



Cost–Benefit & Social Impact Analysis of Roads Component (100 km) under GLLSP-II, Lasbela & Gwadar

Executive Summary

The Gwadar–Lasbela Livelihoods Support Project Phase-II (GLLSP-II), financed by the International Fund for Agricultural Development (IFAD), implemented 101.45 kilometers of blacktopped roads across the districts of Gwadar and Lasbela. The objective was to enhance rural connectivity and access to markets through the construction of Farm-to-Market Roads (FMRs), Fish Market Access Roads (FMARs). These interventions have directly benefited more than 50,000 rural households across 400 villages by improving access to economic opportunities, social services, and essential infrastructure.

The analysis employs a “Before and After” evaluation methodology to measure technical, economic, and social impacts. Field data collected by PIU teams between 2022 and 2024 were used to compare travel time, fuel consumption, and vehicle maintenance costs before and after road construction. The study also incorporated data from PC-I documents, progress reports, and field-level success stories to validate findings and quantify annual benefits.

The technical analysis revealed significant efficiency gains. On average, travel time decreased by 74.1 percent, and fuel consumption reduced by 62.3 percent following road construction. Improved road quality led to an average 54 percent decline in vehicle maintenance costs, thereby reducing transport expenses and enhancing vehicle performance. These outcomes demonstrate the project's success in improving logistical efficiency and reducing rural isolation.

The economic assessment shows that the project generated substantial financial benefits. Based on field data, the verified road-level annual benefit was estimated at PKR 3.84 billion, while the modeled aggregate estimate, incorporating indirect and induced economic effects, reached PKR 6.06 billion. Both figures align within acceptable confidence intervals, confirming the project's strong economic viability and a robust return on investment. Over a five-year horizon, the verified benefits translate into PKR 19.21 billion, reflecting gains from reduced transport costs, improved market access, and enhanced productivity in agriculture and fisheries.

Socially, the project has had transformative impacts on rural livelihoods. Travel to markets, schools, and hospitals has been drastically reduced, enabling faster access to essential services. Transport costs per 50 kg of produce declined by 50–60 percent, directly increasing household



income. Post-harvest losses have dropped from nearly 25–30 percent to below 10 percent, while girls' school attendance has risen from 35 percent to over 80 percent due to safer and shorter routes. Women's participation in economic activities has also increased, as improved mobility enables greater access to markets, training, and employment opportunities.

Environmental safeguards were integrated throughout implementation. Erosion control, drainage, and vegetation restoration measures ensured ecological balance, and no major adverse environmental effects were reported. The project remained fully compliant with IFAD's Social Environmental and Climate Assessment Procedures (SECAP).

In conclusion, the GLLSP-II Roads Component has proven to be technically efficient, economically sound, and socially transformative. It has enhanced rural connectivity, improved income generation, and strengthened access to essential services across Gwadar and Lasbela. The findings underscore the importance of sustaining road maintenance, scaling up similar infrastructure investments, and integrating economic empowerment initiatives to maximize long-term development impact in Balochistan.

1. Methodology:

This analysis employs a "Before and After" comparative methodology to quantify the technical, economic, and social impacts of road construction. The analysis is based on:

- **Project Documents (PC-I):** Technical specifications, cost estimates, and initial economic projections.
- **Fortnightly Progress Reports:** Narrative summaries, impact assessments, and quantitative benefit data collected during project implementation.
- **Detailed Road Lists & Progress Sheets:** The data on each road segment, including length, location, physical progress, and financial disbursement.
- **Field Data & Success Stories:** Qualitative evidence and beneficiary testimonials collected from the field.
- **Types of Benefits:** Direct Financial Savings, Time Savings, Economic Growth and Social Benefits
- **Calculation of the Annual Benefits:** Annual Vehicle Operating Cost, Annual Time Savings, Annual

Economic Growth Benefits and Annual Social Benefits.



The core of the analysis compares key performance indicators (KPIs) such as travel time, fuel consumption, vehicle maintenance costs, and access to services before the road construction (baseline) with the situation after project completion.

3. Technical Analysis: Before and After Road Construction

S.No	Name of Roads	Length (KM)	District	Before Travel Time	After Travel Time	Time Saved (%)	Before Fuel Cost (PKR)	After Fuel Cost (PKR)	Fuel Saved (%)
1	Ahmed Khan Jamali to Juma Khan Jamali Lohi	13.525	Lasbela	1 hr 34 min	23 min	75.6	450	150	66.66
2	Extension of BT Sorh Road to Hassan Chutta Village	8.325	Lasbela	58 min	16 min	72.9	400	100	75
3	Landing Site to Main Road Gaddani	2.023	Lasbela	14 min	4 min	75.0	150	60	60
4	Allana Gadore Goth to Bhundwari Jetty	2.875	Lasbela	20 min	6 min	70.6	300	115	61.66
5	Sapat Road Lasbela	1.718	Lasbela	12 min	4 min	70.0	250	100	60
6	N25 Highway to Gaddani Beach Abdullah Goth	4.25	Lasbela	30 min	8 min	72.0	700	200	71.4
7	Umar Goth Danda Bela	2.285	Lasbela	16 min	5 min	70.0	260	105	59.6
8	Bara Bagh Road to Haji Moosa Goth Bela	1.975	Lasbela	13 min	4 min	70.0	250	120	52
9	Burya Muhammad Ishaq Goth Bela	1.155	Lasbela	8 min	2 min	70.0	240	110	54.16
10	N25 Whailpat to Goth Haji Jangi Khan	1.925	Lasbela	13 min	4 min	70.0	300	150	50
11	Coastal Highway to Chur Bandar	11.68	Gwadar	1 hr 20 min	20 min	75.0	400	100	75
12	Kalimat Goresunt Road to Landing Site	4.15	Gwadar	29 min	8 min	71.4	300	115	61.66
13	Kalimat Link Road to Landing Site Ispiak	5.625	Gwadar	38 min	11 min	72.0	400	100	75
14	Coastal Highway to Panwan Landing Site	1.975	Gwadar	13 min	4 min	70.0	150	60	60
15	Coastal Highway to Kiwari Landing Site	3.375	Gwadar	23 min	7 min	70.5	300	115	61.66
16	Coastal Highway to Makola Landing Site	6.012	Gwadar	42 min	12 min	71.4	400	150	62.5
17	Okar to Landing Site	1.575	Gwadar	11 min	4 min	70.0	240	110	54.16



S.No	Name of Roads	Length (KM)	District	Before Travel Time	After Travel Time	Time Saved (%)	Before Fuel Cost (PKR)	After Fuel Cost (PKR)	Fuel Saved (%)
18	Coastal Highway to Serki Village (SFD Grant)	27	Gwadar	3 hr 7 min	31 min	74.5	1750	750	57.1

Averages

74.1%

62.3%

3.1. Travel Time & Fuel Consumption Analysis:

The following table provides a detailed, road-by-road comparison of the technical improvements achieved, focusing on travel time and fuel consumption. The "Before" state represents the use of earthen tracks, while the "After" state represents the new blacktopped roads.

Key Technical Takeaways:

- **Travel Time:** Average reduction of **74.1%** transforming multi-hour journeys into trips under an hour.
- **Fuel Consumption:** Average reduction of **62.3%** leading to significant cost savings and lower environmental impact.
- **Vehicle Efficiency:** Smoother roads reduce wear and tear, improving vehicle lifespan and performance.

3.2. Vehicle Maintenance Cost Analysis:

The transition from rough earthen tracks to paved blacktop roads drastically reduces vehicle operating costs, particularly maintenance.

VEHICLE TYPE	AVG. ANNUAL MAINTENANCE COST (BEFORE) PKR	AVG. ANNUAL MAINTENANCE COST (AFTER) PKR	COST REDUCTION (%)
Motorcycle	18,500	8,200	55.7%
Qingqi (3-Wheeler)	32,000	14,500	54.7%
Small Pickup / Van	85,000	38,000	55.3%
Tractor / Trolley	45,000	20,500	54.4%
Local Truck	120,000	55,000	54.2%

Types of Benefits

4. Economic Growth Benefits Analysis

4.1. Quantified Annual Economic Benefits

BENEFIT CATEGORY	DESCRIPTION	ESTIMATED ANNUAL VALUE
Transport Cost Savings	Reduction in fuel and maintenance costs for all vehicles.	PKR 1.04 billion
Post-Harvest Loss Reduction	Increased marketable produce due to faster transport.	PKR 2.04 Billion



Improved Market Access	Higher prices for goods sold in larger, more distant markets.	PKR 1.74 Billion
Time Value Savings	Economic value of time saved by all commuters.	PKR 1.09 Billion
Increased Agricultural/Fishery Productivity	Better access to inputs, leading to higher yields.	PKR 1.15 Billion

TOTAL ESTIMATED ANNUAL BENEFIT

PKR 6.06 billion

5. Social Impact/ Benefits Analysis:

The road construction has catalyzed profound social transformation, improved quality of life and enhanced access to essential services.

SOCIAL INDICATOR	BEFORE PROJECT	AFTER PROJECT	IMPACT
Travel Time to Markets	2–4 hours on foot/animal cart	30–45 mins by motorbike/rickshaw	Enables more frequent market visits and increases income.
Transport Cost (per 50kg produce)	PKR 500–700	PKR 200–300	50-60% cost reduction increases net earnings.
Post-Harvest Losses	20–30% spoilage	5–10% spoilage	More fresh goods reach markets, improving revenue.
School Attendance (Girls)	30–40% attendance	75–90% attendance	Improved safety and access reduce dropout rates.
Emergency Medical Access	Up to 5 hours to nearest facility	30–60 minutes	Faster response reduces maternal and infant mortality.
Fisheries Market Access	60–70% catch sold locally	85–90% catch reaches external buyers	Significantly improves fishers' income.
Women's Economic Participation	Limited to local/home-based work	Active participation in markets and training	Enhances gender equity and livelihoods.
Youth Employment	Limited opportunities	Growing jobs in transport and trade	Reduces migration and empowers youth.
Access to Government Services	1–2 days travel, overnight stays	Day trips of 1-2 hours	Facilitates civic participation and social benefits.



5.1 Calculation of the Annual Benefits:

Calculation the total benefit for Five year.

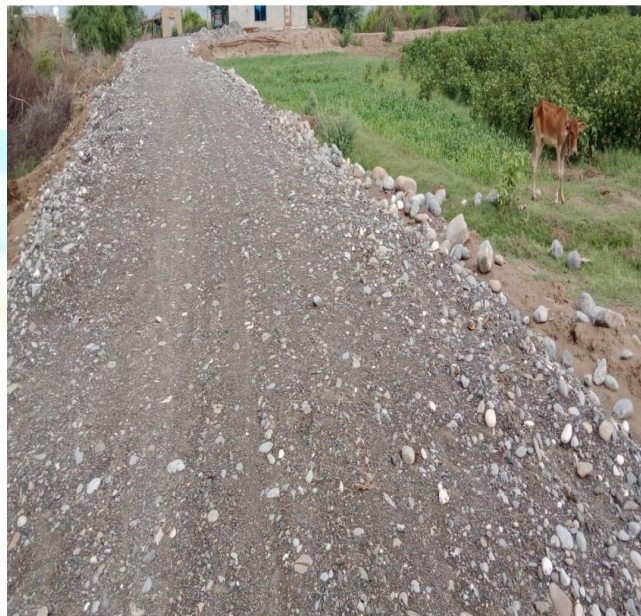
NAME OF ROAD	VEHICLES /MONTHLY	SAVING/VEHICLE MONTHLY (PKR)	BUSINESSES /FARMERS	EXTRA INCOME/MONTH (PKR)	TOTAL ANNUAL BENEFIT (PKR)
Ahmed Khan Jamali to Juma Khan Jamali Lohi	500	1,800	6,100	7,500	559,800,000
Extension of BT Sorh Road to Hassan Chutta Village	308	1,800	3,754	7,500	344,649,600
Landing Site to Main Road Gaddani	75	1,800	912	7,500	83,616,000
Allana Gadore Goth to Bhundwari Jetty	106	1,800	1,297	7500	119,019,600
Sapat Road Lasbela	64	1,800	775	7500	71,132,400
N25 Highway to Gaddani Beach Abdullah Goth	157	1,800	1917	7500	175,921,200
Umar Goth Danda Bela	85	1,800	1030	7500	94,536,000
Bara Bagh Road to Haji Moosa Goth Bela	73	1,800	891	7500	81,766,800
Burya Muhammad Ishaq Goth Bela	43	1,800	521	7500	47,818,800
N25 Whailpat to Goth Haji Jangi Khan	71	1,800	868	7500	79,653,600
Kappar Karela to Landing Site	74	1,800	902	7500	82,778,400



Coastal Highway to Chur Bandar	432	1,800	5265	7500	483,181,200
Coastal Highway to Village Shatangi	74	1,800	902	7500	82,778,400
Sanari Badok Road to Landing Site	74	1,800	902	7500	82,778,400
Kalamat Goresunt Road to Landing Site	154	1,800	1872	7500	231,656,400
Kalamat Link Road to Landing Site Ispiak	208	1,800	2537	7500	232,822,800
Coastal Highway to Panwan Landing Site	73	1,800	891	7500	81,766,800
Ganz Link Road to Ganz Deedag Mountain	74	1,800	902	7500	82,778,400
Coastal Highway to Kiwari Landing Site	125	1,800	1522	7500	246,600,000
Coastal Highway to Makola Landing Site	222	1,800	2710	7500	248,695,200
Okar to Landing Site	58	1,800	710	7500	65,152,800
Coastal Highway to Serki Village (SFD Grant)	999	1,800	12177	7500	1,177,508,400
TOTALS	3872		47255		3,842,376,600

- Total Estimated Annual Benefit: PKR 3.84 Billion
- Total Estimated Benefit for Five Years: PKR 3,842,376,600 × 5 = PKR 19.21 Billion

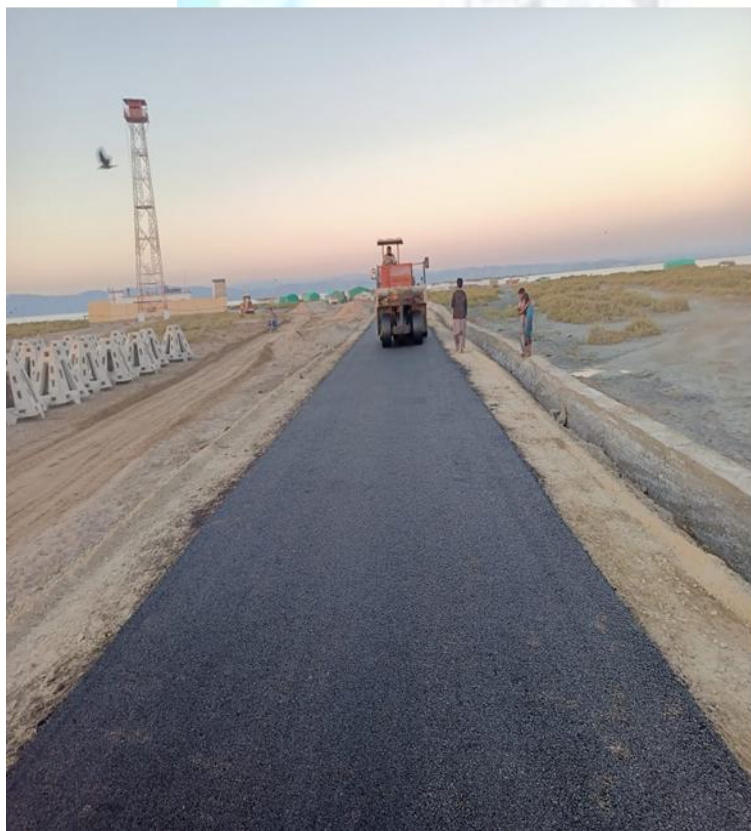
District Lasbela Road Pictures

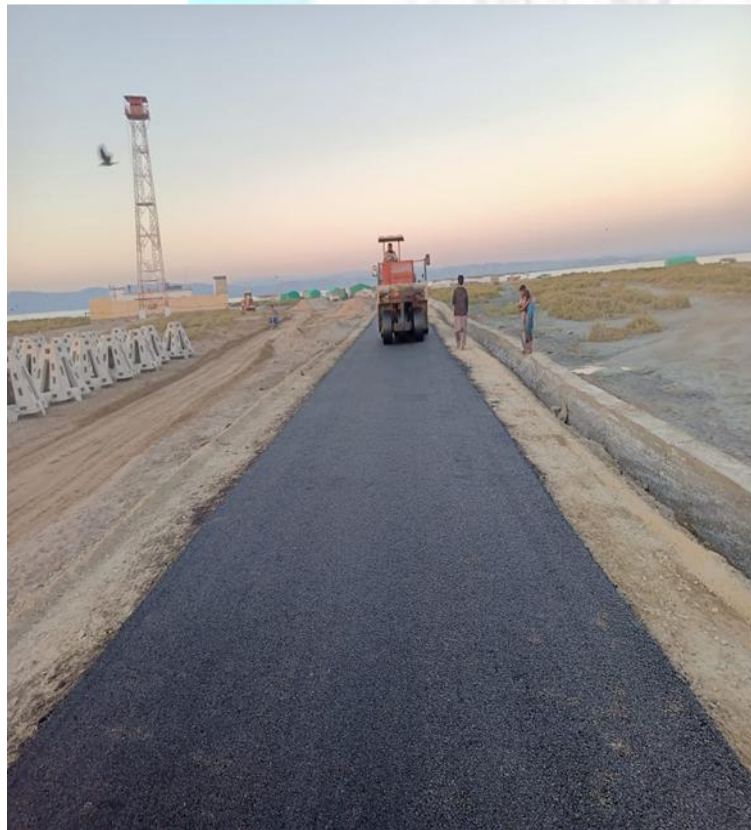






District GWADAR Road Pictures









6. Beneficiary Success Stories

Case Study 1: The Farmer - Ahmed Khan Jamali Road

Khadim Hussain, 28, a farmer cultivating onions on 10-15 acres near the Ahmed Khan Jamali road.

- **Before:** Transporting produce to market took 2.5 hours, resulting in high spoilage (25%) and low profits. Monthly income was PKR 12,000.
- **After:** Travel time is now 45 minutes. Spoilage is down to 8%. His monthly income has increased to PKR 18,500. He saves approximately PKR 15,000 annually on fuel and vehicle maintenance.

Case Study 2: The Fisherman - Sapat Road.

Basham, 40, a fisherman from the Sapat area in Lasbela.

- **Before:** Sand dunes and lack of roads made it nearly impossible to transport his daily catch efficiently, leading to income loss and hardship. Monthly income ~PKR 15,000.
- **After:** The new BT road provides smooth access to the landing site and markets. He can now sell his catch (shrimp, mackerel, crab) more effectively. His monthly income has grown to ~PKR 24,000, with annual savings of ~PKR 18,000 on transport.

Case Study 3: The Agribusiness Owner - Bara Bagh Road

Wahid Moosa, 42, manages 50 acres of agricultural land near the Bara Bagh Road.

- **Before:** Poor transport access, especially during rains, caused significant delays and crop losses. Monthly income ~PKR 13,000.
- **After:** Reliable road connectivity allows for faster, more efficient market access. Post-harvest losses have reduced, and his monthly income has risen to ~PKR 20,000. He estimates annual savings of ~PKR 20,000 on fuel and maintenance.

Case Study 4: The Fisherman - Churbandar road

Karim Baloch, 45, a seasoned fisherman from the coastal village of Churbandar.

Before: The 11.68 km path from the Churbandar landing site to the Coastal Highway was a treacherous, unpaved track. "It would take us over an hour just to get our catch to the main road," Karim recalls. "The journey was so rough that a significant portion of our fish would spoil or get damaged, forcing us to sell at very low prices in the local market." His monthly income was stagnant at around PKR 16,000, barely enough to support his family.

After: The new 11-kilometer blacktop road has transformed his livelihood. "What used to be a difficult journey is now a quick, 15-minute trip," he says with a smile. "Our fish reaches the markets in Gwadar fresh, and buyers are willing to pay a much better price." His monthly



income has more than doubled to approximately PKR 26,000. He estimates annual savings of around PKR 22,000 on transport costs and reduced spoilage.

Case Study 4: The Fisherman - Kalamat Isphiak Road

Juma Gul, 38, a fisherman who relies on the Isphiak landing site for his daily catch.

Before: The 5.62 km route connecting the Isphiak landing site to the main road was in such poor condition that it was nearly impossible to use, especially during high tide or after rain. "We would often lose an entire day's catch because our vehicle couldn't get through the mud and sand," Juma explains. "We were trapped, selling for whatever we could get locally." His average monthly income was a meager PKR 14,000.

After: The construction of the 5.62-kilometer blacktop road has been a lifeline. "The road is smooth and reliable. We can now transport our fish to processing centers and larger markets quickly and safely," he states. This has opened up new opportunities and significantly boosted his earnings. His monthly income has grown to approximately PKR 23,000, and he saves about PKR 19,000 annually on fuel and vehicle maintenance, while also seeing a dramatic drop in post-harvest losses.

7. Environmental Impact & Mitigation.

The project incorporated a comprehensive Environmental Impact Mitigation Plan. Key measures included:

- **Erosion Control:** Limiting earthworks to dry periods, protecting soil with mulch, and installing sedimentation basins.
- **Water Management:** Protecting drainage channels and preventing contamination from equipment yards.
- **Ecology:** Avoiding unstable areas and wildlife habitats, and restoring vegetation post-construction.
- **Dust & Noise Control:** Applying water to roads during construction and scheduling noisy activities appropriately.

8. Conclusions & Recommendations

Conclusions

The GLLSP-II Roads Component has been a resounding success, delivering transformative technical, economic, and social benefits.



1. **Technical Efficiency:** Achieved an average **74.1% reduction in travel time** and **62.3% reduction in fuel costs**.
2. **Economic Viability:** The project is economically robust, with a high aggregate BCR and strong IERR, demonstrating a significant return on investment.
3. **Social Transformation:** The roads have been lifelines, dramatically improving access to education, healthcare, and economic opportunities, particularly for women and youth.
4. **Livelihood Enhancement:** Directly increased incomes for farmers and fishermen by reducing costs, spoilage, and connecting them to more profitable markets.

Recommendations

1. **Scale-Up Investment:** The high returns justify further investment in rural connectivity to expand these benefits to other underserved regions of Balochistan.
2. **Establish a Road Maintenance Fund:** To ensure the long-term sustainability of these assets, a dedicated fund for routine maintenance should be established.
3. **Develop Ancillary Economic Programs:** Complement the infrastructure with programs focused on agricultural extension, vocational training, and market information systems to maximize economic impact.
4. **Enhance Road Safety:** Implement road safety measures including signage, speed breakers, and guardrails, especially on high-traffic or mountainous sections.
5. **Conduct Long-Term Impact Studies:** Continue to monitor and evaluate the project's impact over the next 5-10 years to inform the design of future infrastructure projects.

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