.** How long does it take you to get to the nearest bazaar?		**F8.** Do you have to use the Keshim–Faizabad Road to get to the nearest bazaar? ***[Do Not Read]*** Yes.....1 No.....2
	[ENTER IN AFS]	***[ENTER CODE]***	***[ENTER CODE]***	***[CIRCLE METERS or KMs AND ENTER NUMBER]***		***[ENTER CODE]***	***[Enter Hours and/or Minutes]***		***[ENTER CODE]***
				Meters	***KMs***		***a. Hours***	***b. Minutes***	

	G1. In the past month (30 days) have you or anyone in your household paid for _____? *[Reach each item in list to replace _____]* *[Do Not Ask Yes or No]* Yes.....1 No.....2	**G2.** How much did your household pay for _____ in the past month (30 days)? *[Skip _____ if G1 =2, -777, -888, -999. Do not leave blank, put zero if skip]*
Item	*[ENTER CODE]*	*[ENTER IN AFS]*
1. Body Soap		
2. Clothing Soap		
3. Toilet Paper		
4. Shampoo		
5. Petrol		
6. Diesel		
7. Kerosene (*khak*)		
8. Fire Wood/Charcoal		
9. Batteries		
10. Mobile Phone Minutes		
11. Public Transportation (e.g., bus fare, taxi, donkey, etc.)		
12. Electricity		
13. Satellite Fee		
14. Cigarettes		

	H1. In the past 12 months, have you or anyone in your household purchased or paid for _____? ***[Do Not Read]*** Yes……1 No……..……2	**H2.** In the past 12 months, how much did your household pay for _____? ***[Skip _____ if H1 =2, -777, -888, -999. Do not leave blank, put zero if skip.]***
Item	***[ENTER CODE]***	***[ENTER IN AFS]***
1. Clothing/Fabric		
2. Shoes		
3. School Fees (for public or private education)		
4. School Supplies		
5. Medicines		
6. Health Care Services		
7. Housing Maintenance (repairs & improvements)		
8. Housing Rent		
9. Weddings, Religious Events		
10. Taxes		
11. Debt		

11. ***[Please say]*** **Now I would like to ask you about some of the goods in your household.**		**12.** Does your household own a _____? ***[Do Not Read]*** Yes.....1 No.....2
	Item	***[Enter Code]***
	1. Television	
	2. Radio	
	3. VCR / DVD Player	
	4. Mobile Phone	
	5. Computer	
	6. Refrigerator / Full-size Freezer	
	7. Satellite Dish	
	8. Fan	
	9. Air Conditioner	
	10. Heater	
	11. Power Generator	
	12. Kerosene or Paraffin Stove	
	13. Electric Stove	
	14. Kerosene or Paraffin Lantern	
	15. Battery-Powered Lamp	
	16. Bicycle	
	17. Sewing machine	
	18. Iron	

[END CONSUMPTION AND WEALTH]

J1. ***[VEHICLE OWNERSHIP ASSESMENT]*** ***[Please say]*** **Now I would like to ask you about any vehicles your household owns.**	**J2.** Are there any members of your household who have a motorized vehicle? ***[Do Not Read]*** Yes.....1 No.....2 ***[Enter code and skip to K1]***	**J3.** Please tell me all of the types of motorized vehicles that members of your household own or lease (up to 3). ***[Do Not Read]*** Bus……...……...1 Minibus……...2 Corolla Car…...……...3 Jeep……...4 Van…….....…….....5 Truck……...……6 Motorcycle…….....7 Tractor …….....8 Other (Specify _____)…9 Don't Know……-777 ***[Enter code and skip to K1]*** Refuse to Answer…-999 ***[Enter code and skip to K1]***	**J4.** Is this _____ owned or leased? ***[Do Not Read]*** Owned……...1 Leased……..…2	**J5.** Last **summer**, how much money did your household spend on repairs and maintenance for this _____?	**J6.** Last **winter**, how much money did your household spend on repairs and maintenance for this _____?	**J7.** Last **summer**, how much money did your household spend on fuel for this _____?	**J8.** Last **winter**, how much money did your household spend on fuel consumption for this _____?
[ENTER CODE]	***[ENTER CODE(S)]***	***[ENTER CODE]***	***[ENTER IN AFS]***	***[ENTER IN AFS]***	***[ENTER IN AFS]***	***[ENTER IN AFS]***	
	1.						
	2.						
	3.						

[END VEHICLE OWNERSHIP ASSESMENT]

K1. ***[OWN AGRICULTURAL/ANIMAL HUSBANDRY PRODUCTION AND TRANSPORT]*** ***[Please say]*** **Now I would like to ask you about your household's own agricultural production and how your household transported its goods to the bazaars in the last 12 months.**	**K2.** During the last 12 months, has your household cultivated any agricultural crops? ***[Do Not Read]*** Yes.....1 No.....2 ***[Enter code and skip to N1]*** Don't Know……..-777 ***[Enter code and skip to N1]*** Refuse to Answer..-999 ***[Enter code and skip to N1]***	**K3.** During the last 12 months, how many jeribs did your household use for cultivation?	**K4**. Do you use an irrigation system or rain? Irrigation.....1 Rain.....2 ***[Enter code and skip to K6]*** Both……...3	**K5.** How many Jeribs of land used an irrigation system in the last 12 months?	**K6.** In the past 12 months, did you use _____? ***[Do Not Read]*** Yes…….....1 No…..…….…..…2 ***[If ALL responses are 2, -777, or -999, enter code and skip to L1]***	**K7.** In the past 12 months, how much money did you spend on _____? ***[Skip to L1 if K6=2,-777, or -999]***
	[Enter Code]	***[Circle Jeribs or Biswa and Enter Number]*** ***Jeribs*** ***Biswa***	***[Enter Code]***	***[Circle Jeribs or Biswa and Enter Number]*** ***Jeribs*** ***Biswa***	***[Enter Code]***	***[Enter in Afs. Enter "0" if there were no expenditures on item.]***
					1. Seeds	
					2. Fertilizer	
					3. Pesticides	

[AGRICULTURAL/ ANIMAL HUSBANDRY PRODUCTION CONTINUES ON NEXT PAGE]

L1. Please tell me the agricultural crops your household harvested during the last 12 months, starting with the crop you produced the most. Examples include fruits, nuts, grains or other products you grew and sold. **(Record up to 5).**	**L2.** Did your household sell _____ during the last 12 months? ***[Do Not Read]*** Yes…….....1 No……...…..…2 ***[If ALL responses are 2, -777, or -999, enter code and skip to L5]***	**L3.** How much _____ did your household sell during the last 12 months? ***[Skip _____ if L2= 2, -777, or -999]***		**L4.** What was the total value of your household's _____ sales in the last 12 months? ***[Skip _____ if L2= 2, -777, or -999]***	**L5.** Did your household give agricultural goods as an in-kind payment during the last 12 months? ***[Do Not Read]*** Yes…….....1 No……...…..…2 ***[Enter code and skip to M1]***	**L6.** What was the value of your household's in-kind payments of agricultural crops in the last 12 months?
[Enter Crops]	***[Enter Code]***	***[Enter quantity and unit if L2=1.]***		***[Enter in Afs]***	***[Enter Code]***	***[Enter in Afs]***
		a. Quantity	***b. Unit***			
1.						
2.						
3.						
4.						
5.						

[AGRICULTURAL/ANIMAL HUSBANDRY PRODUCTION CONTINUES ON NEXT PAGE]

M1. *[Please note the highest valued crop from L4 and enter it below.]* *[If L4 is Blank for ALL responses, then SKIP to N1]*	**M2.** Where does your household sell _____? *[DO NOT READ LIST]* Road-side Stand…..…1 Nearest Bazaar…..…..2 Bazaar in Keshim…..…3 Bazaar in Faizabad..…..4 Bazaar in Kabul…..…5 Businessman…..…..…6 Other…..……..…..7 (Specify_____)	**M3.** How far away does your household sell _____? *[Circle Meters or KMs and enter number. If distance NOT KNOWN, ask for the name of the destination village, town, or city.]* *a. Meters or KM* | *b. Name of Village/Town /City*	**M4.** How does your household usually transport _____ to be sold? *[DO NOT READ LIST]* Bus……...……...1 Minibus……...2 Car……...……...3 Jeep……...4 Van……...……...5 Truck……...……6 Motorcycle…….....7 Tractor Trailer…….....8 Bicycle…….....…9 Walk……...……...…..10 Walk with cart…….…....11 Animal pulled (donkey, mule, horse)….....12 Animal carried (donkey, mule, horse)……13 Rickshaw……14 Other ……....15 (Specify_____)	**M5.** Does your household use the Keshim--Faizabad Road to transport _____? *[DO NOT READ LIST]* Yes….....1 No…..……..…..…..…2
[Enter Crop of Highest Value from L4]	*[Enter Code]*		*[Enter Code]*	*[Enter Code]*
1.				

[AGRICULTURAL/ANIMAL HUSBANDRY PRODUCTION CONTINUES ON NEXT PAGE]

N1. Does your household raise any animals for selling or eating? ***[Do Not Read]*** Yes.....1 No.....2 ***[Enter code and skip to P1]*** Don't Know…….-777 ***[Enter code and skip to P1]*** Refuse to Answer….-999 ***[Enter code and skip to P1]***	**N2.** In the past 12 months, how much money did you spend on feed for your animals?	**N3.** Please tell me the primary animals that your household owned during the last 12 months. Examples include sheep, cows, donkeys, camels, chicken, fish or other animals you grew and sold. Please list up to five.	**N4.** Did your household sell any _____ during the last 12 months? ***[Do Not Read]*** Yes…….....1 No…….....…..…..…2 ***[If ALL responses are 2, -777, or -999, enter code and skip to P1]***	**N5.** How many _____ did your household sell during the last 12 months?	**N6.** What was the value of your household's _____ sales during the last 12 months?
[Enter Code]	***[Enter in Afs]***	***[Enter Description of Animals]***	***[Enter Code]***	***[Enter Number of Animals]***	***[Enter in Afs]***
		1.			
		2.			
		3.			
		4.			
		5.			

[AGRICULTURAL/ANIMAL HUSBANDRY PRODUCTION CONTINUES ON NEXT PAGE]

O1. *[Please note the highest valued animal from N6 for the household and enter it below.]* *[If L6 is Blank for ALL responses, then SKIP to P1]*	**O2.** Where does your household sell _____? Road-side Stand…..…..1 Nearest Bazaar ……...2 Bazaar in Keshim…..…3 Bazaar in Faizabad..…..4 Bazaar in Kabul…..…5 Middleman……..…..6 *[If O2=6, skip to P1]* To a neighbor……7 Other…..……..…..8 (Specify_____)	**O3.** How far away does your household sell _____? *[Circle Meters or KMs and enter number. If distance NOT KNOWN, ask for the name of the destination village, town, or city.]* *a. Meters or KM* *b. Name of Village/Town /City*	**O4.** How does your household usually transport _____ to be sold? *[DO NOT READ LIST]* Bus……..……..1 Minibus……...2 Car……...……....3 Jeep……....4 Van……..…….....5 Truck……..……6 Motorcycle…….....7 Tractor Trailer…….....8 Bicycle…….....…9 Walk……..……..…..10 Walk with cart……..…...11 Animal pulled (donkey, mule, horse)….....12 Animal carried (donkey, mule, horse)……13 Rickshaw……14 Other ……....15 (Specify_____)	**O5.** Does your household use the Keshim--Faizabad Road to transport _____? Yes….....1 No…..……..…..…..…2
[Enter Animal of Highest Value]	*[Enter Code]*	*[Circle Meters or KMs and enter number. If distance NOT KNOWN, ask for the name of the destination village, town, or city.]* *a. Meters or KM* *b. Name of Village/Town /City*	*[Enter Code(s)]*	*[Enter Code]*
1.				

[END OF AGRICULTURAL/ANIMAL HUSBANDRY PRODUCTION SECTION]

P1. *[NON-AGRICULTURAL HOUSEHOLD ACTIVITIES AND LIVELIHOOD]* *[Please say]* **Now, I am going to ask you about the different kinds of income-generating activities that members of this household are engaged in. The next few questions are in regards to income you receive for any work that is not from your own farm production. This may include government work, non-farm labor, handicrafts, and labor on other household's farms.**	**P2.** During the past 12 months, did any member in your household receive any income from sources other than your farm? *[Do Not Read]* Yes……..…..…..1 No…..……...…..2 *[Enter code and skip to P4]* Don't Know……..-777 *[Enter code and skip to P4]* Refuse to Answer...-999 *[Enter code and skip to P4]*	**P3.** During the past 12 months, what was the total income members of your household received from sources other than your farm?	**P4.** In the past year, did your household receive any in-kind payments for any activities? *[Do Not Read]* Yes…….....…..1 No…..……..2 *[Enter code and skip to P6]* Don't Know……-777 *[Enter code and skip to P6]* Refuse to Answer...…..-999 *[Enter code and skip to P6]*	**P5.** During the past 12 months, what was the monetary value of goods that your household received in-kind?	**P6.** Was anyone in your household employed by the company that constructed the Keshim-Faizabad road? *[Do Not Read]* Yes…….....…..1 No…..……..2 *[Enter code and skip to Q1]*	**P7.** During the past 12 months, what was the total income members of your household received from the company that is constructing the Keshim-Faizabad road?
	[Enter Code]	*[Enter in Afs]*	*[Enter Code]*	*[Enter Afs]*	*[Enter Code]*	*[Enter Afs]*

[END NON-AGRICULTURAL HOUSEHOLD ACTIVITIES AND LIVELIHOOD]

Q1. ***[NON-AGRICULTURAL HOUSEHOLD TRANSPORTATION]*** ***[Please say]* Now I would like to ask you about transport needs related to work.**	**Q2**. Does anyone use the Keshim–Faizabad Road to travel to his/her place of work? ***[Do Not Read]*** Yes……...…..…..1 ***[Go to next question]*** No……..…..2 ***[Enter code and skip to Q6]*** Don't Know……...-777 ***[Enter code and skip to R1]*** Refuse to Answer....-999 ***[Enter code and skip to R1]***	**Q3.** What are the names of individuals in your household that travel to work on the Keshim-Faizabad road? List up to three.	**Q4.** In general, how many times a week does _____ use the Keshim–Faizabad Road to travel to their place of work? ***[Read List]*** Every day....……..……1 3–5 Days/Week… …2 Once a week……...3 Every other week.....…4 Once a Month…...….5 Never……6	**Q5.** How far does _____ travel to work? ***[Skip to R1]***		**Q6.** If he/she does not use the Keshim-Faizabad Road to travel to his/her place of work, how does he/she get to work? I go by back roads.....1 My work is close to my village/home.....2 He/she works on his/her own farm.....3 He/she works on his/her neighbor's farm.....4 He/she is unemployed....5 Other, specify.....6 ***[If -777, -888, -999, skip to R1]***
	[ENTER CODE]	***[ENTER NAME(S)]***	***[ENTER CODE]***	***[" If less than one kilometer, enter 0"; If distance NOT KNOWN, ask for the name of the destination village, town, or city.]***		***[ENTER CODE]***
		1.				
		2.				
		3.				

[END NON-AGRICULTURAL HOUSEHOLD TRANSPORTATION]

R1. ***[HOUSEHOLD TRANSPORTATION FOR HEALTH CARE]*** ***[Please say]*** **Now, I would like to ask you some questions related to health care and transportation.**	**R2.** How many kilometers away is the nearest clinic to you? ***[If less than one kilometer, enter "0"]***	**R3.** How long does it take you to get to the clinic?		**R4.** Do you have to use the Keshim–Faizabad Road to get to the clinic? ***[Do Not Read]*** Yes.....1 No.....2	**R5.** How much does it cost to travel to the clinic? [ONEWAY]	**R6.** In the past 12 months, how many times did members of your household travel to the clinic?	**R7.** How many kilometers away is the nearest hospital to you? ***[If less than one kilometer, enter "0"]***	**R8.** How long does it take you to get to the hospital?		**R9.** Do you have to use the Keshim–Faizabad Road to get to the hospital? ***[Do Not Read]*** Yes.....1 No.....2
	[Enter in KMs]	***[ENTER HOURS AND MINUTES]***		***[Enter Code]***	***[Enter in Afs]***	***[Enter Number of Visits]***	***[Enter in KMs]***	***[ENTER HOURS AND MINUTES]***		***[Enter Code]***
		a. Hours	***b. Minutes***					***a. Hours***	***b. Minutes***	

[HOUSEHOLD TRANSPORT FOR HEALTH CARE CONTINUES ON NEXT PAGE]

S1. How much does it cost to travel to the hospital? [ONE-WAY]	**S2.** In the past 12 months, how many times did members of your household travel to the hospital?	**S3.** In the past year, was there any child born in your household? ***[Do Not Read]*** Yes.....1 No.....2 ***[Enter code and skip to S7]*** Don't Know…... -777 ***[Enter code and skip to S7]*** Refuse to Answer….- 999 ***[Enter code and skip to S7]***	**S4.** Where was the baby born? ***[Do Not Read]*** Traditional healer came to the house……..1 Midwife came to the house…..2 Went to Public Clinic……3 ***[Enter code and skip to S6]*** Went to Private Clinic……...4 ***[Enter code and skip to S6]*** Went to Public Hospital...……5 ***[Enter code and skip to S6]*** Went to Private Hospital.....…6 ***[Enter code and skip to S6]*** Other (Specify_____)....7 ***[Enter code and skip to S7]*** ***[Do Not Read]*** Don't Know…..……-777 ***[Enter code and skip to S7]*** Refuse to Answer.....…....-999 ***[Enter code and skip to S7]***	**S5.** What is the primary reason for not going to a health care facility? ***[Do Not Read]*** Treatment too expensive.....1 ***[Enter code and skip to S7]*** Facility/provider too far….2 ***[Enter code and skip to S7]*** Travel to facility/provider too expensive…..……3 ***[Enter code and skip to S7]*** Other (Specify_____)...4 ***[Enter code and skip to S7]***	**S6.** What is the primary reason for going to this facility/provider? ***[Do Not Read]*** Closest to dwelling……1 Best treatment……2 Most affordable treatment……..3 Most affordable to travel to…...4 Most trusted……..……..5 Other (Specify_____).....6	**S7.** ***[END SURVEY]*** **This concludes our survey. Thank you for your participation!**
[Enter in Afs]	***[Enter Number of Visits to Hospital]***	***[Enter Code]***	***[Enter Code]***	***[Enter Code]***	***[Enter Code]***	

APPENDIX 2: INSTRUMENTS

2.2 VEHICLE OPERATOR SURVEY

Survey Number: KF2010VO_____

IRP Road Follow Up Survey: Vehicle Operator Module

A1	**Village/City Identification**	
A2	**District Identification**	
A3	**KM Along the Road**	
A4	**GPS Point**	
A5	**Time**	**Start:**
		End:

		Name	Signature	Date (M/D/Y)	ID Code
A6	Enumerator				
A7	Survey Manager				
A8	Data Entry				

[At this point, please begin the interview by saying]
My name is …… and I came here on behalf of the company that constructed the KF Road. I am here to ask you some questions regarding the current changes which have happened in your daily life due to the road.
This survey is designed to acquire information from drivers regarding the type of changes which have taken place in your daily life. We are very kindly requesting your participation in this survey and hope you will answer our questions.
Now, if you have any questions regarding this survey please let me know.
[If asked, the survey will take approximately 20 minutes.]

B1. May I begin now? Yes……..1 No……..2 ***[Enter code and skip to H8]***
[Enter Code]

[ANSWER CODES FOR USE THROUGHOUT ENTIRE SURVEY]
Don't Know…..-777
Not Applicable… -888
Refuse to Answer….-999

First Vehicle Operator Survey Attempt ***[Fill-in for ALL Attempts]***		**Code**
C1. Date (M/D/Y)		
C2. Result	Fully conducted……..1 Partially conducted…….2 ***[Skip to C5 for Second Attempt]*** Not conducted for security reasons……3 ***[Skip to C5 for Second Attempt]*** Refusal……....4 ***[Skip to C5 for Second Attempt]***	
C3. Gender ***[Enter Code, Do Not Ask]***	Male……....1 Female…….....2	
C4. Vehicle Type ***[Enter Code. Do Not Ask]***	Bus…….……..…..…..1 Minibus…….....2 Car……..……3 4-Wheel Drive…….....4 Van……..……..……...5 Pick-Up Truck……..…..…....6 Motorcycle…,,,,,,.....7 2-Axle Truck……..……8 3-Axle Truck ……..…..…..…....9 Tractor Trailer……..……..10 Other (Specify_____)……..11	

Second Vehicle Operator Survey Attempt ***[Fill-in for ALL Attempts]***		**Code**
C5. Date (M/D/Y)		
C6. Result	Fully conducted……..1 Partially conducted…….2 ***[Skip to D1 for Third Attempt]*** Not conducted for security reasons……3 ***[Skip to D1 for Third Attempt]*** Refusal……....4 ***[Skip to D1 for Third Attempt]***	
C7. Gender ***[Enter Code, Do Not Ask]***	Male……....1 Female…….....2	
C8. Vehicle Type ***[Enter Code. Do Not Ask]***	Bus…….……..…..…..1 Minibus…….....2 Car……..……3 4-Wheel Drive…….....4 Van……..……..……...5 Pick-Up Truck……..…..…....6 Motorcycle…,,,,,,.....7 2-Axle Truck……..……8 3-Axle Truck ……..…..…..…....9 Tractor Trailer……..……..10 Other (Specify_____)……..11	

Third Vehicle Operator Survey Attempt ***[Fill-in for ALL Attempts]***		**Code**
D1. Date (M/D/Y)		
D2. Result	Fully conducted……..1 Partially conducted…….2 ***[Skip to D5 for Fourth Attempt]*** Not conducted for security reasons……3 ***[Skip to D5 for Fourth Attempt]*** Refusal……..4 ***[Skip to D5 for Fourth Attempt]***	
D3. Gender ***[Enter Code, Do Not Ask]***	Male……..1 Female…….2	
D4. Vehicle Type ***[Enter Code. Do Not Ask]***	Bus…….1 Minibus…….2 Car……3 4-Wheel Drive…….4 Van……..5 Pick-Up Truck……..6 Motorcycle…,,,,,,,7 2-Axle Truck……..8 3-Axle Truck ……..9 Tractor Trailer……..10 Other (Specify_____)……..11	

Fourth Vehicle Operator Survey Attempt ***[Fill-in for ALL Attempts]***		**Code**
D5. Date (M/D/Y)		
D6. Result	Fully conducted……..1 Partially conducted…….2 ***[Start New Survey]*** Not conducted for security reasons……3 ***[Start New Survey]*** Refusal……..4 ***[Start New Survey]***	
D7. Gender ***[Enter Code, Do Not Ask]***	Male……..1 Female…….2	
D8. Vehicle Type ***[Enter Code. Do Not Ask]***	Bus…….1 Minibus…….2 Car……3 4-Wheel Drive…….4 Van……..5 Pick-Up Truck……..6 Motorcycle…,,,,,,,7 2-Axle Truck……..8 3-Axle Truck ……..9 Tractor Trailer……..10 Other (Specify_____)……..11	

E1. ***[CURRENT TRIP]***	**E2.** What is the purpose of your travel today?	**E3.** In which city/village did your travel originate?	**E4**. To which city/village are you traveling?	**E5.** How far away is your destination from your origin?
[Please say] **I would like to ask some basic questions about your current trip today.**	***[Read List]*** Daily Work.....1 Business trip.....2 Freight.....3 Carry Passengers.....4 School.....5 Shopping.....6 Medical Care.....7 Family Visit.....8 Driving Someone.....9 Other (Specify_____)..10			
	[Enter Code]	***[Enter Name of City or Village]***	***[Enter Name of City or Village]***	***[Enter KMs. If less than one, enter "0"]***

F .	**F .** How much time does it take for you to go from your **origin to your destination?**			**F .** How much will you spend on **fuel** from your **origin to your destination?**	**F .** What is the approximate price of **fuel per liter** you will pay for this trip?
[Please say] **Now I would like to ask you about this road and your fuel costs.**	***[Enter Days, Hours, and Minutes]***			***[Enter Afs]***	***[Enter in Afs]***
	a. Days	***b. Hours***	***c. Minutes***		

F5. In the last month, how many times did you use the Keshim-Faizabad road?	**F6.** In the last month, how many kilometers did you drive on the Keshim-Faizabad road?	**F7.** Last summer, how many times did you use the Keshim-Faizabad road?	**F8.** Last summer, how many kilometers did you drive on the Keshim-Faizabad road?	**F9.** Last winter, how many times did you use the Keshim-Faizabad road? ***[If "0", skip to G1]***	**F10.** Last winter, how many kilometers did you drive on the Keshim-Faizabad road?
[Enter Number]	***[Enter KMs]***	***[Enter Number]***	***[Enter KMs]***	***[Enter Number]***	***[Enter KMs]***

G1. Please tell me how much you spent in total on fuel for this vehicle in the last month**.**	**G2.** Please tell me how much you spent on fuel for this vehicle last **summer.**	**G3.** Please tell me how much you spent on fuel for this vehicle last **winter**.	**G4.** During the last month, what was the approximate price of **fuel per liter**?	**G5.** Last summer, what was the approximate price of **fuel per liter**?	**G6.** Last winter, what was the approximate price of **fuel per liter**?	**G7.** How many cylinders does this vehicle have?	**G8.** How many liters is this vehicle's engine?
[Enter in Afs]	***[Enter in Afs]***	***[Enter in Afs]***	***[Enter in Afs]***	***[Enter in Afs]***	***[Enter in Afs]***	***[Enter Number]***	***[Enter in Liters]***

[END CURRENT TRIP]

G9. [VEHICLE MAINTENANCE] ***[Please say]* Now I would like to ask you some questions about the cost of maintaining your vehicle.**	**G10.** Do you own this vehicle? ***[Do Not Read]*** Yes……..…..1 ***[Enter code and skip to G13]*** No……...……2	**G11**. Do you lease the vehicle? ***[Do Not Read]*** Yes……...……..…1 No…….....…2 ***[Enter code and skip to G13]*** Don't Know…….-777 ***[Enter code and skip to G13]*** Refuse to Answer…....-999 ***[Enter code and skip to G13]***	**G12.** How much do you spend to lease this vehicle each month?	**G13**. Please tell me how much you spent on repairs and maintenance for this vehicle last **month.** ***[Do Not Read]*** Not applicable …..…….. -888 ***[Enter code and skip to H1]***	**G14**. Please tell me how much you spent on repairs and maintenance for this vehicle last **summer.** ***[Do Not Read]*** Not applicable …..…….. -888 ***[Enter code and skip to H1]***	**G15**. Please tell me how much you spent on repairs and maintenance for this vehicle last **winter.**
	[Enter Code]	***[Enter Code]***	***[Enter in Afs]***	***[Enter in Afs]***	***[Enter in Afs]***	***[Enter in Afs]***

[END VEHICLE MAINTENANCE.]

H1. *[SAFETY QUESTIONS]* *[Please say]* **Last, I would like to ask you some questions about safety and security along the road.**	**H2.** Do you ever drive this road at night? *[Do Not Read]* Yes…..……1 *[Enter code and skip to H4]* No……2 Don't Know...-777 *[Enter code and skip to H4]* Refuse to Answer....-999 *[Enter code and skip to H4]*	**H3.** What is the primary reason you do not drive at night? *[Read List]* Cannot see at night…….1 Security (insurgents, bandits, etc.)..2 Condition of road…….…...3 Government restrictions..4 Fear of military (US or Afghan)…..….5 Lack of service station.....6 Other (Specify_____)..…7	**H4.** In the last year while traveling the road, have you had: *[Read List]* Personal goods stolen....1 Vehicle stolen……2 Merchandise stolen……3 Physically injured……....4 Other (Specify_____)…5 None of the above…….6	**H5.** Are you ever stopped on the road to pay official or unofficial charges? *[Do Not Read]* Yes…….....…1 No..……...2 *[Enter code and skip to H8]* Don't Know.….-777 *[Enter code and skip to H8]* Refuse to Answer…..…..-999 *[Enter code and skip to H8]*	**H6.** Along the Keshim-Faizabad road, how many times are you usually stopped per one-way trip?	**H7**. When you are stopped along the road, how much do you typically pay in charges per one-way trip?	**H8.** *[END SURVEY]* *[Please say]* **This concludes our survey. Thank you for your participation!**
	[Enter Code]	*[Enter Code]*	*[Enter Code(s)]*			*[Enter Code]*	*[Enter Number]*	*[Enter in Afs]*	

APPENDIX 2: INSTRUMENTS

2.3 BUSINESS SURVEY

Survey Number KF2010SBIZ_____

IRP Keshim-Faizabad Road Follow Up Survey: Small Business Module

A1	**Village/City Identification**	
A2	**District Identification**	
A3	**KM Along the Road**	
A4	**GPS Point**	

		Name	Signature	Date (M/D/Y)	ID Code
A5	Enumerator				
A6	Survey Manager				
A7	Data Entry				

		Result Code	Enter Result Code	Start Time	End Time
A8	First Visit	Fully conducted…….....1 Partially conducted…….....2 Not conducted for security reasons……3 Come-Back…….....4 Unavailable…….....5 Refusal…….....6			
A9	Second Visit	Fully conducted……..1 Partially conducted…….2 Not conducted for security reasons……3 Come-Back…….....4 Unavailable…….....5 Refusal……...6			

[Please skip this page if you are interviewing a business that has a GPS point]

Z1. Business Code	Z2. Please drive around the village. As you approach a business, enter the name (or a thorough description) of each business.	Z3. *[Look at the time on your cell phone]* 09:53 *[Find the last number and write it below]*	Z4. How many businesses are in the village?
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			
14			
15			

[Utilizing the Numbers from Z3 and Z4, circle the appropriate number in the white area of the table below. This number refers to the business code in Z1. This is the business that you should interview. Please ask to interview the owner of the business listed in Z2.]

Number of businesses from Z4		Last Number on your digital clock from Z3									
		0	1	2	3	4	5	6	7	8	9
2		1	2	1	2	1	2	1	2	1	2
3		1	2	3	1	2	3	1	2	3	2
4		1	2	3	4	1	2	3	4	3	4
5		1	2	3	4	5	1	2	3	4	5
6		1	2	3	4	5	6	5	3	1	4
7		1	2	3	4	5	6	7	5	7	4
8		1	2	3	4	5	6	7	8	6	1
9		1	2	3	4	5	6	7	8	9	7
10		1	2	3	4	5	6	7	8	9	10
11		1	2	3	4	5	7	8	9	10	11
12		2	3	5	6	7	8	9	10	11	12
13		1	3	4	6	7	8	9	11	12	13
14		1	2	3	4	6	7	10	11	13	14
15		2	4	5	7	9	10	11	12	14	15

[At this point, please begin the interview by saying]
Good Afternoon, my name is_____. Could I please speak with the owner or the person who usually runs this business?
[If neither of these people is available, please interview the shop clerk who is there.]

My name is …… and I came here on behalf of the company that constructed the KF Road. I am here to ask you some questions regarding the changes which have happened in your daily life due to the road. This survey is designed to acquire information from the household regarding the type of facilities and changes which have taken place in your daily life. We are very kindly requesting your participation in this survey and hope you will answer our questions.
Now, if you have any questions regarding this survey please let me know.
[If asked, the survey will take approximately 20 minutes.]

B1. May I begin now? Yes……1 No……..2 ***[Enter code and skip to F11]***
[Enter Code]

[ANSWER CODES FOR USE THROUGHOUT ENTIRE SURVEY]
Don't Know…..-777
Not Applicable… -888
Refuse to Answer….-999

C1. ***[Observe – Do not ask… What is the primary sector in which this business operates?]*** ***[Enter code to left and write brief description of business on the right]*** ***[Do Not Read]*** Restaurant……..1 Retail/Trade……..…2 Service……....3 Small-Scale Industry……....4 Other (Specify_____)….5		**C2.** ***[BUSINESS CHARACTERISTICS]*** ***[Please say]*** Now I would like to ask you some basic questions about this business.	**C3.** What is your relationship to the owner of this business? ***[Read List]*** Owner……..……..... .1 Manager……..…..... ...2 Employee……..…..... 3 Friend……..…..... ..4 Son……....5 Other (Specify_____)… ..6	**C4.** In what year was this business founded?	**C5.** How many total employees does this business have, excluding your family members? ***[If you are the only employee, then put "1"]***
[Enter Code]	***[Enter Description]***		***[Enter Code]***	***[Enter Year]***	***[Enter Number of Employees]***

C6. Does your business sell goods or services? ***[Do Not Read]*** Goods…….1 Services……...2 ***[Enter code and skip to D1]*** Both……3	**C7.** Please list the top goods this business sells in order of importance (up to three). ***[Enter short product description.]*** ***[Do Not Read]*** Don't Know……-777 ***[Enter code and skip to D1]*** Refuse to Answer……-999 ***[Enter code and skip to D1]***	**C8.** In what quantity do you typically sell _____?		**C9.** What is the price of _____?	**C10.** Is _____ made, produced or provided for in this province? ***[Do Not Read]*** Yes……...……1 No……...…2
[Enter Code]	***[Enter Description of Good/Service]***	***a. [Enter Quantity]***	***b. [Enter Unit]***	***[Enter in Afs]***	***[Enter Code]***
	1				
	2.				
	3.				

D1. ***[Please say]*** Now I would like to ask you some basic questions about this business during the last six months.	**D2. In the last six months,** how much were your total sales?	**D3. In the last six months,** how much were your total business expenses?	**D4. Of those expenses in the last six months**, how much did you spend on transport costs to receive goods for your business?
	[Enter in Afs]	***[Enter in Afs]***	***[Enter in Afs]***

D5. ***[Please say]*** Now I would like to ask you some basic questions about this business during last summer.	**D6. Last summer,** how much how much were your total sales?	**D7. Last summer,** how much were your total business expenses?	**D8.** Of those expenses **last summer,** how much did you spend on transport costs to receive goods for your business?
	[Enter in Afs]	***[Enter in Afs]***	***[Enter in Afs]***

D9. *[Please say]* Now I would like to ask you some basic questions about this business during last winter.	**D10. Last winter**, how much how much were your total sales?	**D11. Last winter,** how much were your total business expenses?	**D12.** Of those expenses **last winter,** how much did you spend on transport costs to receive goods for your business?
	[Enter in Afs]	*[Enter in Afs]*	*[Enter in Afs]*

E1. ***[BUSINESS TRANSPORT]*** ***[Please Say]* Now I would like to ask you some questions about how goods reach your business.**	**E2.** Do you receive any of your goods through the Keshim-Faizabad road? ***[Do Not Read]*** Yes.....1 ***[Enter code and skip to E4]*** No.....2	**E3.** What is the reason behind not using KF Road for your transportation? ***[Do Not Read]*** My goods do not come from points along the road.....1 ***[Enter code and skip to E6]*** Route takes too much time.....2 ***[Enter code and skip to E6]*** Road is too dangerous (insurgents, bandits).....3 ***[Enter code and skip to E6]*** Other (Specify_____) .....4 ***[Enter code and skip to E6]***	**E4.** How are the majority of your goods transported along the Keshim-Faizabad Road? ***[Do Not Read]*** Bus.....1 Minibus.....2 Car.....3 Jeep.....4 Van.....5 Truck.....6 Motorcycle.....7 Tractor .....8 Trailer . 9 Cart/Wheelbarrow/Wagon .....10 On foot .....11 ***[Enter code and skip to E6]*** Donkey/Horse.....12 ***[Enter code and skip to E6]*** Other (Specify_____).....13	**E5.** Is that your personal _____? ***[Replace with answer from E4]*** ***[Do Not Read]*** Yes.....1 No.....2
	[Enter Code]	*[Enter Code]*	*[Enter Code]*	*[Enter Code]*

E6. Do you transport your goods through routes other than the Keshim-Faizabad road? ***[Do Not Read]*** Yes.....1 No.....2 ***[Enter code and skip to F1]***	**E7.** Please mention them.
[Enter Code]	*[Enter Response]*
	1.
	2.
	3.

F1. *[Please say]* **Now I would like to ask you some questions about how goods reached your business last summer.**	**F2. Last summer,** approximately how many of your goods for this business travelled by way of the Keshim-Faizabad Road? *[Read List]* All.....................................1 More than Half..............2 Half.................................3 Less than Half................4 Almost None..................5 None................................6 *[Enter code and skip to F6]*	**F3. Last summer,** how many times did your goods travel by way of the Keshim-Faizabad Road?	**F4. Last summer,** did you experience delays in receiving goods due to poor road conditions? *[Do Not Read]* Yes.........................1 No...........................2 *[Enter code and skip to F6]*	**F5. Last summer,** how many times did you experience delays due to poor road conditions?
	[Enter Code]	*[Enter Number of Times]*	*[Enter Code]*	*[Enter Number of Times]*

F6. *[Please say]* **Now I would like to ask you some questions about how goods reached your business last winter.**	**F7. Last winter,** approximately how many of your goods for this business travelled by way of the Keshim-Faizabad Road? *[Read List]* All...................................1 More than Half..............2 Half.................................3 Less than Half................4 Almost None..................5 None................................6 *[Enter code and skip to F11]*	**F8. Last winter,** how many times did your goods travel by way of the Keshim-Faizabad Road?	**F9. Last winter,** did you experience delays in receiving goods due to poor road conditions? *[Do Not Read]* Yes.............................1 No...............................2 *[Enter code and skip to F11]*	**F10. Last winter,** how many times did you experience delays due to poor road conditions?	**F11.** *[End of Survey, please read]* **This concludes the survey. Thank you for your participation.**
	[Enter Number of Delays]	*[Enter Number of Times]*	*[Enter Code]*	*[Enter Number of Times]*	

APPENDIX 2: INSTRUMENTS

2.4 MARKET OVERVIEW SURVEY

Survey Number: KF2010MO

IRP Keshim – Faizabad Road Follow Up Survey: Market Overview Survey Module

A1	**Name of Market**	
A2	**District Identification**	
A3	**KM Along the Road**	
A4	**Closest GPS Point**	
A5	**Time**	**Start:** **AM/PM**
		Finish: **AM/PM**

		Name	**Signature**	**Date (M/D/Y)**	**ID Code**
A6	Enumerator				
A7	Survey Manager				
A8	Data Entry				

A9. Is today a market day?

Yes……1

No……..2

[Enter Code]

[ANSWER CODES FOR USE THROUGHOUT ENTIRE SURVEY]
Don't Know…..-777
Not Applicable… -888
Refuse to Answer….-999

	B1. What is the price of _____? ***[Walk around the bazaar and write down prices for the following items. Please write down as many prices as possible for each item. If the shop has multiple items matching the description, please write down the price for the cheapest one. Ask for the price if it is not listed on the product.]***									
Product	***Price 1***	***Price 2***	***Price 3***	***Price 4***	***Price 5***	***Price 6***	***Price 7***	***Price 8***	***Price 9***	***Price 10***
1. Wheat flour **(1 ser or 7kg bag)**										
2. Rice **(1 ser)**										
3. Potato **(1kg)**										
4. Corn **(1kg)**										
5. Green Grapes **(1kg – no seeds)**										
6. White Kidney Beans **(1kg)**										
7. Tomato **(1kg)**										
8. Onion **(1kg)**										
9. Beef **(1kg)**										
10. Mutton/Sheep **(1kg)**										
11. Oil **(1 kg)**										
12. Walnuts **(1kg – without shell)**										
13. Milk **(1 liter)**										
14. Dried Yogurt **(1kg)**										

	C1. What is the price of _____? ***[Walk around the bazaar and write down prices for the following items. Please write down as many prices as possible for each item. If the shop has multiple items matching the description, please write down the price for the cheapest one. Ask for the price if it is not listed on the product.]***									
Product	***Price 1***	***Price 2***	***Price 3***	***Price 4***	***Price 5***	***Price 6***	***Price 7***	***Price 8***	***Price 9***	***Price 10***
1. Lux Body Soap **(1 unit)**										
2. Toilet paper **(1 roll - white)**										
3. Shampoo **(1 pantene packet)**										
4. Small batteries—(flashlight) **(Sony Pair)**										
5. Large batteries—(tape recorder) **(Rabbit Pair)**										

	C2. What is the price of _____? ***[Walk around the bazaar and write down prices for the following items. Please write down as many prices as possible for each item. If the shop has multiple items matching the description, please write down the price for the cheapest one. Ask for the price if it is not listed on the product.]***									
Product	***Price 1***	***Price 2***	***Price 3***	***Price 4***	***Price 5***	***Price 6***	***Price 7***	***Price 8***	***Price 9***	***Price 10***
1. Petrol **(1 liter)**										
2. Diesel **(1 liter)**										
3 Fertilizer **(1 kg)**										
4. Pesticides **(1 bag)**										
5. Wood **(1 ser or 7kg)**										

APPENDIX 2: INSTRUMENTS

2.5 FREIGHT COMPANY SURVEY

Survey Number: KF2010FCKI_____

IRP Keshim-Faizabad Road Follow Up Survey: Transportation and Freight Company Survey Module

A1	**Company Name**	
A2	**Scheduled Start Time**	
A3	**Village/City Identification**	
A4	**District Identification**	
A5	**Address**	
A6	**Closest GPS Point**	

		Name	Signature	Date (M/D/Y)	ID Code
A7	Enumerator				
A8	Survey Manager				
A9	Data Entry				

[ANSWER CODES FOR USE THROUGHOUT ENTIRE SURVEY]
Don't Know…..-777
Not Applicable… -888
Refuse to Answer….-999

First Freight Company Survey Attempt *[Fill-in for ALL Attempts]*		**Code**
A10. Date (M/D/Y)		
A11. Start Time		
A12. End Time		
A13. Result	Fully conducted……..1	
	Partially conducted…….2 *[Skip to B1 for Second Attempt]*	
	Not conducted for security reasons……3 *[Skip to B1 for Second Attempt]*	
	Refusal……....4 *[Skip to B1 for Second Attempt]*	

Second Freight Company Survey Attempt ***[Fill-in for ALL Attempts]***		**Code**
B1. Date (M/D/Y)		
B2. Start Time		
B3. End Time		
B4. Result	Fully conducted……..1	
	Partially conducted…….2 ***[Skip to B5 for Third Attempt]***	
	Not conducted for security reasons……3 ***[Skip to B5 for Third Attempt]***	
	Refusal……....4 ***[Skip to B5 for Third Attempt]***	

Third Freight Company Survey Attempt ***[Fill-in for ALL Attempts]***		**Code**
B5. Date (M/D/Y)		
B6. Start Time		
B7. End Time		
B8. Result	Fully conducted……..1	
	Partially conducted…….2 ***[Survey Completed]***	
	Not conducted for security reasons……3 ***[Start New Survey]***	
	Refusal……....4 ***[Start New Survey]***	

[At this point, please begin the interview by saying]
My name is …… and I came here on behalf of the company that constructed the KF Road. I am here to ask you some questions regarding the current changes which have happened in your business due to the road.
This survey is designed to acquire information from freight companies regarding shipping company capacity, the cost of shipping and shipping fees. We are very kindly requesting your participation in this survey and hope you will answer our questions.
Now, if you have any questions regarding this survey please let me know.
[If asked, the survey will take approximately 20 minutes.]

C1. May I begin now? Yes……..1 No……..2 ***[Enter code and skip to G3]***
[Enter Code]

D1. How many drivers work for you?	**D2.** What three types of cargo do you most commonly ship?	**D3.** How many metric tons of freight do you ship on average every day?	**D4.** Does the condition of the road affect the fees you charge? ***[Do Not Read]*** Yes……..…..…..1 No……...…..2
[Enter Number]	***[Enter Description]***	***[Enter Metric Tons]***	***[Enter Code]***
	1.		
	2.		
	3.		

D5. In the past month, how many trips did your trucks make on the Keshim-Faizabad road?	**D6.** What are the three most common destinations for your shipments?	**D7.** What is the distance (in KMs) to _____?	**D8.** How much time does it take for you to go from here to _____?		
[Enter Number]	***[Enter Village/City]***	***[Enter KMs]***	***[Enter Days, Hours and Minutes]***		
			a. Days	***b. Hours***	***c. Minutes***
	1.				
	2.				
	3.				

E1. What types of vehicles do you have in your fleet? This includes company-owned, driver-owned and leased vehicles. Please list up to five. ***[Read List]*** Van Pick-up Truck 2-axle Truck 3-axle Truck Tractor Trailer Other (Specify_____)	**E2.** How many _____ do you have in your fleet?	**E3.** How many tons fit in a fully loaded _____?	**E4.** ***[Ask about the city (Keshim or Faizabad) that you are currently not in]*** How much does it cost to ship a fully loaded _____ to Faizabad/Keshim?	**E5.** ***[Ask about the city (Keshim or Faizabad) that you are currently not in]*** One year ago, how much did it cost to ship a fully loaded _____ to Faizabad/Keshim?	**E6.** How much does it cost to ship a fully loaded _____ to Kabul?	**E7.** One year ago, how much did it cost to ship a fully loaded _____ to Kabul?
[Enter Description of Vehicle Type]	***[Enter Number]***	***[Enter Number]***	***[Enter in Afs]***	***[Enter in Afs]***	***[Enter in Afs]***	***[Enter in Afs]***
1.						
2.						
3.						
4.						
5.						

F1. Do your trucks ever drive on the Keshim-Faizabad Road at night? ***[Do Not Read]*** Yes…..…...……1 ***[Skip to F3]*** No……..…...2 Don't Know…..…-777 ***[Skip to F3]*** Refuse to Answer…....-999 ***[Skip to F3]***	**F2.** What is the primary reason your trucks do not drive at night? ***[Read List]*** Cannot see at night……..…1 Security (insurgents, bandits, etc.)...2 Condition of road…….…...…3 Government restrictions.....4 Fear of military (US or Afghan)……5 Lack of service stations..…..6 Other (Specify_____)…..7	**F3.** In the last year while traveling the Keshim-Faizabad road, what is the biggest problem your drivers have had? ***[Read List]*** Personal goods stolen.....1 Vehicle stolen…….....2 Merchandise stolen……3 Physically injured…...….4 Other (Specify_____)...5	**F4.** I have heard that vehicles like yours are sometimes stopped on the Keshim-Faizabad road to pay charges. Is this true? ***[Do Not Read]*** Yes……1 No..……...2 ***[Skip to G1]***	**F5**. Along the Keshim-Faizabad road, how many times are you usually stopped?	**F6**. When vehicles like yours are stopped along the Keshim-Faizabad road, how much do they typically pay in fees each time they are stopped?
[Enter Code]	***[Enter Code]***	***[Enter Code]***	***[Enter Code]***	***[Enter Number]***	***[Enter in Afs]***

G1. What are the three major determinants of the price for shipping? ***[Write down the response. Clarify if needed.]***	**G2.** What are the three primary impediments to lower shipping costs in this region? ***[Write down the response. Clarify if needed.]***	**G3.** ***[End of Survey]*** **This concludes our survey. Thank you for your participation!**
1.	**1.**	
2.	**2.**	
3.	**3.**	

APPENDIX 2: INSTRUMENTS

2.6 PAID PASSENGER SURVEY – FREIGHT TRUCKS

Freight Trucks **Survey Number: KF2010FT**

	Name	Signature	Date (M/D/Y)	ID Code
Enumerator				
Survey Manager				
Data Entry				

Location Description:	
Destination (circle one):	Keshim or Faizabad
KM Number:	
GPS Point:	
Date:	
Start Time:	
End Time:	

	Length of trip to Keshim/Faizabad		How many kilometers is your total trip?	How many tons are you carrying?	How much does it cost to ship that?
	Hours	Minutes			
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					

APPENDIX 2: INSTRUMENTS

2.7 PAID PASSENGER SURVEY – TAXI

Taxis **Survey Number: KF2010TAXI**

	Name	Signature	Date (M/D/Y)	ID Code
Enumerator				
Survey Manager				
Data Entry				

Location Description:	
Destination (circle one):	Keshim or Faizabad
KM Number:	
GPS Point:	
Date:	
Start Time:	
End Time:	

	Length of trip		Fare (Entire Vehicle)	Number of Passengers	Fare (Single Passenger)	Fare (Single Passenger: one year ago)
	Hours	Minutes				
1						
2						
3						
4						
5						
6						
7						
8						
9						
10						
11						
12						
13						
14						
15						
16						
17						
18						
19						
20						

APPENDIX 2: INSTRUMENTS

2.8 PAID PASSENGER SURVEY – PASSENGER CARS AND TRUCKS

Passenger Cars and Trucks (excludes buses and taxis)

Survey Number: KF2010PASS

	Name	Signature	Date (M/D/Y)	ID Code
Enumerator				
Survey Manager				
Data Entry				

Location Description:	
Destination (circle one):	Keshim or Faizabad
KM Number:	
GPS Point:	
Date:	
Start Time:	
End Time:	

=	Length of trip		Fare (Entire Vehicle)	Fare (Single Passenger)	Fare (Single Passenger: one year ago)	True Destination
	Hours	Minutes				
1						
2						
3						
4						
5						
6						
7						
8						
9						
10						
11						
12						
13						
14						
15						
16						
17						
18						
19						
20						

APPENDIX 2: INSTRUMENTS

2.9 PAID PASSENGER SURVEY – BUS

Buses **Survey Number: KF2010BUS**

	Name	Signature	Date (M/D/Y)	ID Code
Enumerator				
Survey Manager				
Data Entry				

Location Description:	
Destination (circle one):	Keshim or Faizabad
KM Number:	
GPS Point:	
Date:	
Start Time:	
End Time:	

	Length of trip		Fare (Entire Vehicle)	Fare (Single Passenger)	Fare (Single Passenger: one year ago)
	Hours	Minutes			
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					

APPENDIX 2: INSTRUMENTS

2.10 SETTLEMENT DEMOGRAPHIC (VILLAGE ELDER) SURVEY

Survey: KF2010SD

IRP Keshim – Faizabad Road Follow Up Survey: Settlement/Demographic (Village Elder) Interview Module

A1	**Village/City Identification**	
A2	**District Identification**	
A3	**KM Along the Road**	
A4	**GPS Point**	

		Name	Signature	Date (M/D/Y)	ID Code
A5	Enumerator				
A6	Survey Manager				
A7	Data Entry				

		Result Code	Enter Result Code	Start Time	End Time	Date (M/D/Y)
A8	First Visit	Fully conducted……..1 Partially conducted……..2 Not conducted for security reasons……3 Come-Back…….4 Unavailable…….5 Refusal…….6				
A9	Second Visit	Fully conducted……..1 Partially conducted……2 Not conducted for security reasons……3 Come-Back…….4 Unavailable…….5 Refusal……..6				

[ANSWER CODES FOR USE THROUGHOUT ENTIRE SURVEY]
Don't Know…..-777
Not Applicable… -888
Refuse to Answer….-999

[At this point, please begin the interview by saying]

My name is ..... and I came here on behalf of the company that constructed the KF Road. I am here to ask you some questions about your community and how the road is affecting your lives.

This survey is designed to acquire information from village leaders about their local communities. We are very kindly requesting your participation in this survey and hope you will answer our questions.
Now, if you have any questions regarding this survey please let me know.
[If asked, the survey will take approximately 20 minutes.]

B1. May I begin now? Yes.....1 No.....2 ***[Enter code and skip to I8]***
[Enter Code]

C1. *[Please say]* **Now, I would like to ask you some general questions about your community.**	**C2.** How many houses are there in the village?	**C3.** What is the total population of men and women in the village?	**C4.** Is this village supplied with electricity? ***[Do Not Read]*** Yes……..…..1 No……...…..2 ***[Enter code and skip to C6]***	**C5.** On average, how many hours per day does the village receive electricity?	**C6.** How far is the village from the Keshim–Faizabad Road? ***[If less than one kilometer, enter "0"]***	**C7.** What mode of transportation do most villagers typically use to access the Keshim-Faizabad road? ***[Read List]*** Motorized Vehicle……..1 Bicycle……..2 Donkey, Mule, Horse……...3 Walk……4 Other (Specify_____)..5	**C8.** With this mode of transportation, how long does it take to get to the Keshim–Faizabad Road on a typical trip?	
	[Enter Number]	***[Enter Number]***	***[Enter Code]***	***[Number of Hours]***	***[Enter KMs]***	***[Enter Code]***	***[Enter Hours and Minutes]***	
							a. Hours	***b. Minutes***

D1. What kind of access road is there to the Keshim–Faizabad road? ***[Read List]*** Dirt road ……..…..…1 Gravel road ……...…...2 Paved road ..……...….3 Other (Specify_____).....4 ***[If two answers given, ask respondent which kind for ½ of road <u>closest</u> to their village]***	**D2.** Do passenger vehicles stop in this village? ***[Do Not Read]*** Yes……..…..1 No……...…..2 ***[Skip to D4]***	**D3.** How many times do passenger vehicles stop in this village per _____?		**D4.** From this village, how much does it cost to go to Keshim in a _____?		**D5.** From this village, how much does it cost to go to Faizabad in a _____? ***[Refer to D4]***
[Enter Code]	***[Enter Code]***	***[Enter Number]***		***[Enter Afs]***		***[Enter Afs]***
		1. Day		**1. Car**		
		2.Week		**2. Minibus**		
		3. Month		**3. Public Bus**		

E1. Does the village have a primary school? ***[Do Not Read]*** Yes……..…...…1 ***[Skip to E6]*** No……..…...….2	**E2**. How far is the closest primary school to the village? ***[If less than one kilometer, enter "0"]***	**E3.** What mode of transportation do most villagers typically use to access the closest primary school? ***[Read List]*** Motorized Vehicle……1 Bicycle……..2 Donkey, Mule, Horse……...3 Walk……4 Other (Specify_____)..5	**E4.** With this mode of transportation, how long does it take to get to the closest primary school on a typical trip? [One-way]		**E5.** Do you have to use the Keshim–Faizabad Road to get to the primary school? ***[Do Not Read]*** Yes……....…...1 No……...2	**E6.** Does the village have a secondary school? ***[Do Not Read]*** Yes……..……1 ***[Skip to F4]*** No……..…….2	**E7.** How far is the closest secondary school to the village? ***[If less than one kilometer, enter "0"]***
[Enter Code]	***[Enter KMs]***	***[Enter Code]***	***[Enter Hours and Minutes]***		***[Enter Code]***	***[Enter Code]***	***[Enter KMs]***
			a. Hours	***b. Minutes***			

F1. What mode of transportation do most villagers typically use to access the closest secondary school? ***[Read List]*** Motorized Vehicle……1 Bicycle……..2 Donkey, Mule, Horse……...3 Walk…….4 Other (Specify_____)..5	**F2.** With this mode of transportation, how long does it take to get to the closest secondary school on a typical trip? [One-way]		**F3.** Do you have to use the Keshim–Faizabad Road to get to the secondary school? ***[Do Not Read]*** Yes……....……1 No……....…….2	**F4.** Does the village have a public hospital? ***[Do Not Read]*** Yes……..……1 ***[Skip to G3]*** No……..…….2	**F5**. How far is the closest public hospital to the village? ***[If less than one kilometer, enter "0"]***	**F6.** What mode of transportation do most villagers typically use to access the closest public hospital? ***[Read List]*** Motorized Vehicle……1 Bicycle……..2 Donkey, Mule, Horse……...3 Walk…….4 Other (Specify_____)..5
[Enter Code]	***[Enter Hours and Minutes]***		***[Enter Code]***	***[Enter Code]***	***[Enter KMs]***	***[Enter Code]***
	a. Hours	***b. Minutes***				

G1. With this mode of transportation, how long does it take to get to the public hospital on a typical trip? [One-way]		**G2.** Do you have to use the Keshim–Faizabad Road to get to the public hospital? ***[Do Not Read]*** Yes……1 No……...2	**G3.** Does this village have a clinic? ***[Do Not Read]*** Yes……..……1 ***[Skip to H1]*** No……..…….2	**G4.** How far is the closest clinic to the village? ***[If less than one kilometer, enter "0"]***	**G5.** What mode of transportation do most villagers use to access the closest clinic? ***[Read List]*** Motorized Vehicle……1 Bicycle……..2 Donkey, Mule, Horse……...3 Walk……4 Other (Specify_____)..5	**G6.** With this mode of transportation, how long does it take to get to the closest clinic on a typical trip? [One-way]		**G7.** Do you have to use the Keshim–Faizabad Road to get to the closest clinic? ***[Do Not Read]*** Yes……...…1 No……...…….2
[Enter Hours and Minutes]		***[Enter Code]***	***[Enter Code]***	***[Enter KMs]***	***[Enter Code]***	***[Enter Hours and Minutes]***		***[Enter Code]***
a. Hours	***b. Minutes***					***a. Hours***	***b. Minutes***	

H1. Please tell me which type of crops are cultivated in the village mainly for sale in the market. (Describe up to four)	**H2.** From this village, how far away is the market where _____ is sold?	**H3.** Do you have to use the Keshim–Faizabad Road to get to the market where _____ is sold? ***[Do Not Read]*** Yes……..……1 No……..…….2	**H4.** What mode of transportation do most villagers typically use to access the market where _____ is sold? ***[Read List]*** Motorized Vehicle……1 Bicycle……..2 Donkey, Mule, Horse……...3 Walk……4 Other (Specify_____)..5	**H5.** With this mode of transportation, how long does it typically take to get to the market where _____ is sold? [One-way]	
[Enter Description of crop]	***[Enter KMs, if less than one enter "0"]***	***[Enter Code]***	***[Enter Code]***	***[Enter in Hours and Minutes]***	
				a.Hours	***b.Minutes***
1.					
2.					
3.					
4.					

11. ***[Please Read]*** **Now I would like to ask you some questions about your personal travel and perspective.**	**12.** How many times did you travel to Keshim city in the last _____?	**13.** How many times did you travel to Faizabad city in the last _____?	**14.** How many weddings did you attend in the last _____?	**15.** What is the distance of the farthest wedding you traveled to attend in the last year?
	[Enter Number]	***[Enter Number]***	***[Enter Number]***	***[Enter KMs]***
	1. Week			
	2. Month			
	3. Year			

16. Please describe from your perspective the three most important priorities for improving the livelihoods of those who live in this village. ***[List the priorities as they are given. Clarify if needed.]***	**17.** Please describe how you think the road improvement will affect the village once it is complete. ***[Clarify if needed.]***	**18.** ***[END SURVEY]*** **This concludes our survey. Thank you for your participation!**
[Enter Description of priorities]	***[Enter Response]***	
1.		
2.		
3.		

APPENDIX 2: INSTRUMENTS

2.11 DISTRICT AGRICULTURE KEY INFORMANT INTERVIEW

Survey: KF2010DADKI

IRP Keshim-Faizabad Road Baseline Survey: District Agricultural Department Key Informant Interview Module

A1	**Village/City Identification**	
A2	**District Identification**	
A3	**Address**	
A4	**Closest GPS Point**	

		Name	Signature	Date (M/D/Y)	ID Code
A5	Enumerator				
A6	Survey Manager				
A7	Data Entry				

		Result Code	Enter Result Code	Start Time	End Time	Date (M/D/Y)
A8	First Visit	Fully conducted……..1 Partially conducted…….2 Not conducted for security reasons……3 Come-Back…….4 Unavailable…….5 Refusal…….6				
A9	Second Visit	Fully conducted……..1 Partially conducted…….2 Not conducted for security reasons……3 Come-Back…….4 Unavailable…….5 Refusal…….6				

[ANSWER CODES FOR USE THROUGHOUT ENTIRE SURVEY]
Don't Know…..-777
Not Applicable… -888
Refuse to Answer….-999

[At this point, please begin the interview by saying] **Good Afternoon, my name is_____. I am from the company that constructed the Keshim-Faizabad Road. As part of this project, we are conducting a survey that asks important questions about agricultural products in your district.**
The results will be used to determine how the road will potentially impact agriculture along the road.

Participation in this survey is completely voluntary and all information will be treated anonymously. Your responses will be combined with those of other respondents and any personal information will not be used for this study. If we should come to any question you don't want to answer, please let me know and I will go on to the next question. You can also stop the survey at any time. However, we hope you will participate in the survey since your information is important to us. The results will be used to better understand how improved roads impact communities like yours.

At this time, do you want to ask me anything about the survey? ***[If asked, the survey will take approximately 30 minutes]***

B1. May I begin now? Yes……1 No……..2 ***[Enter code and skip to F5]***
[Enter Code]

C1. Please tell me the primary agricultural crops cultivated in this district, starting with those of highest volume. Please describe up to five.	**C2**. Please tell me the primary cash crops cultivated in this district, starting with those of highest volume. Please describe up to five.	**C3.** How much _____ did the district grow during the last 12 months?		**C4.** What was the total value of _____ sales during the last 12 months?	**C5**. During the last 12 months, what was the total value of _____ sales in markets beyond the Keshim–Faizabad corridor?
[Enter Description]	***[Enter Description]***	***[Enter Quantity]***	***[Enter Unit]***	***[Enter in Afs]***	***[Enter in Afs]***
1.	**1.**				
2.	**2.**				
3.	**3.**				
4.	**4.**				
5.	**5.**				

C6. What are the most important markets for cash crops within the Keshim–Faizabad corridor? Please list up to five.	**C7.** What are the most important markets for cash crops outside of the Keshim–Faizabad corridor? Please list up to five.
[Enter names of Cities/Towns]	***[Enter names of Cities/Towns]***
1.	**1.**
2.	**2.**
3.	**3.**
4.	**4.**
5.	**5.**

D1. Please tell me the primary crops imported into this district, starting with those of highest volume. Please describe up to five.	**D2.** What is the primary place of origin for _____? *[List place of origin for each crop. Indicate whether this a province, district, or city/town, and enter the country.]*			**D3.** What was the total value of _____ sales during the last 12 months?
[Enter Description]	***[Enter Place of Origin]***	***[Enter Province, District, or City]***	***[Enter Country]***	***[Enter in Afs]***
1.				
2.				
3.				
4.				
5.				

E1. What percentage of farmers uses fertilizer? ***[Do Not Read]*** 91-100%.....1 81-90%.....2 71-80%.....3 61-70%.....4 51-60%.....5 41-50%.....6 31-40%.....7 21-30%.....8 11-20%.....9 1%-10%.....10 0%.....11	**E2.** What percentage of farmers uses pesticides? ***[Do Not Read]*** 91-100%.....1 81-90%.....2 71-80%.....3 61-70%.....4 51-60%.....5 41-50%.....6 31-40%.....7 21-30%.....8 11-20%.....9 1%-10%.....10 0%.....11	**E3.** What is the biggest impediment to farmers using fertilizers and pesticides? ***[Read List]*** Don't understand the value….1 Don't know how to properly apply it……..…2 Attachment to traditional ways of farming……..…3 Inadequate access to supply.....4 Too expensive……5 Other (Specify_____)…..6	**E4.** Are there government programs that provide subsidies for fertilizer and pesticides? ***[Do Not Read]*** Yes……1 No……2 ***[Skip to F1]***	**E5.** How much of a subsidy does the government provide for fertilizer? ***[Do Not Read]*** 91-100%.....1 81-90%.....2 71-80%.....3 61-70%.....4 51-60%.....5 41-50%.....6 31-40%.....7 21-30%.....8 11-20%.....9 1%-10%.....10 0%.....11	**E6.** What percentage does the Government of Afghanistan reduce the price for pesticide? ***[Do Not Read]*** 91-100%.....1 81-90%.....2 71-80%.....3 61-70%.....4 51-60%.....5 41-50%.....6 31-40%.....7 21-30%.....8 11-20%.....9 1%-10%.....10 0%.....11
[Enter Code]	***[Enter Code]***	***[Enter Code]***	***[Enter Code]***	***[Enter code]***	***[Enter code]***

F1. In your opinion, in rank of order of importance, what are the three greatest impediments to increased agricultural productivity for this district? ***[Read List]*** Ignorance of effective farming techniques…1 Inadequate use of farming technology……..2 Inadequate access to farming technology…..3 Inadequate access to markets……..…....4 Inadequate irrigation systems……..…....5 Lack of agricultural credit ...…..……..…....6 Land ownership problems…...……..……7 Poor government policy/institutions..…..…..8 Other (Specify_____)……..……9	**F2.** In your opinion, in rank of order of importance, what are the three greatest impediments to the growth of commercial agriculture? ***[Read List]*** Low productivity of farms……..……1 Land plots too small……..2 Inadequate market knowledge……...3 Poor transport infrastructure……..……4 Political instability of region…..……5 Inadequate access to markets……..…....6 Unfair competition from outside markets……..…7 Lack of agricultural credit…...……..…....8 Poor government policy/institutions…9 Other (Specify_____)…...…..10	**F3.** Describe the most important initiatives that your department is undertaking to strengthen the agricultural sector. Please describe up to three. ***[Write down the response. Clarify if needed.]***	**F4.** In your opinion, how will the Keshim–Faizabad Road improvement affect the agricultural economy of your district? ***[Write down the response. Clarify if needed.]***	**F5.** ***[END SURVEY]*** ***[Please say]*** **This concludes our survey. Thank you for your participation!**
[Enter Code]	***[Enter Code]***	**1.** **2.** **3.**		
1.	**1.**			
2.	**2.**			
3.	**3.**			

APPENDIX 2: INSTRUMENTS

2.12 CITY MANAGER KEY INFORMANT INTERVIEW

Survey: KF2010CMKI_____

IRP Keshim – Faizabad Road Baseline Survey: City Manager Key Informant Interview Module

A1	**Village/City Identification**	
A2	**District Identification**	
A3	**Address**	
A4	**Closest GPS Point**	

		Name	Signature	Date (M/D/Y)	ID Code
A5	Enumerator				
A6	Survey Manager				
A7	Data Entry				

		Result Code	Enter Result Code	Start Time	End Time	Date (M/D/Y)
A8	First Visit	Fully conducted……..1				
		Partially conducted……..2				
		Not conducted for security reasons……3				
		Come-Back…….....4				
		Unavailable…….....5				
		Refusal…….....6				
A9	Second Visit	Fully conducted……..1				
		Partially conducted……2				
		Not conducted for security reasons……3				
		Come-Back…….....4				
		Unavailable…….....5				
		Refusal……...6				

[At this point, please begin the interview by saying] **Good Afternoon, my name is_____. I am from the company that constructed the Keshim–Faizabad Road. As part of this project, we are conducting a survey that asks important questions about your city. The purpose of this survey is to collect information about the city's current economic life and how this road will impact the economy.**

Please be aware that participation in this survey is completely voluntary and all information will be treated anonymously and be kept in the strictest confidence. Your responses will be combined with those of other respondents and any personal information will not be used for this study. If we should come to any question you don't want to answer, please let me know and I will go on to the next question. You can also stop the survey at any time. However, we hope you will participate in the survey since your information is important to us. The results will be used to better understand how improved roads impact communities like yours.

At this time, do you want to ask me anything about the survey? ***[If asked, the survey will take approximately 30 minutes]***

B1. May I begin now? Yes……..1 No……..2 ***[Enter code and skip to I8]***
[Enter Code]

1. Economic and Living Status of Urban Population

In your opinion, is the city's economy growing stronger or weaker? Explain. How many people in the city would you consider "poor" and how many would you consider "well off?" What is your definition of the "poor" and the "well off" (i.e., what are the factors that identify a person as "poor" or "well off"?)? Why do you think the differences between the better-off and the poor exist? In your opinion, what causes poverty or what makes people better off? What can the local and federal governments do to better alleviate poverty?

2. Economic Opportunity

How difficult is it to find a job in the city? How do current wages compare to household expenses? In your opinion, what needs to be done in order for there to be better economic opportunities? What are the greatest inhibitors to growth? Are there things the government could do to improve the economic life of the city? What programs of the government do you think are having the most positive impact? Are there sufficient economic opportunities for women? Are the economic opportunities for women improving or getting worse?

3. Impact of the Road Construction on Property

Has the construction of the road had an effect on property prices along the road? If so, how have property prices changed? Has the construction of the road required land to be taken from property owners? If so, how many property owners have had land taken from them? Were any of these property owners compensated for the land that was taken from them? If so, how much compensation did they receive? Who compensated them? If not, has there been anything done to secure compensation for them? From your understanding, who is responsible to compensate property owners that have had land taken from them?

4. Impact of the Road Improvement for City Development

How important is the road for the city's economy? How will it impact trade within Afghanistan? What markets will the improved road increase access to and how will increased access to markets affect businesses in the city? How will the improved road affect trade with other provinces? Will the road improvements lower travel costs (passenger and freight)? Have travel costs (passenger and freight) already decreased? If so, could you give some examples? What determines current pricing for transport (government, drivers' associations, market)? Are there currently any official tolls levied on road use? Once the road is complete will there be any levies for road use? Are you aware of any informal payments be collected for road use? If so, are there any efforts to stem these? Will the improved road have any impact (positive or negative) on the insurgency? Explain.

5. Problems and Priorities for Development in the City

What are the biggest problems and concerns of your city? How are these problems and difficulties connected with the road condition and transport? How do you cope with these difficulties? In your opinion, how can these problems be solved? What do you think should be the priorities for the development of your city and the improvement of the people's living the city? What needs to be done to improve the lives of women? Any suggestions or recommendations?

6. Impact of Road Construction on Safety

To your knowledge, has the construction of the road resulted in any increases in traffic accidents? If so, do you know how much traffic accidents have increased? Is there anything being done to promote safety among drivers and pedestrians?

7. Government and Aid Assistance

Are you aware of any programs by the government, donors (US, NATO, World Bank, etc.), or NGOs that have tried to help improve economic life in the city in the past five years? Have there been programs focused on improving the welfare of women? Describe some of these. How successful were they? Explain. How could such assistance be more effectively used?

8. Other Comments of the Participant Recorded During the Interview

APPENDIX 2: INSTRUMENTS

2.13 FOCUS GROUP GUIDE – VILLAGE MEN

Survey: KF2010VMFG

IRP Keshim-Faizabad Focus Group Discussion:

Village Module (Men)

A.1	**District Identification**	
A.2	**City identification**	
A.3	**Date**	
A.4	**Time**	**Start:**
		Finish:

		Name	Signature	Date (M/D/Y)	ID Code
A5	Facilitator				
A6	Recorder				
A7	Survey Manager				
A8	Data Entry				

Participant Roster

#	Name	Age	Gender	Occupation
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[At this point, please begin the focus group discussion by saying] **Good Afternoon, my name is_____. I am working on behalf of the company that constructed the Keshim–Faizabad Road. As part of this project, we are conducting this group discussion, with the permission of your village leaders that asks important questions about your village's economic life and how transport issues affect the village's welfare. I must underline that the purpose of this meeting is to hear your points of view on these important issues. The results will be used to better understand how improvements in the Keshim–Faizabad Road will impact villages like yours along the road. While your viewpoints will be included in the study, I can in no way promise that the Islamic Republic of Afghanistan will respond to the recommendations you make in the course of this conversation.**

Please be aware that participation in this discussion is completely voluntary and your comments will be kept in the strictest confidence. Your responses will be combined with those of other respondents and any personal information will not be used for this study.

At this time, do you want to ask me anything about the discussion? ***[If asked, the discussion will take approximately 1 hour]***

May I begin now?

[Once participants signal their assent, proceed with the discussion.]

1. Economic Opportunity

How difficult is it to find a job? How do current wages compare to household expenses? In your opinion, what needs to be done in order for there to be better economic opportunities? Are there things the government could do to improve the economic life of the village?

2. Major Income Sources

What percentage of people's income in the village comes from farm work and what percentage comes from off-farm work? What are the major sources of income of the people in the village? List the activities, and rank in the order of importance as the village's income source.

3. Major Expenditure Items

What are the major expenditures of the people in your village? List items, and rank in the order of importance.

4. Impact of the Road Improvement for Village Development

How important is the road for you and your living? What is the major use of the road in your village (to go buy/sell food, to go to school, etc.)? How will the road improvement affect your village and your economic activities? How will it affect the time it takes to travel to schools? Health clinics? Markets? Are there negative impacts that the road's improvement could have on your village? Explain. Has the road led to any increases in traffic accidents? Explain. Has there been anything to encourage greater safety for drivers or pedestrians?

5. Impact of Road Construction on Property

Has the construction of the road had an effect on property prices along the road? If so, how have property prices changed? Has the construction of the road required land to be taken from any property owners in your area? If so, how many property owners have been affected? To your knowledge, were any of these property owners compensated for the land that was taken from them? If so, how much compensation did they receive?

Who compensated them? If not, has there been anything done to secure compensation for them? From your understanding, who is responsible to compensate property owners that have had land taken from them?

6. Access to Markets for Shopping

Who does the shopping in your household? When you need goods that are not found in your village, where do you go to buy them? How far is this market? How do you (or whoever goes in the household) usually get there**? If they drive or go by taxi or bus, ask:** How much does it typically cost? How do the prices of similar goods compare between your village market and these other markets? Does anyone in your household ever go to larger towns like Keshim or Faizabad to buy goods? If not, why not? If so, how do prices for the same goods compare with the ones you find in your own market? If transport were cheaper, would your household go to markets outside of your village more?

7. Access to Markets for Selling

Does anyone in your household sell goods that you grow or make? Do they ever go to larger towns like Keshim or Faizabad to sell goods? If not, why not? If so, how do prices for the same goods compare with the ones you find in your own market? Could they get a better price for the goods there? If transport were cheaper, would they go to markets outside of their village more? If so, would this affect the kinds of crops your household chooses to grow or the kind of goods you make? How so?

8. Connection to Political Centers

How often in a year do you typically visit the district center? How often in a year do you typically visit the provincial center? Will the improvement in the road increase the frequency with which you visit the district or provincial center? If so, what difference do you think this will this make?

9. Problems and Priorities for Development in the Village

What are the biggest problems and concerns of your village? How are these problems and difficulties connected with the road condition and transport? How do you cope with these difficulties? In your opinion, how can these problems be solved? What do you think should be the priorities for the development of your village and the improvement of the people's living in your village? Any suggestions and recommendations?

10. Government and Aid Assistance

Are you aware of any programs by the government, donors (US, NATO, World Bank, etc.), or NGOs that have tried to help improve economic life in the city in the past five years? Describe some of these. How successful were they? Explain.

11. Other Comments of the Participants Recorded During the Focus Groups Discussions

APPENDIX 2: INSTRUMENTS

2.14 FOCUS GROUP GUIDE – URBAN MEN

Survey: KF2010UMFG

IRP Keshim – Faizabad Focus Group Discussion:

Urban Module (Men)

A.1	**District Identification**	
A.2	**City identification**	
A.3	**Date**	
A.4	**Time**	**Start:**
		Finish:

		Name	Signature	Date (M/D/Y)	ID Code
A5	Facilitator				
A6	Recorder				
A7	Survey Manager				
A8	Data Entry				

Participant Roster

#	Name	Age	Gender	Occupation
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[At this point, please begin the focus group discussion by saying] **Good Afternoon, my name is_____. I am working on behalf of the company that is constructing the Keshim–Faizabad Road. As part of this project, we are conducting this group discussion, with the permission of your city leaders that asks important questions about your city's economic life and how transport issues affect the city's welfare. I must underline that the purpose of this meeting is to hear your points of view on these important issues. The results will be used to better understand how improvements in the Keshim–Faizabad Road will impact cities like yours along the road. While your viewpoints will be included in the study, I can in no way promise that the Islamic Republic of Afghanistan will respond to the recommendations you make in the course of this conversation.**

Please be aware that participation in this discussion is completely voluntary and your comments will be kept in the strictest confidence. Your responses will be combined with those of other respondents and any personal information will not be used for this study.

At this time, do you want to ask me anything about the discussion? ***[If asked, the discussion will take approximately 1 hour]***

May I begin now?

[Once participants signal their assent, proceed with the discussion.]

1. Economic Opportunity

How difficult is it to find a job? How do current wages compare to household expenses? In your opinion, what need to be done in order for there to be better economic opportunities? Are there things the government could do to improve the economic life of the city?

2. Major Expenditure Items

What are your major expenditures? List items, and rank in the order of importance. What impact, if any, do you think the road will have on these expenditures? Why?

3. Impact of the Road Improvement for City Development

How important is the road for you and your living? What will the major use of the road be for people living in the city (to go see family, to travel to places of work, etc.)? If travel on the road were cheaper, would you use it more? How will the road improvement affect the city's economy? Are there negative impacts that the road's improvement could have on the city? Explain. Has the road led to any increases in traffic accidents? Explain. Has there been anything to encourage greater safety for drivers or pedestrians?

4. Impact of Road Construction on Property

Has the construction of the road had an effect on property prices along the road? If so, how have property prices changed? Has the construction of the road required land to be taken from any property owners in your area? If so, how many property owners have been affected? To your knowledge, were any of these property owners compensated for the land that was taken from them? If so, how much compensation did they receive? Who compensated them? If not, has there been anything done to secure compensation for them? From your understanding, who is responsible to compensate property owners that have had land taken from them?

5. Problems and Priorities for Development in the City

What are the biggest problems and concerns of your city? How are these problems and difficulties connected with the road condition and transport? How do you cope with these difficulties? In your opinion, how can these problems be solved? What do you think should be the priorities for the development of your city and the improvement of the people's living the city? Any suggestions or recommendations?

6. Government and Aid Assistance

Are you aware of any programs by the government, donors (US, NATO, World Bank, etc.), or NGOs that have tried to help improve economic life in the city in the past five years? Describe some of these. How successful were they? Explain.

7. Other Comments of the Participants Recorded During the Focus Groups Discussions

APPENDIX 2: INSTRUMENTS

2.15 FOCUS GROUP GUIDE – VILLAGE WOMEN

Survey: KF2010VWFG

IRP Keshim – Faizabad Focus Group Discussion:

Village Module (Women)

A.1	**District Identification**	
A.2	**City identification**	
A.3	**Date**	
A.4	**Time**	**Start:**
		Finish:

		Name	Signature	Date (M/D/Y)	ID Code
A5	Facilitator				
A6	Recorder				
A7	Survey Manager				
A8	Data Entry				

Participant Roster

#	Name	Age	Gender	Occupation
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[At this point, please begin the focus group discussion by saying] **Good Afternoon, my name is_____. I am working on behalf of the company that is constructing the Keshim–Faizabad Road. As part of this project, we are conducting this group discussion, with the permission of your village leaders that asks important questions about your village's economic life and how transport issues affect the village's welfare. I must underline that the purpose of this meeting is to hear your points of view on these important issues. The results will be used to better understand how improvements in the Keshim–Faizabad Road will impact villages like yours along the road. While your viewpoints will be included in the study, I can in no way promise that the Islamic Republic of Afghanistan will respond to the recommendations you make in the course of this conversation.**

Please be aware that participation in this discussion is completely voluntary and your comments will be kept in the strictest confidence. Your responses will be combined with those of other respondents and any personal information will not be used for this study.

At this time, do you want to ask me anything about the discussion? ***[If asked, the discussion will take approximately 1 hour]***

May I begin now?"

[Once participants signal their assent, proceed with the discussion.]

1. Economic Opportunity

How difficult is it to find a job? How do current wages compare to household expenses? In your opinion, what needs to be done in order for there to be better economic opportunities? Are there things the government could do to improve the economic life of the village? Are there sufficient economic opportunities for women? Are the economic opportunities for women improving or getting worse? How difficult is it for women to work outside of the home?

2. Major Income Sources

What percentage of people's income in the village comes from farm work and what percentage comes from off-farm work? What are the major sources of income of the people in the village? List the activities, and rank in the order of importance as the village's income source.

3. Major Expenditure Items

What are the major expenditures of the people in your village? List items, and rank in the order of importance.

4. Impact of the Road Improvement for Village Development

How important is the road for you and your living? What is the major use of the road in your village (to go buy/sell food, to go to school, etc.)? How will the road improvement affect your village and your economic activities? How will it affect the time it takes to travel to schools? Health clinics? Markets? Are there negative impacts that the road's improvement could have on your village? Explain. Has the road led to any increases in traffic accidents? Explain. Has there been anything to encourage greater safety for drivers or pedestrians? How will the road impact women in particular? In what way will it help the lives of women? Are there ways in which the road could negatively impact women? What would need to happen so that women can use the road more effectively (i.e., separate hotels, restaurants, facilities for children, etc.)?

5. Impact of Road Construction on Property

Has the construction of the road had an effect on property prices along the road? If so, how have property prices changed? Has the construction of the road required land to be taken from any property owners in your area? If so, how many property owners have been affected? To your knowledge, were any of these property owners compensated for the land that was taken from them? If so, how much compensation did they receive? Who compensated them? If not, has there been anything done to secure compensation for them? From your understanding, who is responsible to compensate property owners that have had land taken from them?

6. Access to Markets for Shopping

Who does the shopping in your household? When you need goods that are not found in your village, where do you go to buy them? How far is this market? How do you (or whoever goes in the household) usually get there**? If they drive or go by taxi or bus, ask:** How much does it typically cost? How do the prices of similar goods compare between your village market and these other markets? Does anyone in your household ever go to larger towns like Keshim or Faizabad to buy goods? If not, why not? If so, how do prices for the same goods compare with the ones you find in your own market? If transport were cheaper, would your household go to markets outside of your village more? Are there markets that women can shop at? Are there things that could be done to provide greater access to markets for women?

7. Access to Markets for Selling

Does anyone in your household sell goods that you grow or make? Do they ever go to larger towns like Keshim or Faizabad to sell goods? If not, why not? If so, how do prices for the same goods compare with the ones you find in your own market? Could they get a better price for the goods there? If transport were cheaper, would they go to markets outside of their village more? If so, would this affect the kinds of crops your household chooses to grow or the kind of goods you make? How so?

8. Problems and Priorities for Development in the Village

What are the biggest problems and concerns of your village? How are these problems and difficulties connected with the road condition and transport? How do you cope with these difficulties? In your opinion, how can these problems be solved? What do you think should be the priorities for the development of your village and the improvement of the people's living in your village? What needs to be done to improve the lives of women? Any suggestions and recommendations?

9. Government and Aid Assistance

Are you aware of any programs by the government, donors (US, NATO, World Bank, etc.), or NGOs that have tried to help improve economic life in the city in the past five years? Describe some of these. How successful were they? Explain. Have there been any programs focused on improving the welfare of women? Describe some of these. How successful were they? Explain.

10. Other Comments of the Participants Recorded During the Focus Groups Discussions

APPENDIX 2: INSTRUMENTS

2.16 FOCUS GROUP GUIDE – URBAN WOMEN

Survey: KF2010UWFG

IRP Keshim – Faizabad Focus Group Discussion:

Urban Module (Women)

A.1	**District Identification**	
A.2	**City identification**	
A.3	**Date**	
A.4	**Time**	**Start:**
		Finish:

		Name	Signature	Date (M/D/Y)	ID Code
A5	Facilitator				
A6	Recorder				
A7	Survey Manager				
A8	Data Entry				

Participant Roster

#	Name	Age	Gender	Occupation
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[At this point, please begin the focus group discussion by saying] **Good Afternoon, my name is_____. I am working on behalf of the company that constructed the Keshim–Faizabad Road. As part of this project, we are conducting this group discussion, with the permission of your city leader, that asks important questions about your city's economic life and how transport issues affect the city's welfare. I must underline that the purpose of this meeting is to hear your points of view on these important issues. The results will be used to better understand how improvements in the Keshim–Faizabad Road will impact cities like yours along the road. While your viewpoints will be included in the study, I can in no way promise that the Islamic Republic of Afghanistan will respond to the recommendations you make in the course of this conversation.**

Please be aware that participation in this discussion is completely voluntary and your comments will be kept in the strictest confidence. Your responses will be combined with those of other respondents and any personal information will not be used for this study.

At this time, do you want to ask me anything about the discussion? ***[If asked, the discussion will take approximately 1 hour]***

May I begin now?

[Once participants signal their assent, proceed with the discussion.]

1. Economic Opportunity

How difficult is it to find a job? How do current wages compare to household expenses? In your opinion, what needs to be done in order for there to be better economic opportunities? Are there things the government could do to improve the economic life of the city? Are there sufficient economic opportunities for women? Are the economic opportunities for women improving or getting worse? How difficult is it for women to work outside of the home?

2. Major Expenditure Items

What are your major expenditures? List items, and rank in the order of importance. What impact, if any, do you think the road will have on these expenditures? Why?

3. Impact of the Road Improvement for City Development

How important is the road for you and your living? What will the major use of the road be for people living in the city (to go see family, to travel to places of work, etc.)? If travel on the road were cheaper, would you use it more? How will the road improvement affect the city's economy? Are there negative impacts that the road's improvement could have on the city? How will the road impact women in particular? In what way will it help the lives of women? Are there ways in which the road could negatively impact women? What would need to happen so that women can use the road more effectively (i.e., separate hotels, restaurants, facilities for children, etc.)? Has the road led to any increases in traffic accidents? Explain. Has there been anything to encourage greater safety for drivers or pedestrians?

4. Impact of Road Construction on Property

Has the construction of the road had an effect on property prices along the road? If so, how have property prices changed? Has the construction of the road required land to be taken from any property owners in your area? If so, how many property owners have been affected? To your knowledge, were any of these property owners compensated for the land that was taken from them? If so, how much compensation did they receive? Who compensated them? If not, has there been anything done to secure compensation for them? From your understanding, who is responsible to compensate property owners that have had land taken from them?

5. Problems and Priorities for Development in the City

What are the biggest problems and concerns of your city? How are these problems and difficulties connected with the road condition and transport? How do you cope with these difficulties? In your opinion, how can these problems be solved? What do you think should be the priorities for the development of your city and the improvement of the people's living the city? What needs to be done to improve the lives of women? Any suggestions or recommendations?

6. Government and Aid Assistance

Are you aware of any programs by the government, donors (US, NATO, World Bank, etc.), or NGOs that have tried to help improve economic life in the city in the past five years? Have there been any programs focused on improving the welfare of women? Describe some of these. How successful were they? Explain.

7. Other Comments of the Participants Recorded During the Focus Groups Discussions

APPENDIX 2: INSTRUMENTS

2.17 FOCUS GROUP GUIDE – BUSINESSMEN

Survey: KF2010BZFG

IRP Keshim – Faizabad Focus Group Discussion:

Businessmen Module

A.1	**District Identification**	
A.2	**City identification**	
A.3	**Date**	
A.4	**Time**	**Start:**
		Finish:

		Name	Signature	Date (M/D/Y)	ID Code
A5	Facilitator				
A6	Recorder				
A7	Survey Manager				
A8	Data Entry				

Participant Roster

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[At this point, please begin the focus group discussion by saying] **Good Afternoon, my name is_____. I am working on behalf of the company that constructed the Keshim–Faizabad Road. As part of this project, we are conducting this group discussion, with the permission of your city leaders, that asks important questions about your city's economic life and how transport issues affect your business' welfare. I must underline that the purpose of this meeting is to hear your points of view on these important issues. The results will be used to better understand how improvements in the Keshim–Faizabad Road will impact businesses like yours along the road. While your viewpoints will be included in the study, I can in no way promise that the Islamic Republic of Afghanistan will respond to the recommendations you make in the course of this conversation.**

Please be aware that participation in this discussion is completely voluntary and your comments will be kept in the strictest confidence. Your responses will be combined with those of other respondents and any personal information will not be used for this study.

At this time, do you want to ask me anything about the discussion? ***[If asked, the discussion will take approximately 1 hour]***

May I begin now?

[Once participants signal their assent, proceed with the discussion.]

1. Economic Overview

What are the primary economic sectors of this city? Which sectors are experiencing the most growth? Why do you think these sectors are growing? Which sectors have the greatest potential for growth? What would help these sectors grow? Where are the most significant markets for goods produced in this city and region? What kinds of goods are sold in markets like Kabul and Kunduz? What percentage of commerce here is associated with trade with Tajikistan or other countries? Describe. What kinds of goods are imported from there? What goods have been successfully exported there?

2. Economic Obstacles

What are the biggest obstacles facing the city in terms of its economic development? Is the government adequately supportive of the commercial sector? Explain. What policies need to be introduced or changed to help stimulate the business environment? What kinds of corruption do you face in the operation of your business? How does corruption impact the success of your business?

3. Transport and Commerce

How do you receive merchandise to carry out your business? If you get your merchandise/goods locally, then how do you get it to your customers? How do the current transport routes affect the markets you buy and sell from? How will the new construction of the Keshim–Faizabad Road affect the kinds of markets you use? Has the Keshim–Faizabad Road made any difference in the delivery of services or goods for your business? Has it changed shipping times? Has it improved the quality of the goods? Has it changed the markets that you buy or sell your goods at? If so, please explain. Has it changed the kinds of goods that are available for sale in your city? If so, please explain. How has it affected the prices of goods brought in from other regions? How has it affected the price of goods you sell in markets farther away? Will the road increase the level of competition for your business? How will it affect transit routes for trade with Tajikistan and other countries? In what other ways will the new road affect your business?

4. Cost of Transport

Have you noticed a change this past year in how much it costs to transport goods along the Keshim–Faizabad Road? If so, please explain what is different. How many businesses have their own vehicles to transport their

goods? How many businesses use private transport companies? In your opinion, are transport prices set competitively? If not, how are they set? Truckers' association? Government? Do you insure goods that you transport? Why or why not?

5. Impact of the Road Construction on Property

Has the construction of the road had an effect on property prices along the road? If so, how have property prices changed? To your knowledge, has the construction of the road required land to be taken from property owners? If so, how many property owners do you estimate have had land taken from them? Do you know if any of these property owners were compensated for the land that was taken from them? If so, how much compensation did they receive? Who compensated them? If not, do you know if there has been anything done to secure compensation for them? From your understanding, who is responsible to compensate property owners that have had land taken from them?

6. Current Aid to Businesses

Are you aware of any programs by the government or donors (US, NATO, World Bank, etc.) that have tried to help the business environment in the past five years? Describe some of these. How successful were they? Explain.

7. Priorities for Commercial Development

In your opinion, what do you think should be the priorities for the development of commerce in this city? **[List items, and encourage group to rank items in the order of importance.]** Any suggestions or recommendations?

8. Competition in the Area

How much competition is there among businesses in your area of operation? How will the new road impact the level of competition? Increase? Decrease? How will it impact competition for your specific business type? Have you already seen an increase in businesses due to the road's construction? If yes, please explain.

9. Other Comments of the Participants Recorded During the Focus Groups Discussions

APPENDIX 2: INSTRUMENTS

2.18 FOCUS GROUP GUIDE – FREIGHT TRUCK OPERATORS

Survey: KF2010FTFG

IRP Keshim – Faizabad Focus Group Discussion:

Freight Truck Module

A.1	**District Identification**	
A.2	**City identification**	
A.3	**Date**	
A.4	**Time**	**Start:**
		Finish:

		Name	Signature	Date (M/D/Y)	ID Code
A5	Facilitator				
A6	Recorder				
A7	Survey Manager				
A8	Data Entry				

Participant Roster

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[At this point, please begin the focus group discussion by saying] **Good Afternoon, my name is_____. I am working on behalf of the company that constructed the Keshim–Faizabad Road. As part of this project, we are conducting this group discussion, with the permission of your city leaders. I must underline that the purpose of this meeting is to hear your points of view. The results will be used to better understand how improvements in the Keshim–Faizabad Road will impact freight businesses like yours. While your viewpoints will be included in the study, I can in no way promise that the Islamic Republic of Afghanistan will respond to the recommendations you make in the course of this conversation.**

Please be aware that participation in this discussion is completely voluntary and your comments will be kept in the strictest confidence. Your responses will be combined with those of other respondents and any personal information will not be used for this study.

At this time, do you want to ask me anything about the discussion? ***[If asked, the discussion will take approximately 1 hour]***

May I begin now?

[Once participants signal their assent, proceed with the discussion.]

1. Overview

How often do you use the road for your freight service? Since the road has been constructed, have you noticed an increase in demand for trips on the road? If so, please explain. How long does it take to travel between Keshim and Faizabad now? How long did it take three years ago before the road construction began? How much does it cost to ship a full truckload between these two cities? How much did you charge before the road was constructed? Has the newly constructed road changed how much you earn for each trip? Has it improved your overall earnings?

2. Vehicle Operator Costs

Has the new road changed how much you spend on your truck? If so, explain. On average, how many liters of fuel does it take to make the trip between Keshim and Faizabad? On average, how many liters of fuel did it take earlier? Has the road made any difference in terms of the kinds of repairs your truck requires? If so, please explain what has changed.

3. Safety

How often do you drive on the Keshim–Faizabad Road at night? Has this changed since the road has been built? Do you feel it is safe to travel on the road at night? If not, what problems are there? Bandits? Insurgents? Military? Have you personally had any problems when driving at night? Goods or truck stolen? Physical injury? Have you heard of this happening to other trucks?

4. Informal Payments

Are you ever stopped along the road to pay official or unofficial charges? If so, in a trip between Keshim and Faizabad, how many times are you typically stopped? What is the reason given for any payments that are requested? Are the places that you are stopped generally the same? How much is generally asked for? Does it depend on the size of the load you are carrying? How much do you typically have to pay in a trip between Keshim and Faizabad? Have you noticed a change in the number of times you are stopped since the road's construction? If so, explain what is different. Have you noticed a change in the amount you have to pay? If so, explain what is different.

5. Competitive Environment

What does it take to start freight truck service here? Is there any limit to the number of trucks that can work here? In the past few years, have you noticed any increase in the number of trucks working in this area? If yes, please explain. Have you noticed a change in the number of freight trucks coming into Badakhshan from other provinces? Explain. Have you increased the number of trips you take to Kabul? To other provinces? Have the kind of goods you ship changed in any way? Explain. Overall, how do you think the new road will affect your business? In what ways will it make your business better? In what ways will it hurt your business?

6. Other Comments of the Participants Recorded During the Focus Groups Discussions

APPENDIX 2: INSTRUMENTS

2.19 FOCUS GROUP GUIDE – PERSONAL VEHICLE OPERATORS

Survey: KF2010PVFG

IRP Keshim – Faizabad Focus Group Discussion:

Personal Vehicle Module

A.1	District Identification	
A.2	**City identification**	
A.3	**Date**	
A.4	**Time**	**Start:**
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		Name	Signature	Date (M/D/Y)	ID Code
A5	Facilitator				
A6	Recorder				
A7	Survey Manager				
A8	Data Entry				

Participant Roster

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[At this point, please begin the focus group discussion by saying] **Good Afternoon, my name is_____. I am working on behalf of the company that constructed the Keshim–Faizabad Road. As part of this project, we are conducting this group discussion, with the permission of your city leaders. I must underline that the purpose of this meeting is to hear your points of view. The results will be used to better understand how improvements in the Keshim–Faizabad Road will impact drivers who use the road. While your viewpoints will be included in the study, I can in no way promise that the Islamic Republic of Afghanistan will respond to the recommendations you make in the course of this conversation.**

Please be aware that participation in this discussion is completely voluntary and your comments will be kept in the strictest confidence. Your responses will be combined with those of other respondents and any personal information will not be used for this study.

At this time, do you want to ask me anything about the discussion? ***[If asked, the discussion will take approximately 1 hour]***

May I begin now?
[Once participants signal their assent, proceed with the discussion.]

1. Overview

How often do you drive on the road? Since the road has been constructed, have you increased the number of times you use the road? Has it changed the reasons you use the road? Please explain. How long does it take to travel between Keshim and Faizabad now? How long did it take three years ago before the road construction began?

2. Vehicle Operator Costs

Has the newly constructed road changed how much you spend on your vehicle? If so, explain. On average, how many liters of fuel does it take to make the trip between Keshim and Faizabad? On average, how many liters of fuel did it take earlier? Has the road made any difference in terms of the kinds of repairs your vehicle requires? If so, please explain what has changed.

3. Safety

How often do you drive on the Keshim–Faizabad Road at night? Has this changed since the road has been built? If so, please explain. Do you feel it is safe to travel on the road at night? If not, what problems are there? Bandits? Insurgents? Military? Have you personally had any problems when driving at night? Goods or vehicle stolen? Physical injury? Have you heard of this happening to other cars?

4. Informal Payments

Are you ever stopped along the road to pay official or unofficial charges? If so, in a trip between Keshim and Faizabad, how many times are you typically stopped? What is the reason given for any payments that are requested? Are the places that you are stopped generally the same? How much is generally asked for? How much do you typically have to pay in a trip between Keshim and Faizabad? Have you noticed a change in the number of times you are stopped since the road has been improved? If so, explain what it is different. Have you noticed a change in the amount you have to pay? If so, explain what it is different.

5. Vehicle Ownership

How has the road affected the frequency people in your area travel between Keshim and Faizabad? In your opinion, has the road affected the number of vehicles owned in your area? Overall, what are the main changes the new road will bring to the area?

6. Other Comments of the Participants Recorded During the Focus Groups Discussions

APPENDIX 2: INSTRUMENTS

2.20 FOCUS GROUP GUIDE – TAXI OPERATORS

Survey: KF2010TXFG

IRP Keshim – Faizabad Focus Group Discussion:

Taxi Module

A.1	**District Identification**	
A.2	**City identification**	
A.3	**Date**	
A.4	**Time**	**Start:**
		Finish:

		Name	Signature	Date (M/D/Y)	ID Code
A5	Facilitator				
A6	Recorder				
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Participant Roster

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[At this point, please begin the focus group discussion by saying] **Good Afternoon, my name is_____. I am working on behalf of the company that constructed the Keshim–Faizabad Road. As part of this project, we are conducting this group discussion, with the permission of your city leaders. I must underline that the purpose of this meeting is to hear your points of view. The results will be used to better understand how improvements in the Keshim–Faizabad Road will impact passenger travel along the road. While your viewpoints will be included in the study, I can in no way promise that the Islamic Republic of Afghanistan will respond to the recommendations you make in the course of this conversation.**

Please be aware that participation in this discussion is completely voluntary and your comments will be kept in the strictest confidence. Your responses will be combined with those of other respondents and any personal information will not be used for this study.

At this time, do you want to ask me anything about the discussion? ***[If asked, the discussion will take approximately 1 hour]***

May I begin now?

[Once participants signal their assent, proceed with the discussion.

1. Overview

How often do you use the road for your taxi service? Since the road construction has finished , have you noticed an increase in demand for trips on the road? How long does it take to travel between Keshim and Faizabad now? How long did it take three years ago before the road construction began? How much do you charge now to take a person between these two cities? How much did you charge before the road was improved? Has the newly constructed road changed how much you earn?

2. Vehicle Operator Costs

Has the new road changed how much you spend on your vehicle? If so, explain. On average, how many liters of fuel does it take to make the trip between Keshim and Faizabad? On average, how many liters of fuel did it take earlier? Has the road made any difference in terms of the kinds of repairs your car requires? Have you heard of this happening to other cars?

3. Safety

How often do you drive on the Keshim–Faizabad Road at night? Has this increased since the road has been built? Do you feel it is safe to travel on the road at night? If not, what problems are there? Bandits? Insurgents? Military? Have you personally had any problems when driving at night? Goods or car stolen? Physical injury?

4. Informal Payments

Are you ever stopped along the road to pay official or unofficial charges? If so, in a trip between Keshim and Faizabad, how many times are you typically stopped? What is the reason given for any payments that are requested? Are the places that you are stopped generally the same? How much is generally asked for? Does it depend on the number of people riding it the vehicle? How much do you typically have to pay in a trip between Keshim and Faizabad? Have you noticed a change in the number of times you are stopped since the road has been improved? If so, explain what is different. Have you noticed a change in the amount you have to pay? If so, explain what is different.

5. Competitive Environment

What does it take to start taxi service here? Is there any limit to the number of cars that can be taxis? Have you noticed an increase in the number of taxis the past few years? Explain. Have you noticed an increase in

personal vehicle use? Has there been an increase in the use of rickshaws? Overall, how do you think the newly constructed road will affect your business? In what ways will it make your business better? In what ways will it hurt your business?

6. Other Comments of the Participants Recorded During the Focus Groups Discussions

APPENDIX 2: INSTRUMENTS

2.21 FOCUS GROUP GUIDE – BUS SERVICE OPERATORS

Survey: KF2010BUSFG

IRP Keshim – Faizabad Focus Group Discussion:

Bus Module

A.1	**District Identification**	
A.2	**City identification**	
A.3	**Date**	
A.4	**Time**	**Start:**
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		Name	Signature	Date (M/D/Y)	ID Code
A5	Facilitator				
A6	Recorder				
A7	Survey Manager				
A8	Data Entry				

Participant Roster

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[At this point, please begin the focus group discussion by saying] **Good Afternoon, my name is_____. I am working on behalf of the company that constructed the Keshim–Faizabad Road. As part of this project, we are conducting this group discussion, with the permission of your city leaders. I must underline that the purpose of this meeting is to hear your points of view on these important issues. The results will be used to better understand how improvements in the Keshim–Faizabad Road will impact passenger travel along the road. While your viewpoints will be included in the study, I can in no way promise that the Islamic Republic of Afghanistan will respond to the recommendations you make in the course of this conversation.**

Please be aware that participation in this discussion is completely voluntary and your comments will be kept in the strictest confidence. Your responses will be combined with those of other respondents and any personal information will not be used for this study.

At this time, do you want to ask me anything about the discussion? ***[If asked, the discussion will take approximately 1 hour]***

May I begin now?

[Once participants signal their assent, proceed with the discussion.]

1. Overview

How often do you use the road for your bus service? Since the road has been constructed, have you noticed an increased demand for trips on the road? If so, explain what has changed. How long does it take to travel between Keshim and Faizabad now? How long did it take three years ago before the road construction began? How much do you charge one passenger for a trip between these two cities? How much did you charge before the road was constructed? Has the new road changed how much you earn for each trip? Has it improved your overall earnings?

2. Vehicle Operator Costs

Have the newly constructed road changed how much you spend on your bus? If so, explain. On average, how many liters of fuel does it take to make the trip between Keshim and Faizabad? On average, how many liters of fuel did it take before the road was constructed? Has the road made any difference in terms of the kinds of repairs your bus requires? If so, please explain what has changed.

3. Safety

How often do you drive on the Keshim–Faizabad Road at night? Has this changed since the road has been built? Do you feel it is safe to travel on the road at night? If not, what problems are there? Bandits? Insurgents? Military? Have you personally had any problems when driving at night? Goods or vehicle stolen? Physical injury? Have you heard of this happening to other buses?

4. Informal Payments

Are you ever stopped along the road to pay official or unofficial charges? If so, in a trip between Keshim and Faizabad, how many times are you typically stopped? What is the reason given for any payments that are requested? Are the places that you are stopped generally the same? How much is generally asked for? Does it depend on the number of passengers you are carrying? How much do you typically have to pay in a trip between Keshim and Faizabad? Have you noticed a change in the number of times you are stopped since the road has been constructed? If so, explain what it is different. Have you noticed a change in the amount you have to pay? If so, explain what it is different.

5. Competitive Environment

What does it take to start a bus service here? Is there any limit to the number of buses that can work here? Have you noticed an increase in the number of buses working in this area the past few years? Explain? Have you noticed a change in the number of buses coming into Badakhshan from other provinces? Explain. Have you increased the number of trips you take to Kabul? To other provinces? Overall, how do you think the improved road will affect your business? In what ways will it make your business better? In what ways will it hurt your business?

6. Other Comments of the Participants Recorded During the Focus Groups Discussions