

Interactions between improved rural access infrastructure and transport services provision

Phase 2-3 Brief Progress Statement



Paul Starkey, Robin Workman and John Hine

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For further information, please contact:

Robin Workman, Principal International Consultant, TRL: rworkman@trl.co.uk
TRL, Crowthorne House, Nine Mile Ride, Wokingham RG40 3GA, UK

ReCAP Project Management Unit
Cardno Emerging Market (UK) Ltd
Clarendon Business Centre
Level 5, 42 Upper Berkeley Street
Marylebone, London W1H 5PW



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Cover photo: Paul Starkey: Rural road investment and transport services in Cox's Bazar, Bangladesh

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Abstract

The 'Interactions: Maintenance-Provision of Access for Rural Transport Services (IMPARTS)' project is examining how investments in low-volume rural road (LVRR) construction (provision) and maintenance (preservation) affect rural transport services (RTS). Improved RTS are vital for enabling access to facilities including markets, health facilities, education and socio-economic opportunities. While road investments are often justified by envisaged RTS improvements, few road authorities actually collect 'before' and 'after' RTS information. The Phase 1 literature review confirmed beneficial correlations between road investments and socio-economic impacts, but noted that few documents cited RTS information. This was confirmed by the Phase 1 workshop, which recommended that road authorities should have a more integrated approach and include RTS data in Maintenance Management databases. This statement reports progress in the Phase 2 tasks, which will involve surveys on LVRRs in one Asian and one African country. Visits were made to Ghana, Nepal and Tanzania to view possible roads and related RTS datasets. While all three countries provided helpful lessons relating to engineering issues and RTS, the 'before' datasets from Nepal and Tanzania were more comprehensive, so these countries were prioritised for surveys. In Nepal, two appropriate LVRRs were selected. In Tanzania, six roads were visited. It was concluded that all six roads should be surveyed, albeit with smaller datasets collected. This will provide an enhanced number of evidence-based lessons for the IMPARTS Guidelines output. There will also be synergy between Phase 2 and 3 tasks as transport operators on adjoining roads discuss what incentives or regulations would encourage them to operate on the surveyed roads. Survey instruments have been prepared and enumerators have been trained in both countries. Surveys in Nepal will start in August 2019. In Tanzania survey commencement depends on the requested research permissions being granted by the government.

Key words

Transport services improvements; Transport services indicators; Traffic counts; Rural mobility; Rural road outcomes; Rural road impacts; Rural road preservation; Rural road provision

Research for Community Access Partnership (ReCAP)

Safe and sustainable transport for rural communities

ReCAP is a research programme, funded by UK Aid, with the aim of promoting safe and sustainable transport for rural communities in Africa and Asia. ReCAP comprises the Africa Community Access Partnership (AfCAP) and the Asia Community Access Partnership (AsCAP). These partnerships support knowledge sharing between participating countries in order to enhance the uptake of low cost, proven solutions for rural access that maximise the use of local resources. The ReCAP programme is managed by Cardno Emerging Markets (UK) Ltd.

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Acronyms, Units and Currencies

AfCAP	Africa Community Access Partnership
AsCAP	Asia Community Access Partnership
COSTECH	Tanzania Commission for Science and Technology
DFID	Department for International Development, UK
DoLI	Department of Local Infrastructure
DoLIDAR	Department for Local Infrastructure Development and Agricultural Roads, Nepal
DRSP	District Roads Support Programme
eg	for example
GPRTU	Ghana Private Road Transport Union
GPS	Global positioning system
HD	High definition
HDM-4	Highway Development and Management software tool
IMPARTS	Interactions: Maintenance-Provision of Access for Rural Transport Services
IRAT	Improving Rural Access in Tanzania
IRI	International Roughness Index
kg	kilogram
km	kilometre
kph	kilometres per hour
LVRR	Low-volume rural road
MCC	Millennium Challenge Corporation (MCC)
MiDA	Millennium Development Authority
NPR	Nepal Rupee
Pax	Passengers
PO-RALG	President's Office, Regional Administration and Local Government (Tanzania)
ReCAP	Research for Community Access Partnership
RTS	Rural transport services
RTSi	Rural transport services indicator
SDC	Swiss Agency for Development and Cooperation
SWN	Scott Wilson Nepal
T2	Technology Transfer, Transportation Technology Transfer
TARURA	Tanzania Rural and Urban Roads Agency
TRL	Transport Research Laboratory
Tsh	Tanzania shilling
UK	United Kingdom
UKAid	United Kingdom Aid (Department for International Development, UK)
VOC	Vehicle operating costs

Executive Summary

The 'Interactions: Maintenance-Provision of Access for Rural Transport Services (IMPARTS)' research project is studying how the provision and maintenance of low-volume rural roads (LVRRs) impact rural transport services (RTS) and the mobility of people and their goods. The premise is that there should be an integrated approach to the provision-preservation-services continuum to ensure road investments are well planned, cost-effective and appropriate to the transport needs of rural communities.

Phase 1 tasks included a literature review and scoping report that highlighted the beneficial impacts of rural road investments on the local populations. This noted that very few of the studies cited had provided details of transport services, despite these being a key mechanism for achieving the benefits of road investments. Consultations with ReCAP countries confirmed that few road authorities had datasets concerning transport services. An inter-regional workshop of ReCAP stakeholders concluded that road authorities should take a more integrated approach to the provision-preservation-services continuum and use transport services information in their planning. Transport services outcome indications could be particularly valuable as they respond rapidly to changes in road conditions, and provide mechanisms for the achievement of the beneficial impacts. Such transport services indicators could become an integral part of road authority databases, such as Maintenance Management Systems.

Phase 2 started in May 2019. The first output was a conference paper relating to the use of transport services outcome indicators by road authorities. The main objective of the Phase 2 work is to inform the IMPARTS Guidelines through evidence-based studies of the interactions between road conditions and transport services, obtained through surveying selected LVRRs, in one Asian and one African country. The team undertook scoping visits to Ghana, Nepal and Tanzania, countries identified in Phase 1 as having interest in this research and likely to have suitable 'before' datasets to compare with the Phase 2 'after' surveys. All three countries provided excellent support to the team and had valuable case histories of road investments and transport services that could be used for Phase 2 surveys. Nepal and Tanzania had the better datasets and so were selected. All the datasets examined in Phase 2 (and most impact studies reviewed in Phase 1), were derived from surveys associated with donor-supported projects. These valuable datasets are often not retained in easily available forms within road authorities. One recommendation for the IMPARTS Guidelines will be that road authorities, and their supporting aid agencies, should ensure that collected datasets relating to transport services are embedded within the road authority databases. This should ensure they are accessible to road planners (and researchers) to show how transport services outcome indicators vary with time, road provision investments and maintenance interventions.

Two LVRRs were selected in Nepal. Both had been built using labour-based methods and provided interesting engineering examples, as well as a range of relevant transport services. In Tanzania, six roads were visited. On most of these, motorcycle taxis were the main provider of transport services. All six roads had interesting engineering features relevant to this study, including trial sections of surfacing options on one road. More importantly, there were clearly planning lessons relating to the infrastructure investments on all six roads. On several roads there were alternative types of transport services (e.g. buses, minibuses and three-wheelers) on adjacent roads but for various reasons, these had not started regular services on the roads where the infrastructure investments had been made. The team (in consultation with the ReCAP PMU) decided to survey all six roads, albeit with smaller sample sizes. This should provide good, evidence-based lessons for the Guidelines. Moreover, there will be important synergy with the Phase 3 task of working with transport operators, associations and authorities to identify how transport services can be improved and how operators can be incentivised (or regulated) to provide enhanced services on LVRRs.

Survey instruments have been prepared and are attached as an Annex. Arrangements have been made with local researchers in Nepal and Tanzania to implement the surveys. Enumerator training has been provided by the team. This included training relating to survey ethics, informing possible interviewees and obtaining written consent. Research in Nepal should start in early August. The start date in Tanzania will depend on the time taken for the necessary government consents. If these are not issued in good time, there is a risk that the research timetable could be delayed. Other than this unknown, the subsequent Phase 2 and Phase 3 outputs remain on schedule and the team is optimistic about the final research outputs, their relevance and potential impacts.

1 Background

1.1 Project overview

The Research for Community Access Partnership (ReCAP), funded by UKAid, commissioned TRL to undertake this research study to gain, and to disseminate, a greater understanding of how investments in low-volume rural roads (LVRRs) impact rural transport services (RTS) and the mobility of people and their goods. This project is known as IMPARTS (Interactions: Maintenance-Provision of Access for Rural Transport Services). It is exploring the interaction between the effective use of rural access and its dependency on the appropriate provision and preservation of LVRRs, and the resultant changes in rural transport service provision that are brought about through improved sustainable road performance.

There is understood to be a strong correlation between poverty and connectivity. Road access in rural areas can improve social welfare by increasing the proximity to, and quality of, basic services, and broadening livelihood opportunities, including agricultural production and marketing. Improved accessibility through the provision of rural road infrastructure and transport services can improve health and education outcomes by increasing attendance at clinics and schools and improving staff retention. Rural communities benefit from road infrastructure to allow them to reach markets, medical facilities, schools and income-generating opportunities. However, most rural people in low-income countries do not own motorised transport and therefore depend on various types of transport services for their mobility, access to services and earning potential.

The many benefits of LVRR are largely dependent on a sustained level of infrastructure performance linked to there being appropriate and affordable transport services: rural roads must be fit for purpose in terms of facilitating the movement of people and freight. Currently, infrastructure provision and preservation are largely disassociated from service provision. Therefore, this project is examining the relationships between LVRRs and transport services, and the links between LVRR-investment planning for provision and preservation and the actual achievement in terms of rural transport provision.

1.2 Research objective

The core objective is to examine the conditions in which rural transport services succeed or fail, and the relevance of infrastructure condition and level of service to that outcome.

Output: definitive guidelines on how the provision-preservation-services continuum can be improved in support of better livelihood opportunities for rural communities and have a positive impact on poverty reduction.

Impact: to improve accessibility and mobility for rural communities, and to improve the overall livelihood outcomes of those communities, and, in particular, vulnerable groups and individuals within those communities.

1.3 Phase 1 activities, achievements and issues

Phase 1, which started in May 2018, involved a detailed [literature review](#) of the relationships between low-volume rural roads, transport services and the outcomes and impacts for the rural populations (Starkey et al., 2019a). This cited impact studies from around the world on how rural road provision had affected the local populations, through improvements in mobility, agricultural production, access to medical facilities, education and poverty reduction. However, despite the large number of rural road projects in Africa, Asia, Latin America and island states, the number of clear impact lessons was surprisingly few. Most impact studies attempted to correlate various 'before' and 'after' datasets obtained through socio-economic surveys. Only a very small number of published studies have looked at transport services and the mechanisms by which these impacts had been achieved. Through liaison with road authorities in all 17 ReCAP countries, it was learned that while road investments are often justified by predicted improvements in transport services, few (if any) road authorities regularly collected 'before' and 'after' information on the transport services. Good datasets relating to rural transport services are rare. Even traffic counts on LVRR that have been consistently implemented over a period of time are difficult to find.

A project inter-regional stakeholder workshop was held in Arusha, Tanzania, in November 2018 and was attended by 39 participants from 12 ReCAP countries (Starkey et al., 2019b). The participants, who were mainly engineers from roads authorities, were motivated to understand transport services issues, and endorsed the need for more integrated approaches with transport services data informing the planning of road investments (construction and maintenance). The workshop concluded that roads authorities should try to collect, and use in their planning, simple transport services outcome indicators (such as modal distribution, tariffs, frequencies and journey times). Unlike impact indicators that may take five years or more to respond to road investments, transport services outcome indicators respond rapidly to road improvements. Importantly, they also respond quite quickly to road deterioration due to inadequate maintenance. Such transport services outcome indicators could be incorporated into road planning and Maintenance Management Systems.

During Phase 1, the team prepared a conference paper for the PIARC World Road Congress to be held in Abu Dhabi in October 2019 (Hine et al., 2019). They also prepared a journal paper that has been submitted to *Transport Research: Policy and Practice* for publication (Starkey et al., 2019c).

1.4 Phase 2/3 activities

The main activity of Phase 2 will be detailed surveys in two countries, collecting data on transport services and how they have responded to changes in road condition due to road investments and/or due to inadequate maintenance. During Phase 1, three countries had been selected for possible survey work. The three ReCAP countries that appeared to have both suitable 'before' datasets and institutional enthusiasm for this research were Ghana, Nepal and Tanzania. It had been agreed that there would be rapid appraisal visits to potential research sites in these three countries, prior to selecting the final two countries and preparing the necessary research instruments.

Following country selection, local researchers have been recruited and trained to implement qualitative and quantitative surveys on the selected roads. The implementation, analysis and reporting of these surveys will be the main output of Phase 2.

One completed Phase 2 output has been the preparation and submission of a conference paper (Starkey et al., 2019c). This was prepared for the ReCAP-supported T2 Workshop due to be held in Mozambique in November 2019.

Phase 3 activities largely involve contacting relevant transport services stakeholders including transport services authorities, private transport companies and transport associations. The aim will be to identify with them ways in which transport services could be improved through investments, incentives and/or improved regulatory processes (including self-regulation through associations). It has been agreed that the two phases will not be sequential, but that these discussions will start during Phase 2. Phase 3 outputs will include a final report and the IMPARTS Guidelines (covering lessons from all three phases). There will also be another peer-reviewed journal paper.

2 Initial country visits and findings

2.1 Nepal

Nepal had been short-listed for possible survey work, as there were some reasonable datasets on transport services available, derived from the District Roads Support Programme (DRSP). This was a Swiss-supported project under the Swiss Agency for Development and Cooperation (SDC) that undertook labour-based construction of LVRR with the Department for Local Infrastructure Development and Agricultural Roads (DoLIDAR), which is now known as the Department of Local Infrastructure (DoLI). Available resource documents included two DRSP evaluations with tabulated data on transport services (Stickland, 2009; Starkey et al., 2013).

Nepal was visited by Paul Starkey and Robin Workman in March 2019, and options for possible roads to study were discussed with DoLI. Some of the road options were deemed inappropriate due to special features that made them unrepresentative of other LVRR. For example, the new road from Manthali to Kurkot had been constructed between 2000 and 2007, with datasets available from this time and from

2013. However, the construction of another road and a large bridge had allowed this road to become a national highway and part of the strategic network. While it could have made a fascinating study of traffic growth, it was no longer a LVRR and it would be difficult to distinguish issues relating to the original road, the connecting road and the bridge. Similarly, two other roads were ruled out as one was greatly influenced by a large hydro-electric project, and the other provided access to a new airport. With support from DoLI and District Engineers, members of the IMPARTS team visited two roads that had been identified as being suitable and relevant. They were accompanied by staff of Scott Wilson Nepal who are experienced in conducting rural surveys.

Majhitar-Bhimasthan-Chakmake road

The 35 km Majhitar-Bhimasthan-Chakmake road had been built by labour-based construction between 2002 and 2007. The road passes through hills, close to a river valley. Prior to road construction there were no regular transport services, but some vehicles did drive along the riverbed in the dry season to provide some access. It is now an all-season road, with about 10-12 buses (35-seaters) a day, around 20-25 4x4 pickups and jeeps, and around 12 auto-rickshaws (mainly on the first section of the road). We have historical traffic counts on this road from 2009 and 2013. Since then, the numbers of motorcycles in use have increased greatly. There is some ongoing maintenance provided by the local municipalities, generally in terms of repairing damaged areas on an ad-hoc basis, but with no planned routine maintenance. Engineering issues include some remnants of Otta Seal (a low volume bituminous sealing technology), the durability of the original stone soling and cobble-stones (on slopes and vulnerable sections), and the effectiveness over time of some of the DRSP drainage systems, which included some causeways instead of culverts. One current issue is the significant damage caused by farmers running irrigation channels across the roads and using side drains to irrigate crops, whilst allowing this water to flow onto the road. There is evidence that this practice is causing deterioration of the road surface, especially in the Otta Seal section where the majority of the surface has deteriorated. The road remains open throughout the year, but there are some sections that may require a 4WD or high-clearance vehicle during periods of very high rainfall.

This Majhitar-Bhimasthan-Chakmake road should provide valuable lessons relating to transport services, road construction and road maintenance. It has been selected as one of the survey roads.

Tamaghat–Thuloparcel road

The 21 km Tamaghat–Thuloparcel road was constructed using labour-based technologies in Kavre District between 2005 and 2007. Prior to this there were only trails used for walking and pack animals. The first ten kilometres undulate within a river valley, crossing the Jhiku Khola river at Boharedovan, 9.5 km from Tamaghat. The road then climbs the steep side of a sparsely-populated valley and drops down to the large Sun Kosi river at the small village of Khahareghat, about 17 km from the start of the road. It then rises again up the mountain side to the large village of Thuloparcel. On the first section of the road (in the fertile valley) large numbers of small businesses have been established in addition to the dominant farming economy. There are regular minivan services and many point-to-point services provided by auto-rickshaws. On the next sections of the road, there are many fewer people living around the road. Transport services on these sections are limited to 35-seater bus services (about four a day). Traffic volumes are low, with surprisingly small numbers of motorcycles that are now omnipresent in Nepal. As with the Majhitar-Bhimasthan-Chakmake road, engineering issues include some remnants of an old bituminous surface and the durability of the original stone soling and cobble-stones on slopes and vulnerable sections.

One of the key issues is that now heavy trucks are using the road, carrying bricks from some brick kilns on the first section of the road and rocks from a quarry between Boharedovan and Khahareghat. The stone sections of the road are standing up to this heavy traffic quite well, but the earthen sections are showing rutting and damage, particularly where farmers' irrigation ditches have allowed water to flow on the road. It appears that some residues of the quarry grinders have been used to improve part of the road near the quarry. The road is quite narrow in places making it difficult for the large trucks or buses to pass each other. Little maintenance is evident on the road. Until about four years ago a system of length-workers was operational on the road for routine maintenance, set up during the time of DRSP. However, this has now ceased so there is no planned maintenance. Some spot patching was carried out within the last few months, but this has been the first intervention for four or five years. As a result, the road surface is in fair to poor condition, but remains passable by all vehicles up to 9.5 km. Past this point it is passable during the

monsoon season only with high-clearance or 4WD vehicles, mainly due to the deep ruts caused by the quarry trucks.

We have transport services data on this road from 2013. The road should provide valuable lessons on the development of transport services, road design and maintenance and the problems to transport services caused by heavy vehicles impacting road passability. This road has been selected for detailed surveys.

2.2 Ghana

The Ministry of Roads and Highways in Ghana had welcomed the opportunity to participate in the IMPARTS research and suggested they had several possible datasets that could be used to provide historic data. Paul Starkey and Robin Workman visited Ghana in March 2019 and discussed possible survey roads with staff of the Feeder Road Department. Several datasets were studied. One quite detailed report (Ablin Consult, 2018) comprised some recent socio-economic baseline studies. While there was some transport services information relating to travel patterns and fares, the research framework had been based on sampling 1642 households living around 95 road links. The data had been aggregated for all the proposed project roads and all the proposed control roads. It did not appear possible to obtain data related to specific roads from such a survey. Also, because it has only recently been completed, there would not be sufficient time lapse between this 'before' research and any IMPARTS 'after' research.

A recent completion report for the World-Bank-supported Transport Sector Project was suggested as another source of data (Agyekum, 2018). However, this mainly concerned roads with several thousand vehicles a day, with data analyses based on HDM-4 models. While there had been some investment in feeder roads within the Transport Sector Project, no transport services data was available for these roads.

A third option for data availability was a feeder road project in the Volta Region, supported by the Millennium Challenge Corporation (MCC). Funded through the Ghana Millennium Development Authority (MiDA), this project was designed to improve agricultural marketing through improved feeder roads and link roads, as well as the provision of storage facilities. Most of the investment involved black-topped roads. There was some general MCC project information available and examples of the contracts provided for the bitumen surfacing work. There were also details of more recent maintenance (mainly grass-cutting). However, there was no traffic count data available. The MCC had stopped supporting agriculture and was now investing in the energy sector in Ghana. Staff had changed in the MCC office, but the Ghanaian engineer who had been hired by MCC to oversee the feeder road upgrades was available and provided valuable background information. However, he could not find any traffic count records or details of the transport services.

One of the MCC-supported roads had been studied by a ReCAP transport services project in 2016 (Afukaar et al., 2017). This report contained some transport services information including traffic count data. There were also questions raised as to why such a high standard road had been built, when it was still mainly used by motorcycle taxis. This road, and some other MCC-funded roads in Volta were visited by the IMPARTS team (with an engineer from the Feeder Roads Department). Motorcycles and a few rural taxis are the main transport services on these roads, with minibuses ('tro-tro') only serving them on market days. There would be quite interesting lessons to be learned relating to the transport services, including issues relating to the powerful Ghana Private Road Transport Union (GPRTU) that self-regulates minibuses and taxis.

Such a study could be combined with another interesting case history in the northwest of Ghana identified by Afukaar et al. (2017b). Minibus and taxi transport services between Wechiau and Wa were opting for a poorer road with high transport demand rather than a better road that had been prioritised for maintenance by the road authority, but which passed fewer villages. Information relating to the decision-making processes that led to the prioritisation of the road less travelled could usefully feed into the lessons relating to planning road investments and the provision-preservation-services continuum. However, apart from the Afukaar et al. (2017b) study, there seems to be no known reliable historic data for 'before' and 'after' comparisons.

2.3 Tanzania

Tanzania hosted the 2018 IMPARTS workshop, and the President's Office, Regional Administration and Local Government (PO-RALG), a member of the ReCAP Steering Committee, was enthusiastic about

possible participation of Tanzania in the IMPARTS Phase 2 surveys. The Improving Rural Access in Tanzania (IRAT) programme, with DFID-funding, was designed to improve rural accessibility through a programme of removing bottleneck constraints on the rural road network. In this context, 'bottlenecks' are areas where the road condition is poor enough to restrict traffic movements. The programme started in 2013 and finished in 2018. Interventions were not designed to improve whole lengths of roads, rather just to address particular trouble-spots such as culverts, bridges, slippery slopes and low-lying sections subject to flooding. There is 'before' and 'after' traffic data available relating to these roads, including traffic counts and some tariff information (Cardno, 2017).

Paul Starkey visited Tanzania in June 2019 to review five LVRRs that had received IRAT investment. He was accompanied by two Tanzanian consultants, one of whom had implemented the IRAT traffic counts and surveys. On the way to the first IRAT road, they visited a LVRR that was rehabilitated in 2010-2011 with trial sections funded through an AfCAP1 project (Conlon and Mitchell, 2012). There were 'before' and 'after' traffic counts around the time of construction, and transport services had also been studied subsequently through another AfCAP1 project (Willilo and Starkey, 2012). Therefore, six roads were visited in Tanzania, and the research potential of five 'IRAT' roads and one 'AfCAP' road was assessed. The situations observed are summarised in Table 1.

It became clear that all six roads provided valuable case studies for the IMPARTS project, but selecting any two would greatly restrict the learning possibilities. On each of the LVRRs, most people depended largely on motorcycle taxis. While these roads show few transport services types, some roads nearby them did have greater transport services diversity. The particular circumstances of the roads, and the views of operators and users should yield important lessons for the Phase 2 and 3 reports and the IMPARTS Guidelines. Therefore, the IMPARTS team proposes to survey all six roads, using reduced resources per road. This was agreed, in principle, at a meeting with the ReCAP Deputy Team Leader on 13th June 2019, although it was stressed that no extra funds would be available to enable this. It was recognised that the quantitative data samples collected on each of the six roads in Tanzania would be smaller than those collected in Nepal, but in the circumstances (very few transport services options on the Tanzanian roads), this would not invalidate the surveys, which should provide clear lessons to inform the all-important Guidelines output.

2.4 Country selection

As there were funds available to conduct surveys in only two countries, it was necessary to select from the three countries visited. All three countries had very supportive roads authorities and contained interesting case studies, worthy of research. However, the 'before' datasets were strongest in Nepal (an AsCAP country) and Tanzania (an AfCAP country). The large number of relevant lessons for the IMPARTS Guidelines likely to emerge from the six roads in Tanzania, clinched this difficult decision.

Table 1 Six possible IMPARTS research roads in Tanzania

Road	Investments	Data sets	Present situation	Infrastructure issues	Transport services issues	Planning issues
Talawanda-Bago Road, Bagamoyo District, Pwani Region. 20 km road though rolling countryside. Pineapple farms near Bago. Mainly mixed agriculture but fairly low population density	AfCAP 20 km road rehabilitation in 2010-2011 including several different surface trails (black top, different gravels, engineered earth, geo-cell blocks, stone, parallel concrete strips)	Roughton, RTSi, Amend, Transaid	All season road, quite smooth, most traffic motorcycles. No 3-wheelers, minibuses or buses	Good opportunity to evaluate performance of different surfaces from engineering and users' perspectives. The parallel strips are proud due to design/erosion and so dangerous for the prevailing traffic (motorcycles and bicycles). Proud cross ties would make it very difficult for 3-wheelers	Mainly used by motorcycles and bicycles. How to get 3-wheelers and/or minibuses to operate on road? There had been minibuses after the initial investment but these stopped due to a difficult stone section and low demand. Infrastructure is no longer a limiting factor for minivans or minibuses, but is the transport demand sufficient to get them to start services?	For many people in Talawanda, their preferred destination is not Bago but Chalinze or Mlandizi in the other direction
Chekimaji-Kawaya road, Hai District, Kilimanjaro Region. 20 km road, Hai – Rundugai (market) – Chekimaj - Kawaya. First 15 km on plains with much livestock grazing. Fertile farming area in final 5 km including rice production with fertile soils and quite intensive crop production in continuation of road	2016 IRAT investments of 5 km of embankment and several culverts, to allow motorability on a very difficult section at 'end' of road.	IRAT traffic counts before and after	All season road. First section (non-IRAT) very rough, but with motorcycles, Bajajs, minivans and minibuses operating regularly. Last five km good and smooth but only motorcycle traffic and occasional trucks. Trucks of buyers use road at harvest time (before they arrived via Moshi road). Tourists use road to access hot springs.	Good quality 5 km road section produced allowing access to agricultural lands and markets, but linked with rough roads	Bajaj and minibus/minivan transport services from Hai still stop at Rundugai, just before the new section and do not use the good new part of the road. Minibuses operate from Kawaya but go other way to Moshi. How to get 3-wheelers and/or minivan/minibuses to operate on road? Is there an operator association issue (Kawaya is served by Moshi-based associations, while Rundugai is served by Hai associations)? Could SUMATRA and associations stimulate new services to Kawaya?	For many people in Kawaya, their preferred destination is not Hai, but Moshi, in the other direction.

Road	Investments	Data sets	Present situation	Infrastructure issues	Transport services issues	Planning issues
Magugu - Mahole road, Babati District, Manyara Region. 18 km road Magugu - Gichamedia – Mahole (weekly market) road. Relatively flat agricultural land with sugar cane plantation around kilometres 6-8 and extensive livestock grazing land in final 8 km and beyond	2016 IRAT investments of two culverts and some embankment on short low-lying section c. 9 km from each end to allow all season motorability on a very difficult section that had been impassable in rainy season	IRAT traffic counts before and after	All season road, with good short rehabilitated section across some swampy land, allowing all year access. Rest of the road is very rough, (fine gravel washed away leaving stones) but some new TARURA investments near beginning.	Culverts successfully transformed road into all-season road. Non IRAT road sections very rough and motorcycles prefer to use a local footpath/ motorcycle trail in dry season to avoid rough road sections	Motorcycle tariffs in rainy season reduced by intervention. Road mainly used by motorcycles. Bajaj and minibus/minivan transport services from Magugu to Mahole (the two ends of the road) take an alternative route that is 3 km longer but half is black top and the other half is smoother. How to get 3-wheelers and/or minibuses to operate on road?	Very little transport demand to use the bottle neck section due to an alternative route. Bottleneck removed one limiting factor, but not the roughness that inhibits transport 3- and 4-wheel transport services travel up and down the road.
Chigongwe-Chipanga, Bahi District, Dodoma Region. 32 km road from Chigongwe (Singida Road) to Chipanga (clinic, monthly market). Low-population density, semi-arid area with grazing and some cultivation (sorghum, millet sunflowers).	IRAT 2016-2018 investment in two significant bridges at 10 km and 27 km from start.	IRAT traffic counts before bridges were finished.	Now all-season road. Non-IRAT road sections very rough so discouraging transport services, other than motorcycles. However, there are minibuses serving part of the road 'before' the bridges, particularly the Friday market at Kigwe (5 km from start). On section beyond the new bridges, there are no transport services other than motorcycles.	Good quality bridges but connected by rough roads.	No obvious changes in transport services, except that motorcycles can operate all year round, and ambulances from Chipanga clinic can move on the road all year if required. Chipanga, at the 'end' of the road is served by buses and midi-buses linking with Dodoma by another road. None of these has started operating on the 'project road' over the new bridges. How to get 3-wheelers and/or minibuses and buses to operate on road? Would it be possible for SUMATRA to stimulate transport services by making occasional trips on this road a condition for the route licenses for the Chipanga to Dodoma bus routes? Or asking if the minibuses operating near the Singida road could extend their routes on certain days?	The end of the road is connected by another road, which has bus services; although it their route to Dodoma is slightly longer, it is smoother. Even motorcycles prefer to go non-IRAT route as smoother (both routes take about 1 hour by motorcycle). Buses take 3 hours to Dodoma on the other road.

Road	Investments	Data sets	Present situation	Infrastructure issues	Transport services issues	Planning issues
Mpunguzi-Mwitikira road Dodoma District, Dodoma Region. 19 km road from Mpunguzi (twice monthly market on Iringa Road) to Mwitikira (large village). Flat land with semi-arid cropping (sorghum, millet sunflowers) with many vineyards near Mpunguzi. Livestock grazing. Road continues to further villages	Finished in 2016, IRAT rehabilitated 22 km of road with embankment and culverts across low lying land.	IRAT traffic counts before and after	Now all-season road, although improved section had seldom been impassable for long but was difficult in the rainy season.	The 22 km is a good straight road but is now getting rough as fine parts of gravel have been washed away leaving stones. Motorcycles generally use the slightly smoother edges or travel on motorcycle tracks off the road (in the dry season)	No new transport services have started from Mwitikira. Motorcycles have reduced their tariffs. The existing three bus services to Dodoma starting in villages further up the road continue similar services, but have reduced their tariffs. Mwitikira residents complain passing buses are already overcrowded by the time they reach their village and no minibuses or buses start in their village.	Seems logical investment but producing straight, smooth road increased vehicle speeds leading to many crashes (reported 7 deaths, two in car, 5 on motorcycles) on new rehabilitated road section apparently attributable to high speeds. Rough surface has now reduced speeds and so road appears safer
Metegowa Simba-Ngeregere Road, Morogoro District, Morogoro Region. Approx 35 km road from Metegowa Simba (near Morogoro on Dar es Salaam road) to Ngeregere (market town). Road rises in hilly terrain, from medium density rural population and mixed farming near start decreasing to low density shifting cultivation and finally protected forest (military zone).	2014-2016 IRAT invested in six bottleneck interventions, including one concrete section on a steep hill section, one parallel concrete strips section on a steep hill, a drift, some lined drains and some gravel surfacing.	IRAT traffic counts before and after	All-season road but with some very rough and badly eroded sections making dry-season travel slow and rainy season travel difficult.	While some bottle necks have been removed, the road still has many other bottlenecks of badly eroded sections (failed drainage and culverts). The parallel strips are proud due to design/erosion and so dangerous for the prevailing traffic (motorcycles and bicycles). Proud cross ties would make it very difficult for 3-wheelers	Only motorcycles provide transport services on most of the road. Probably due to relatively low transport demand and difficult road conditions. Would it be possible for SUMATRA to stimulate transport services by making occasional trips on this road a condition for the route licenses for the Ngeregere to Morogoro route?	The population density and transport demand in the final 15 km is very low. As buses and minibuses travel from Ngeregere to Morogoro, it was expected that some would operate on this road as a shorter route. However, the road is too narrow for large buses and the road is much slower than the good Ngeregere to Morogoro route. An intersecting road is being rehabilitated which may affect services and provide alternative routes

3 Preparations for surveys in Tanzania and Nepal

3.1 Questionnaires

Survey instruments have been prepared and are attached in Annex 1. There are three questionnaires, for the users, the operators and for local professionals providing a development perspective. These are similar for both countries, with minor adjustments due to the different vehicle types and cultural issues. For example, motorcycle taxis are extremely important in Tanzania but not in Nepal. The caste system remains relevant for understanding disadvantaged groups in Nepal, but not in Tanzania.

The questionnaires have had ethical clearance by TRL, and no personal, identifiable data will be collected. All respondents will have the objectives of the research explained to them, and they will be asked to sign (or mark) consent forms, with wording in their national languages. To assist this process, information sheets have been prepared in English with copies of the consent forms that participants will sign at the start of interviews. These will be translated into Nepali and Swahili, and copies in these languages will be given to all survey participants. They will be able to keep these copies. All forms start with a consent form that will be signed by the participant and the signed versions will be retained as part of the data collection process.

The data to be collected during the surveys is summarised in Table 2. There will also be focus group discussions appropriate to the particular road situations. These will involve operators and/or groups of users, depending on the issues and the practicalities of arranging meetings.

In Tanzania, the surveys will require research authorisation from the Tanzania Commission for Science and Technology (COSTECH) and a Research and Publication Permit from the Tanzania National Bureau of Statistics. The COSTECH application has required application forms, a detailed research proposal, CVs in the required format, a supporting letter from PO-RALG, the questionnaires and various fees. The application has been made in the names of the Tanzanian Researcher (Hans Mwaipopo) and Paul Starkey. Hans will endeavour to speed up the application, but much depends on when the authorising committee next meet. It had been hoped that the process would be completed in July, but this is now not possible. We are hopeful it will be approved in August, as if it were delayed until September, it would put pressure on the project work plan. Hans has had research applications approved before, and appears confident about approval, but uncertain as to the timing.

3.2 Engineering assessment

Observations will be made on the survey roads to determine key characteristics of the road that could have influenced the development of transport services. This assessment will be undertaken using the following technologies:

- Visual assessment using standard data-collection forms. This will be undertaken by the Engineering Specialist using a drive-through survey.
- Videos of the road will be taken using GPS enabled DashCams, which provide a HD video image of the road, taken from inside a vehicle. In addition to the video, audio is recorded, so the assessor can record particular features as the survey proceeds. Also the speed and GPS track are saved and embedded in the video. Finally, an accelerometer within the DashCam records the X, Y and Z movement of the camera within the vehicle, which can provide an indication of the roughest parts of the road.
- Roughness in the form of IRI will be recorded using the World Bank smartphone app RoadLab. It should be noted that results from this app are unreliable at slow speeds on fair and poor unsurfaced roads, and the app does not record below 15 kph. This will therefore be used as a double check of the visual assessment.
- Interviews will also be undertaken with key technical staff at head office and at local level. Also if available the practitioners who worked on the original DRSP roads will be contacted for comment.

This information will be collated to provide an overview of each road that can be used to provide an insight into the dynamics of how the roads have been used and the related development activities. At present the two roads in Nepal have been assessed but the analysis has not been completed.

3.3 Enumerator training

In Tanzania, the key enumerator, Stanley Soiti has experience in conducting interviews and supervising traffic counts on the IRAT roads. He visited all the roads with Paul Starkey in June 2019 and discussed key issues relating to the IMPARTS study, and undertook some trial questioning of operators and users. In July, John Hine travelled to Tanzania and trained Stanley in the use of the revised questionnaires and the new data sheets. John Hine also held discussions relating to the research with Hans Mwaipopo.

In Nepal, agreement has been made with Scott Wilson Nepal (SWN) to implement the survey in cooperation with the IMPARTS team. SWN has an excellent reputation in Nepal for undertaking research assignments and its Chief Executive has worked with Paul Starkey and Robin Workman on previous assignments. This means SWN researchers and enumerators implementing the surveys will be supported by a local organisation with great experience and a team with diverse skills. In March 2019, Paul Starkey travelled on the survey roads with a senior member of SWN staff who will directly supervise the survey. In July 2019, Paul Starkey and Robin Workman travelled to both roads with the two SWN staff who will be assigned the tasks of interviewing the respondents and supervising the traffic counts. Training was provided and attention was paid to ensuring the ethical compliance and presenting the consent forms for signature. In the presence of Paul Starkey, the SWN researchers piloted the questionnaires on some transport users, operators and people supplying the development perspective. A few minor modifications were made to the questionnaires in light of the experience (with the Tanzania forms also modified appropriately).

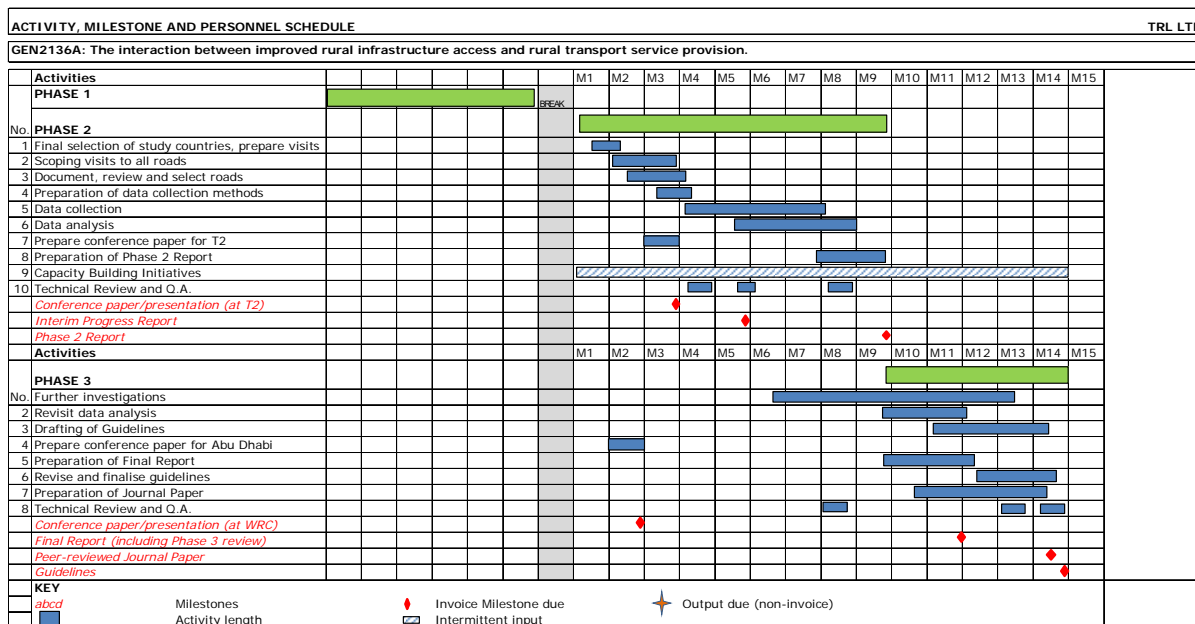
Table 2 Rural road survey data collection for each of the road catchment areas selected

Indicator	Disaggregation	Data collected	Instrument	Sample size Nepal	Sample size Tanzania	Comments
Modal share of passengers and freight	All public transport and freight modes. Passenger, Gender, Age (children), Freight	No. pax per day per mode Estimated accompanied and unaccompanied freight per day per mode	Traffic counts with passenger counts and freight estimates. See Annex 1	12-hour traffic count, two days at strategic points. Options for multiple locations if complicated routings.	12-hour traffic count, two days at strategic points. Options for multiple locations if complicated routings	Where market day surges envisaged, one will be a market day and one will be a non-market day
Passenger trips Passenger fares Passenger opinions and Passenger preferences	All public transport modes, Passengers for: Gender, Age (students, older persons), Occupations (students, farmers, commuters, etc), Disabilities	Typical OD and frequencies Modes used, Fares paid Transport options, Transport preferences, Opinions on different modes, Safety issues, Accessibility issues	User questionnaires with purposive sampling at roadsides and villages to ensure respondent diversity. See Annex 1	100 per road	40 per road	Questionnaires have been developed from RTSi examples and disaggregation categories but larger sample sizes.
Vehicle operating costs and profitability Regulatory and safety	All public transport modes operating on road	VOC components (daily fuel, ownership/hire costs, maintenance, etc). Tariffs charged, typical loads and trips per day, daily income. Regulatory charges etc.	Operator questionnaires building upon RTSi examples (see Annex 1)	If practical, 100% of public transport vehicles operating on the surveyed roads, with a maximum fifteen operators for each transport type and 50 for whole road	If practical, 100% of public transport vehicles operating on the surveyed roads, with a maximum ten operators for each transport type or 20 per road	
Local perceptions of socio-economic impacts of existing transport modes	All public transport modes Education Health	Opinions of local professionals and leaders about advantages and disadvantages of different transport modes	Key informant interviews.	10 per road (including teachers, medical staff, agricultural extensionists, local dignitaries)	6 per road (including teachers, medical staff, agricultural extensionists, local dignitaries)	
Local perceptions of regulatory issues of existing transport modes	All public transport modes	Opinions of local police, enforcers and leaders about regulatory issues among the different transport modes	Key informant interviews.	3 per road	3 per road	Experience suggests there will be few local enforcement officials or people responsible for local regulation

3.4 Work programme

The original work programme as shown in Figure 1 is still valid. The main risk to this progress is gaining the permissions for research study in Tanzania, as discussed in Section 3.1.

Figure 1 Work programme chart



3.5 Updated risk analysis

The risks and assumptions for delivering the project largely remain the same as those outlined in our technical proposal and inception report. They have been updated below:

- There was an initial risk in the selection of participating countries that expectations will be raised by asking countries for information that will lead to their selection. The team made it very clear on the scoping visits and during subsequent discussions that only two countries would be selected, although there was a possibility at one stage that three could have been included.
- There was a risk that by the end of Phase 1 it would not be possible to identify suitable countries for Phase 2 that had appropriate projects and relevant data. The process of country selection has however identified three appropriate countries, of which two have been selected.
- Another risk identified in Phase 1 was a possible lack of motivation of AfCAP and AsCAP road sector stakeholders to actively engage with this project in terms of document provision, research site selection and participation in the workshops. This risk has however proven to be unfounded as the cooperation received in each country has been very good and the team are satisfied that all available data has been provided.
- There was a risk that no agreement would be reached on a way forward for the project at the end of Phase 2. This was clearly not the case. The consultants were only able to propose to research two countries with the resources provided, and although ReCAP did try and include the third country there were insufficient funds available.
- Of the three phases of the project, Phase 2 was seen as the most susceptible to risks. Possible risks identified include delay in data collection or provision, especially where undertaken by local stakeholders; and unexpected in-country events influencing the research. So far the data collection is on track, but there is a potential risk with obtaining permissions in Tanzania. There is an involved process to gain approval for any research surveys in Tanzania, and the committee on research surveys only meets once every 2 months. The team have initiated the process for approval through the ReCAP counterpart, but there is still a risk that this will delay data collection in Tanzania.

- A risk was identified that the project would not be delivered on time and to budget. Continuous monitoring has minimised this risk and potential problems will be highlighted to ReCAP as early as possible so that alternative solutions can be put in place.
- There may be constraints related to production of technical papers for a peer reviewed journal and international conferences. It is expected that such constraints can be overcome at the time through liaison with the organisers.

4 Conclusions

The TRL team is pleased to conclude this progress statement with the confirmation that Phase 2 activities have been proceeding according to schedule. The team received exemplary cooperation from the road authorities in Ghana, Nepal and Tanzania to allow the initial scoping visits to potential roads to be undertaken in a timely way. In all three countries, there were LVRRs that could provide valuable survey opportunities and lessons for the IMPARTS Guidelines. Of the datasets available for 'before' scenarios, those of Nepal and Tanzania were better, and so with reluctance, the team has had to give up its aspirations to undertake Phase 2 survey work in Ghana. This reinforces one clear recommendation for the Guidelines (already noted during the Phase 1 inter-regional workshop) in that it is important that Road Authorities collect and retain records relating to transport services and traffic counts. If practical, such records should be retained within Maintenance Management Systems, so that historical information on road investments, traffic counts and transport services indicators can always be viewed when looking up particular roads in these databases. In Ghana, Nepal and Tanzania, as well as other ReCAP countries, road-related information concerning transport services appears to have been collected (and also reported) within the context of donor-supported investments. It is important that such reports are integrated into the databases of the roads authorities to retain the lessons learned and to inform future policy. The aid agencies supporting the road investments should also prioritise this important process of embedment.

The team has developed appropriate survey instruments (see Annex 1) for the Phase 2 surveys. These have been tested in collaboration with research partners and potential enumerators in Tanzania and Nepal. Appropriate training has been provided, including ensuring ethical compliance and obtaining written consent from prospective interviewees. In both Nepal and Tanzania, the research collaborators are ready to start the survey work in August, although the survey in Tanzania requires government approval. This has been applied for, but it is not yet clear when the approval will be granted. This has been identified as the main risk to Phase 2 timing, which is otherwise on schedule.

While the survey work in Nepal will be conducted on two LVRRs as envisaged in the TOR and Project Proposal, in Tanzania, it has been proposed to survey six different roads, albeit with smaller sample sizes. This will be undertaken using the existing budget and resources. Larger surveys on just two roads would not provide the same number of examples of interesting roads and transport-services interactions. The survey evidence gathered from the six roads will provide well-researched information to inform the IMPARTS Guidelines. Moreover, through discussions with transport services operators plying nearby roads, Phase 3 data can be collected to find out exactly what is preventing these services from operating on the survey roads, and how such operators might be incentivised to operate on the currently neglected roads. This important synergy between the Phase 2 and Phase 3 tasks is a key reason to survey the six roads in Tanzania.

The initial Phase 3 work on ways of improving transport services will concentrate on the two survey roads in Nepal and the six survey roads in Tanzania. Discussions will be held with on-road transport services operators and transport service operators on nearby roads that are better served. There will also be meetings with the regulatory authorities and other relevant stakeholders such as cartel leaders. The aim will be to identify possible solutions to improving transport services on the survey roads, and the implications and costs of such improvements. This will help to identify possible initiatives and inform future Phase 3 actions.

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Annex 1 Survey instruments

Imparts surveys Nepal on Tamaghat–Thuloparcel Road (Kavre) and Majhitar-Bhimasthan-Chakmake Road (Sindhuli)

Instrument	Notes and sample size Kavre	Notes and sample size Sindhuli	Comments
Traffic counts with passenger counts and freight estimates	<p>12-hour traffic counts over two days at 3 locations Kashote (km 4.5) busy Could be the identified bus shelter. Boharedovan (km 9.5), with 3 separate sets of recording sheets (see comments)</p> <p>1) All traffic crossing bridge on project road (ie, most of the traffic) 2) Traffic finishing/starting at Boharedovan and going towards KTM (ie, the minivans and perhaps some school buses). This will be a small count. 3) Traffic crossing bridge but using the small road to the right (where the jeep had come from). This will be a very small count)</p>	<p>12-hour traffic count, two days at strategic points.</p> <p>Station 1: Some suitable location in the first five km of the road (could be at the ‘bus shelter’ near where we helped autorickshaw and photographed the erosion) .</p> <p>Station 2: Bhimasthan: could be by the shop and tea-shop/bar where we stopped and talked with the bus driver)</p>	<p>The Boharedovan count will not be complicated and will not need extra staff. The staff can be based at the store by the ‘minivan terminal’. Nearly all traffic will be ‘through traffic’ on the project road (and will be lot less than the traffic at Kashote). However, the enumerator should keep two more sets of forms, one for the minivans and other vehicles that finish and start journeys at Boharedovan, and one set for the very small amount of traffic using the small road rising up the valley to the right of the bridge (where we walked up a little on our first visit and there had been a small landside)</p>
User questionnaires with purposive sampling at roadsides and villages to ensure respondent diversity.	<p>100 users of which 50% women (if practicable) and at least five people with ‘disabilities’ and five elderly people. 40% should be between Kashote and Boharedovan, 20% from between Boharedovan and the Khahareghat bridge (lunch stop with the bridge) and 40% should from between the Khahareghat bridge and Thuloparcel</p>	<p>100 users of which 50% women (if practicable) and at least five people with ‘disabilities’ and five elderly people 40% should be between Majhitar junction (not first 3 km) and Bhimasthan, 40% should be in and around Bhimasthan, and 20% should be between Bhimasthan and Chakmake</p>	
Operator questionnaires	<p>There will not be many operators on these roads, and so, if practical, 100% of public transport vehicles operating on the surveyed roads (with a maximum fifteen operators for each transport type). So if there are 20 minivans and 20 autorickshaws the maximum would be fifteen of each). If there are 10 buses, we should interview all operators</p>	<p>There will not be many operators on these roads, and so, if practical, 100% of public transport vehicles operating on the surveyed roads (with a maximum fifteen operators for each transport type). So if there are 20 buses, 20 jeeps/pickups and 20 autorickshaws the maximum would be fifteen of each).</p>	
Development ‘key informant interviews’.	<p>10 including teachers, medical staff, agricultural extensionists, local dignitaries)</p>	<p>10 including teachers, medical staff, agricultural extensionists, local dignitaries)</p>	
Enterprise survey	<p>All enterprises along road (excluding initial peri-urban section of 1-2km)</p>	<p>All enterprises along road (excluding initial peri-urban section of 1-3km)</p>	<p>We have identified the start of the ‘rural section’ of the roads</p>

USERS PERSPECTIVE QUESTIONNAIRE (NEPAL)

(This questionnaire does not collect or record personal data as defined in the 2018 European GDPR legislation)

Questionnaire No. _____ Road Name _____ Date of Interview: _____ Interviewer: _____

Location (eg, village name) _____ Geo Coordinates: (if GPS) _____

Consent form (local language version will be supplied)

- 1 I confirm that I have read (or heard) the information provided in the information sheet dated 12 September 2019 for the above study, I have had the opportunity to consider the information, ask questions and I have had any questions answered satisfactorily.
- 2 I understand that my participation is voluntary and that I am free to withdraw at any time without giving any reason. I understand that if I decide to withdraw, any data that I have provided up to that point will be or included, if I agree to this.
- 3 I agree to take part in this research project.
- 4 I understand that my data will be anonymous and that my anonymised data may be used in future research.

Participant's signature or mark.

Date

Researcher's signature

Interviewee Gender: Female Male Occupation: _____ Caste: Brahmin/Chhetri Janjati Dalit
Other _____

Age range: 16-17 , 18-25 , 26-35 , 36-45 , 46-55 , 56-65 , over 65

Other information if relevant, eg, disability affecting travel (optional) _____

Preamble to help with further respondent classification and to determine which transport modes will be asked about.

Which transport services did you use during last year ON THIS ROAD (the road being surveyed) and for what purposes and how often?

U1-1. Modes of transport	Main Purpose	Average Frequency/ the person travelled each Month
<u>1st Mode</u> 3-wheeler/autorickshaw <input type="checkbox"/> Car-taxi <input type="checkbox"/> Minivan (c.6/8 seats) <input type="checkbox"/> Minibus/Hiace (c.16 seats) <input type="checkbox"/> Jeep, pickup or 4-wheel dr. utility <input type="checkbox"/> Truck <input type="checkbox"/> 35 seater bus <input type="checkbox"/> Paid motorcycle <input type="checkbox"/>	work <input type="checkbox"/> health <input type="checkbox"/> school/college <input type="checkbox"/> sell produce <input type="checkbox"/> Local market <input type="checkbox"/> town/shopping/bank <input type="checkbox"/> farming <input type="checkbox"/> friends/relations <input type="checkbox"/> gov. offices <input type="checkbox"/> religious meeting <input type="checkbox"/> funeral/ wedding <input type="checkbox"/> business <input type="checkbox"/> other <input type="checkbox"/> _____	

2nd Mode 3-wheeler/autorickshaw <input type="checkbox"/> Car-taxi <input type="checkbox"/> Minivan (c.6/8 seats) <input type="checkbox"/> Minibus/Hiace (c.16 seats) <input type="checkbox"/> Jeep, pickup or 4-wheel dr. utility <input type="checkbox"/> Truck <input type="checkbox"/> 35 seater bus <input type="checkbox"/> Paid motorcycle <input type="checkbox"/>	work <input type="checkbox"/> health <input type="checkbox"/> school/college <input type="checkbox"/> sell produce <input type="checkbox"/> Local market <input type="checkbox"/> town/shopping/bank <input type="checkbox"/> farming <input type="checkbox"/> friends/relations <input type="checkbox"/> gov. offices <input type="checkbox"/> religious meeting <input type="checkbox"/> funeral/ wedding <input type="checkbox"/> business <input type="checkbox"/> other <input type="checkbox"/> _____	Average frequency the person travelled each month:
3rd Mode 3-wheeler/autorickshaw <input type="checkbox"/> Car-taxi <input type="checkbox"/> Minivan (c.6/8 seats) <input type="checkbox"/> Minibus/Hiace (c.16 seats) <input type="checkbox"/> Jeep, pickup or 4-wheel dr. utility <input type="checkbox"/> Truck <input type="checkbox"/> 35 seater bus <input type="checkbox"/> Paid motorcycle <input type="checkbox"/>	work <input type="checkbox"/> health <input type="checkbox"/> school/college <input type="checkbox"/> sell produce <input type="checkbox"/> Local market <input type="checkbox"/> town/shopping/bank <input type="checkbox"/> farming <input type="checkbox"/> friends/relations <input type="checkbox"/> gov. offices <input type="checkbox"/> religious meeting <input type="checkbox"/> funeral/ wedding <input type="checkbox"/> business <input type="checkbox"/> other <input type="checkbox"/> _____	Average frequency the person travelled each month:

U1. 2 Which vehicles are best for following road conditions?

U1.2 a When road is smooth and dry?

3-wheeler/autorickshaw Car-taxi Minivan (c.6/8 seats) Minibus/Hiace (c.16 seats) Jeep/Pickup/utility 4WD Truck
35 seater bus Paid motorcycle

U1.2 b. When road is rough and dry?

3-wheeler/autorickshaw Car-taxi Minivan (c.6/8 seats) Minibus/Hiace (c.16 seats) Jeep/Pickup/utility 4WD Truck
35 seater bus Paid motorcycle

U1. 2 c. When road is Wet or Muddy?

3-wheeler/autorickshaw Car-taxi Minivan (c.6/8 seats) Minibus/Hiace (c.16 seats) Jeep/Pickup/utility 4WD Truck
35 seater bus Paid motorcycle

U1-3. In the past five years, has the total number of vehicles operating each day along the road changed?

	Big decrease	Small decrease	No change	Small increase	Big increase
Autorickshaws					
Car-taxi					
Minivans (6-8 seats)					
Minibus/Hiace (c.16 seats)					
35 seater bus					
Jeep/Pick-Up or 4-Wheel Drive					
Truck					
Paid motorcycle					

U1-4. . In the past 5 years, has the total number of passengers carried each day by all the vehicles operating along the road changed?

	Big decrease	Small decrease	No change	Small increase	Big increase
Autorickshaws					
Car-taxi					
Minivans (6-8 seats)					
Minibus/Hiace (c.16 seats)					
35 seater bus					
Jeep/Pick-Up or 4-Wheel Drive					
Truck					
Paid motorcycle					

U1-5. In the past one year, has the total number of vehicles operating each day along the road changed?

	Big decrease	Small decrease	No change	Small increase	Big increase
Autorickshaws					
Car-taxi					
Minivans (6-8 seats)					
Minibus/Hiace (c.16 seats)					
35 seater bus					
Jeep/Pick-Up or 4-Wheel Drive					
Truck					
Paid motorcycle					

U1-6. In the past one year, has the total number of passengers carried each day by all the vehicles operating along the road changed?

	Big decrease	Small decrease	No change	Small increase	Big increase
Autorickshaws					
Car-taxi					
Minivans (6-8 seats)					
Minibus/Hiace (c.16 seats)					
35 seater bus					
Jeep/Pick-Up or 4-Wheel Drive					
Truck					
Paid motorcycle					

U1-7. Please provide the required information below for each mode of transport you have used ON THIS ROAD

(Please record at least 2 different origins and destinations if possible)

	Origins	Destinations	Dist. (km) <small>Note 1</small>	Frequency		Passengers fares		Journey time-dry (min)	Journey time-wet (min)	Accompanied freight (20-50 kg)		Unaccompanied freight (c.200kg)	
				Dry Season Per month	Wet Season Per month	Dry Season	Wet Season,			Weight kg ^{Note}	Tariff	Weight kg	Tariff
Autorickshaw													
Car -Taxi													
Minivan (6-8 seats)													
Minibus / Hiace (16 seats)													
Pick-Up or 4-Wheel Dr. utility													

1. Actual distances can be calculated from origin and destination, so leave blank if unsure of accuracy of information .

2. Make sure a specific or estimated weight is entered. Where cost is per container (eg basket of produce) estimate a typical weight of this

U1-7 (Please record at least 2 different origins and destinations if possible)

	Origins	Destinations	Dist. (km) <i>Note 1</i>	Frequency		Passengers fares		Journey time-dry (min)	Journey time -wet (min)	Accompanied freight (20-50 kg)		Unaccompanied freight (c.200kg)	
				Dry Season Per month	Wet Season Per month	Dry Season Normal	Wet Season, Normal			Weight kg ^{<i>Note 2</i>}	Tariff	Weight kg	Tariff
Truck													
35-seater bus													
Paid motorcycle													
Other													

Note.

1. Actual distances can be calculated from origin and destination, so leave blank if unsure of accuracy of information.
2. Make sure a specific or estimated weight is entered. Where cost is per container (eg basket of produce) estimate a typical weight of this

Part 2. Satisfaction for each type of transport services regularly used (maximum 3 per person):

Mode 1 being rated here: Autorickshaw Car-taxi Minivan 35-seater bus Jeep/Pickup/utility 4x4 Hiace/Minibus Truck

No.	Paid motorcycle <input type="checkbox"/> If other type of transport, state here: _____ How satisfied are you with . . .	Very unsatisfied	Unsatisfied	No opinion	Satisfied	Very satisfied
U2-1	The present passenger's fares for this mode of transport on this road?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
U2-2	The journey times for this mode of transport on this road?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
U2-3	The service frequency for this mode of transport on this road?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
U2-4	The present timetable or predictability of mode of transport? <i>(Not for m/c)</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
U2-5	The present chances of getting onto the first vehicle?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
U2-6	The availability of small freight services <i>(20-50kg accompanied goods)?</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
U2-7	The present small freight charges for this mode?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
U2-9	The availability of medium freight services (200kg) for this mode?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
U2-10	The present medium freight charges (200 kg) for this mode?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
U2-12	The courier services provided by this mode of transport?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
U2-13	The level of safety of this mode of transport on this road? <i>(safety relates to accident involving injury to people and damage to vehicle)</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
U2-14	The level of security of this mode of transport on this road? <i>(risk of theft, assault or harassment)</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
U2-15	The level of comfort in terms of seat space? <i>(Not for m/c)</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
U2-16	The level of comfort in terms of seat type/conditions? <i>Note. Seat type/conditions include metal, wooden, plastic and condition</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
U2-17	The level of comfort in terms of baggage around passengers? <i>(Not m/c)</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
U2-18	The level of comfort in terms of road roughness and bumpiness?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
U2-19	The level of comfort in terms of environment (noise levels/dust/heat)?					
U2-20	The present convenience of access for the elderly and physically challenged people, <i>eg, those using mobility aid such as sticks, crutches, frame or wheelchair?</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
U2-21	The facilities provided at the transport stops and pickup points along this roadside? <i>(shelter/seats)</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Part 2. Satisfaction for each type of transport services regularly used (maximum 3 per person):

Mode 2 being rated here: Autorickshaw Car-taxi Minivan 35-seater bus Jeep/Pickup/utility 4x4 Hiace/Minibus Truck

No.	Paid motorcycle <input type="checkbox"/> If other type of transport, state here: _____ How satisfied are you with . . .	Very unsatisfied	Unsatisfied	No opinion	Satisfied	Very satisfied
U2-1	The present passenger's fares for this mode of transport on this road?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
U2-2	The journey times for this mode of transport on this road?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
U2-3	The service frequency for this mode of transport on this road?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
U2-4	The present timetable or predictability of mode of transport? <i>(Not for m/c)</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
U2-5	The present chances of getting onto the first vehicle?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
U2-6	The availability of small freight services <i>(20-50kg accompanied goods)?</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
U2-7	The present small freight charges for this mode?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
U2-9	The availability of medium freight services (200kg) for this mode?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
U2-10	The present medium freight charges (200 kg) for this mode?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
U2-12	The courier services provided by this mode of transport?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
U2-13	The level of safety of this mode of transport on this road? <i>(safety relates to accident involving injury to people and damage to vehicle)</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
U2-14	The level of security of this mode of transport on this road? <i>(risk of theft, assault or harassment)</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
U2-15	The level of comfort in terms of seat space? <i>(Not for m/c)</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
U2-16	The level of comfort in terms of seat type/conditions? <i>Note. Seat type/conditions include metal, wooden, plastic and condition</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
U2-17	The level of comfort in terms of baggage around passengers? <i>(Not m/c)</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
U2-18	The level of comfort in terms of road roughness and bumpiness?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
U2-19	The level of comfort in terms of environment (noise levels/dust/heat)?					
U2-20	The present convenience of access for the elderly and physically challenged people, <i>eg, those using mobility aid such as sticks, crutches, frame or wheelchair?</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
U2-21	The facilities provided at the transport stops and pickup points along this roadside? <i>(shelter/seats)</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Part 2. Satisfaction for each type of transport services regularly used (maximum 3 per person):

Mode 3 being rated here: Autorickshaw Car-taxi Minivan 35-seater bus Jeep/Pickup/utility 4x4 Hiace/Minibus Truck

No.	Paid motorcycle <input type="checkbox"/> If other type of transport, state here: _____ How satisfied are you with . . .	Very unsatisfied	Unsatisfied	No opinion	Satisfied	Very satisfied
U2-1	The present passenger's fares for this mode of transport on this road?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
U2-2	The journey times for this mode of transport on this road?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
U2-3	The service frequency for this mode of transport on this road?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
U2-4	The present timetable or predictability of mode of transport? <i>(Not for m/c)</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
U2-5	The present chances of getting onto the first vehicle?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
U2-6	The availability of small freight services <i>(20-50kg accompanied goods)?</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
U2-7	The present small freight charges for this mode?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
U2-9	The availability of medium freight services (200kg) for this mode?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
U2-10	The present medium freight charges (200 kg) for this mode?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
U2-12	The courier services provided by this mode of transport?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
U2-13	The level of safety of this mode of transport on this road? <i>(safety relates to accident involving injury to people and damage to vehicle)</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
U2-14	The level of security of this mode of transport on this road? <i>(risk of theft, assault or harassment)</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
U2-15	The level of comfort in terms of seat space? <i>(Not for m/c)</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
U2-16	The level of comfort in terms of seat type/conditions? <i>Note. Seat type/conditions include metal, wooden, plastic and condition</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
U2-17	The level of comfort in terms of baggage around passengers? <i>(Not m/c)</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
U2-18	The level of comfort in terms of road roughness and bumpiness?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
U2-19	The level of comfort in terms of environment (noise levels/dust/heat)?					
U2-20	The present convenience of access for the elderly and physically challenged people, <i>eg, those using mobility aid such as sticks, crutches, frame or wheelchair?</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
U2-21	The facilities provided at the transport stops and pickup points along this roadside? <i>(shelter/seats)</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

IMPARTS VEHICLE OPERATORS' QUESTIONNAIRE (NEPAL)

(For operators of all types of vehicles providing public transport services on study road.

(This questionnaire does not collect or record personal data as defined in the 2018 European GDPR legislation)

Questionnaire No. _____ Interviewer: _____ Date: _____
 Location (eg, village name) _____
 Road: _____ Coordinates: _____ (if GPS available)

Consent form wording (local language version will be supplied)

- 1 I confirm that I have read (or heard) the information provided in the information sheet dated 12 September 2019 for the above study, I have had the opportunity to consider the information, ask questions and I have had any questions answered satisfactorily.
- 2 I understand that my participation is voluntary and that I am free to withdraw at any time without giving any reason. I understand that if I decide to withdraw, any data that I have provided up to that point will be or included, if I agree to this.
- 3 I agree to take part in this research project.
- 4 I understand that my data will be anonymous and that my anonymised data may be used in future research.

Participant's signature or mark.

Date

Researcher's signature

Section A: Driver's Information

Age range: 16-17 , 18-25 , 26-35 , 36-45 , 46-55 , 56-65 , over 65

Education: _____ Gender: Male Female

Caste: Brahmin/Chhetri Janjati Dalit Other _____

How long have you been driving this type of vehicle? _____ years Do you have a driving license?
 Yes No

Section B: Vehicle information and ownership

1 **Vehicle type:** 3-wheeler/autorickshaw Car taxi Minivan (c.6 seats) Minibus (c.16 seats)
 Jeep/Pickup/Utility 35-seater bus Truck Motorcycle :

2 **Make of vehicle** Model of vehicle.....
Engine capacitycc/litres **Year of manufacture**..... **Vehicle Registration No**.....

3 **What fuel do you use?** Petrol Diesel CNG 2-stroke petrol

4 **How many seats are there?**

5 **Is there a legal maximum load?** Passengers Tonnes

6a **Is the vehicle owned outright by the driver?** Yes No
 (If Yes) Year of purchase..... Total purchase cost NPR
 Estimated current value NPR

6b **Is the vehicle owned on hire purchase, or financed by a loan, by the driver?** Yes No
 (If Yes) Year of start of purchase..... Deposit paid: NPR
 Each instalment NPR..... Number of instalments
 Estimated current value NPR

6c Is the vehicle owned by another person and hired by the driver? Yes No
 (If Yes) What is the hire cost: NPR. per day / per week / per month
 Estimated current value NPR

Who pays the costs of maintenance and repairs? Driver Owner Shared
 Other arrangements?.....

6d Is the vehicle owned by another person that the driver works for? Yes No
 (If Yes) How are revenues split between owner and driver?
 Profits go to Owner and driver is paid NPR per day / per week / per month
 or Other arrangement explain

Estimated current value NPR

Section C: Vehicle operating patterns

- 7 Does the vehicle usually operate on fixed route?** Y / N. If so what is the route?
 From..... To..... Distancekm.
 Normal journey timemins
- 8 What is the normal passenger fare for this (fixed route) journey, when sharing?** NPR
- What is the fare for children on a seat? NPR. (sharing);
 What is the fare for someone with disabilities? NPR..... (sharing);
 What is the charge for carrying a 20 kg sack of produce? NPR (with customers);
 a 50 kg sack of produce? NPR.(with customers);
 What is the tariff if someone **hires the whole vehicle for this single journey?** NPR.....
- 9 On average, how many paying *single* trips do you make per day?** per day
(a return trip = 2 single trips)
On average, how many paying *single* trips do you make per week?per week
- 10 What was the *last* paying single trip you had?**
 From..... To..... Distance km.
 Journey time.....mins Total fare/freight revenue NPR..... No of passengers..... Kilograms of
 freight carried (approx.)kg
- 11 Over the last month what was the average gross revenue per working day?**
(gross revenue is total of all fares and all freight tariffs, with no deductions for fuel, etc)
What is your average gross revenue each month? NPR.
- 12 What would you estimate your monthly net income/profit from your transport operations?** NPR.....
(this is gross revenue minus fuel and other costs)
- 13 On average, what distance do you travel each day and each week?** km/day km/week
- 14 On average, how much fuel do you use in your operations?** (Record cost or volume answer the
 interviewee is most comfortable with)
 NPR..... per day; litres/day
 NPR. per week; litres/week
- 15a Please estimate your annual services, engine maintenance and repair costs when operating on this road:**
 NPR. per year
- 15b Please estimate what you think your annual services, engine maintenance and repair costs would be if
 you only operated on smooth roads?** NPR per year
- 15c How many tyres do you replace each year?**
How many of these replacements would be due to the road condition?
- 15d What is the cost of a front tyre? NPR ; What is the cost of a back tyre? NPR.....**

- 16** What percentage of vehicle revenue comes from passengers, freight or from driver/owner's trading on own account?
Percentage of revenue from passengers%; goods%; own business/trading.....%
- 17** Do you have assistants or conductors? Number How are they paid?
NPR..... total per week
(or percentage of gross profit.....%; or other system))
- 18a.** Do you have vehicle insurance? Yes No If so, NPR per year
- 18b.** Do you have annual vehicle tests? Yes No If so, NPR..... per year
- 18c.** Do you pay annual registration tax for your vehicle? Yes No If so, NPR per year
- 18d.** Do you pay for a government issued route/or commercial operating license for your vehicle? Yes No If so, NPR. per year
- 19** Are you a member of a driver association? Yes No
If yes, how much does this cost? NPR. per month
Does your association do any of the follow? (tick all that apply)
- | | | | |
|--|--|--|--|
| Control the order of departure at starting point/terminals | Yes <input type="checkbox"/> No <input type="checkbox"/> | Provide support in case of illness | Yes <input type="checkbox"/> No <input type="checkbox"/> |
| Control fares | Yes <input type="checkbox"/> No <input type="checkbox"/> | Provide support in the case of a crash | Yes <input type="checkbox"/> No <input type="checkbox"/> |
| Control who can operate on different routes | Yes <input type="checkbox"/> No <input type="checkbox"/> | Provide support in the case of police action | Yes <input type="checkbox"/> No <input type="checkbox"/> |
| Control the time between departures | Yes <input type="checkbox"/> No <input type="checkbox"/> | Negotiate with officials in the nearby town | Yes <input type="checkbox"/> No <input type="checkbox"/> |
- 20** During the past year, has the number of your type of public transport vehicles operating each day along your routes changed?
- | | | | | | | | | | |
|--------------|--------------------------|----------------|--------------------------|-----------|--------------------------|----------------|--------------------------|--------------|--------------------------|
| Big decrease | <input type="checkbox"/> | Small decrease | <input type="checkbox"/> | No change | <input type="checkbox"/> | Small increase | <input type="checkbox"/> | Big increase | <input type="checkbox"/> |
|--------------|--------------------------|----------------|--------------------------|-----------|--------------------------|----------------|--------------------------|--------------|--------------------------|
- 21** During the past year, has the number of daily trips that you and your type of vehicle operating along your routes changed?
- | | | | | | | | | | |
|--------------|--------------------------|----------------|--------------------------|-----------|--------------------------|----------------|--------------------------|--------------|--------------------------|
| Big decrease | <input type="checkbox"/> | Small decrease | <input type="checkbox"/> | No change | <input type="checkbox"/> | Small increase | <input type="checkbox"/> | Big increase | <input type="checkbox"/> |
|--------------|--------------------------|----------------|--------------------------|-----------|--------------------------|----------------|--------------------------|--------------|--------------------------|
- 22** During the past year, has the total number of passengers carried each day by all public transport vehicles operating along the road changed
- | | | | | | | | | | |
|--------------|--------------------------|----------------|--------------------------|-----------|--------------------------|----------------|--------------------------|--------------|--------------------------|
| Big decrease | <input type="checkbox"/> | Small decrease | <input type="checkbox"/> | No change | <input type="checkbox"/> | Small increase | <input type="checkbox"/> | Big increase | <input type="checkbox"/> |
|--------------|--------------------------|----------------|--------------------------|-----------|--------------------------|----------------|--------------------------|--------------|--------------------------|
- 23** What has been the main causes of the changes? (Tick all important changes)
- | | | | |
|--------------------------------------|--|--------------------------------------|--|
| Road condition improving | <input type="checkbox"/> Yes <input type="checkbox"/> No | Road condition deteriorating | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| More people travelling | <input type="checkbox"/> Yes <input type="checkbox"/> No | Fewer People travelling | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| More use of personal motorcycles | <input type="checkbox"/> Yes <input type="checkbox"/> No | Less use of personal motorcycles | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| More use of three-wheelers | <input type="checkbox"/> Yes <input type="checkbox"/> No | Less use of three-wheelers | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| More use of jeeps/pick-ups/utilities | <input type="checkbox"/> Yes <input type="checkbox"/> No | Less use of jeeps/pick-ups/utilities | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| More use of minivans/minibuses | <input type="checkbox"/> Yes <input type="checkbox"/> No | Less use of minivans/minibuses | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| More use of 35-seater buses | <input type="checkbox"/> Yes <input type="checkbox"/> No | Less use of 35-seater buses | <input type="checkbox"/> Yes <input type="checkbox"/> No |

24 Do you get stopped by police or other officials? Yes No
(If Yes) How often? times per month. Or times per year

If yes, what are the main reasons? (tick all that apply)

- | | |
|---|--|
| <input type="checkbox"/> No reason at all | <input type="checkbox"/> Stopping in wrong place |
| <input type="checkbox"/> Overloading: too many people | <input type="checkbox"/> Overloading: too big a load |
| <input type="checkbox"/> Faulty lights | <input type="checkbox"/> Speeding |
| <input type="checkbox"/> Traffic signs | <input type="checkbox"/> Licence/ tax and insurance |
| <input type="checkbox"/> Wrong equipment | <input type="checkbox"/> other reasons..... |

25 How much do you have to pay in fines or other costs to officials/police per month?






NPR. per month

26 What are the main problems you face when operating on your normal route(s)?

Tick all that are important.

- | | |
|--|---|
| <input type="checkbox"/> Road condition | <input type="checkbox"/> Too much competition from other types of vehicle on your route(s) |
| <input type="checkbox"/> Declining market | <input type="checkbox"/> Too much competition from your type of vehicle on your route(s) |
| <input type="checkbox"/> Increasing ownership of motorcycles | <input type="checkbox"/> Other (specify): _____ |
| <input type="checkbox"/> Harassment from police/officials | |

27 What aspects of the condition of this road affect you and your transport business

No.		Very serious 	Serious 	No opinion 	Minor issue 	Never a problem 
27-1	Road roughness	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
27-2	Road slippery when wet	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
27-3	Road too muddy	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
27-4	Risk of getting stuck	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
27-5	Risk of damage to vehicle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
27-6	Travelling is uncomfortable for passengers	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
27-7	Travel times are high	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
27-8	High operating costs due to road	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
27-9	Road is very dusty in dry season	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
27-10	Other (state) _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

28. For Motorcycles only.

[NB: These questions are only if you can find people accepting payments for travel by motorcycle]

Do you often go “off road” ie. Using footpaths or tracks?






a) **On footpaths or trails to reach villages and houses that are not close to the road?**

[eg, over 500m] Yes No

b) **On a side track that is smoother than the road?** Yes No






c) **As short cut rather than using the road?** Yes No

29. If you use motorcycle trails to go from the road to villages (as 28a), please answer the following:

No.		Very unimportant 	Not important 	No opinion 	Important 	Very important 
29a-1	How important are these for your transport business (income)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	How important are these for carrying passengers from off-road villagers to and/or from:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
29a-2	Markets and shops	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
29a-3	Clinics	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
29a-4	Schools	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
29a-5	How important would it be to your transport business (income) if other villages could be connected in this way?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

29a-6 Please explain _____

29b If there are motorcycle side tracks close to the road that are smoother than the road (as 28b), please answer the following:

No.		Very unimportant 	Not important 	No opinion 	Important 	Very important 
29b-1	How important are these for assisting your travel by motorcycles at the moment?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
29b-2	How important would it be to you to increase or improve the side tracks?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

D29b-3 Please explain _____

29c If there are important short cuts that you use on your motorcycle (as 28c), please answer the following for the most important one

29c-1 Which short cut: From To

29c-2 How long is this km (or metres)

29c-3 How much time do you save? minutes

29c-4 When do you take the short cut, rather than using the road?






All year round

From period (give months) to

Only when the short cut is passable

29c-5 When it is impassable, what causes this? _____

29c-6 Is the road affected in the same way? Please explain? _____

		Very unimportant 	Not important 	No opinion 	Important 	Very important 
29c-7	How important are these for assisting travel by motorcycles at the moment?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
29c-8	How important would it be to increase or develop these?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

29c-9 Please explain _____

29c-10 Do passengers, pedestrians or other road users complain about motorcycles using this short cut?

Yes No

Please explain _____

30. For Motorcycles only.

a) How often do you wear a crash helmet?

Never Occasionally, If going into town, Most journeys, Always

b) When you carry passengers, how often do they wear a crash helmet?

Never Occasionally, If going into town, Most journeys, Always

DEVELOPMENT AND OTHER PERSPECTIVE QUESTIONNAIRE (NEPAL)

For Key Officials and Opinion Leaders.

(This questionnaire does not collect or record personal data as defined in the 2018 European GDPR legislation)

Road name: _____ Date of Interview: _____ Interviewer: _____

Location (eg, village name) _____ Coordinates: _____ (if GPS available)

Consent form (local language version will be supplied)

- 1 I confirm that I have read (or heard) the information provided in the information sheet dated 12 September 2019 for the above study, I have had the opportunity to consider the information, ask questions and I have had any questions answered satisfactorily.
- 2 I understand that my participation is voluntary and that I am free to withdraw at any time without giving any reason. I understand that if I decide to withdraw, any data that I have provided up to that point will be or included, if I agree to this.
- 3 I agree to take part in this research project.
- 4 I understand that my data will be anonymous and that my anonymised data may be used in future research.

Participant's signature or mark. _____

Date _____

Researcher's signature _____






Occupation of interviewee: _____ Gender: Female , Male

Caste: Brahmin/Chhetri Janjati Dalit Other _____






Age range: 16-17 , 18-25 , 26-35 , 36-45 , 46-55 , 56-65 , over 65

Other information (optional) _____

Questions relate to the road link from _____ to _____

		Very inadequate 	Inadequate 	OK Adequate 	Good 	Very good 
D-1	D-1. How do you rate the overall adequacy of the road?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

D-2 Are you happy with the following road characteristics?

No.	How satisfied are you with the road . . .	Very unsatisfied 	Unsatisfied 	No opinion 	Satisfied 	Very satisfied 
D2-1	Width	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
D2-2	Surface	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
D2-3	Structures	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
D2-4	Alignment (road bendiness/ gradient)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
D2-5	Connection to main destinations and main road	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
D2-6	Pedestrian access	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

D-3 Identify any key issues (tick as many as apply)

Road too narrow	Surface too rough/uneven	Surface too dusty	Road subject to flooding	Road too slippery or muddy	Road too steep	Poor alignment tight curves/poor visibility
Road works and obstacles in road	Poor junction layout	Poor behaviour of drivers	Traffic travels too fast	Pedestrians/cyclists at risk	Lack of shelter for passengers	Harassment from police/officials

Other issues: _____

D-5a Have you noticed any improvements along the road over the last four years? Yes / No .

What were the improvements? _____

D5b. Have you noticed any deteriorations along the road over the last four years? Yes / No .

What were the deteriorations? _____

D-6a	Have the improvements or deteriorations had any effect on traffic volumes?	Major reduction	Minor reduction	No effect	Minor increase	Major increase
		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

D-6b Explain the effects _____

D-7a	Have the improvements or deteriorations had any effect on passenger fares?	Major increase	Minor increase	No effect	Minor reduction	Major reduction
		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

(Give vehicle types for any changes, and note the change in fare in NPR, with "+" for increase or "-" for decrease)

Vehicle Type _____ Effect_ Increase/Decrease_ Fare Change NPR_ + / - _____

Vehicle Type _____ Effect_ Increase/Decrease_ Fare Change NPR_ + / - _____

Vehicle Type _____ Effect_ Increase/Decrease_ Fare Change NPR_ + / - _____

D-8a Have the changes had any effect on accident rates? Yes No

D-8b	Please identify the overall change in accident rates:	Major increase	Minor increase	No effect	Minor reduction	Major reduction
		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Identify the vehicles and road users most involved (give two examples)

D-9a Do you think the improvements have had any significant beneficial effects on access to ?






Markets		Clinics		Schools		Farming		Town	
Yes	No	Yes	No	Yes	No	Yes	No	Yes	No

D-9b Explain the most noticeable beneficial effects

D-10a Do you think the deteriorations have had any negative effects on access to ?

Markets		Clinics		Schools		Farming		Town	
Yes	No	Yes	No	Yes	No	Yes	No	Yes	No

D-10b Explain the most noticeable adverse effects

D-11	How do you rate the adequacy of the present maintenance on the surveyed road?	Very inadequate	Inadequate	OK Adequate	Good	Very good
		 <input type="checkbox"/>	 <input type="checkbox"/>	 <input type="checkbox"/>	 <input type="checkbox"/>	 <input type="checkbox"/>






D-12. Do motorcycles often go "off road" ie. using footpaths, tracks or trails?

- a) To reach villages and houses that are not close to the road? Yes No [eg, over 500m]
- b) On side tracks close to the road that are smoother than the road? Yes No
- c) As short cut rather than using the road? Yes No

(If a short cut), Which route from To

D-13






If there are motorcycle trails to going from the road to villages (D-12a), please answer the following:

No.	How important are these for assisting off-road villagers to access:	Very unimportant	Not important	No opinion	Important	Very important
						
D13a-1	Markets and shops	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
D13a-2	Clinics	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
D13a-3	Schools	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
D13a-4	How important would it be to connect other villages in this way?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

D13a-5 Please explain

D-14

If there are motorcycle side tracks close to the road that are smoother than the road (D-12b), please answer the following:






No.		Very unimportant 	Not important 	No opinion 	Important 	Very important 
D14b-1	How important are these for assisting travel by motorcycles at the moment?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
D14b-2	How important would it be to increase or develop these?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

D14b-3 Please explain _____

D-15

If there are short cuts used by motorcycles (D-12c), please answer the following for the most important one

D15 Which short cut: From To

No.		Very unimportant 	Not important 	No opinion 	Important 	Very important 
D15b	How important are these for assisting travel by motorcycles at the moment?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
D15c	How important would it be to increase or develop these?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

D15d Please explain _____

D15e Do passengers, pedestrians or other road users complain about motorcycles using the short cuts?

Yes No

D15f Please explain _____

KEY INFORMANT GUIDE - INFRASTRUCTURE EXPERT

NEPAL






Questions	Questionnaire No.
SECTION 1:RESPONDENT'S BACKGROUND	
Name of Interviewer	
1 Date of Interview	
2 Road and District Name	
3 Ministry/Institution/Contractor/other	
4 Department/Section/other	
5 Designation of the Respondent	
6 Gender	1. Male 2. Female
SECTION 2: INFRASTRUCTURE AND ROAD CONDITION	
7 Ask them what the role of their institution/organisation is, regarding roads in the area?	
8 Ask them what type of roads are you principally concerned with?	
9 Ask them to describe the previous and current condition of the road and how it has changed since DRSP construction/upgrading, for example: <ul style="list-style-type: none"> • Before DRSP work • 1 -2 years after DRSP work • Up to 5 years after DRSP work • Now..... 	
10 Ask them what type of access issues there are with the road..., i.e. water crossings, landslides, muddy areas, etc. and how this affects the type of transport services on the road?	
11 Ask them how these issues change from season to season, and how transport services change from season to season as a result....	

SECTION 3: ROAD MAINTENANCE AND TRANSPORT SERVICES

<p>12 Ask how they are involved in road maintenance, routine or emergency....? explain</p>	
<p>13 Ask them about budgets for road maintenance. Try and determine how much is spent on maintenance..., and what the gap is between requested and approved budget?</p>	
<p>14 Ask them about rural communities and how they are involved with the road? i.e. whether rural communities are involved with road maintenance and how.....</p>	
<p>15 Ask them to explain what maintenance has been carried out on the road since the rehabilitation? i.e. what activities, how often....</p>	
<p>16 Ask them how maintenance makes a difference to access on the road? i.e. travel times, access to goods transport, etc.</p>	
<p>17 Ask them what difference maintenance makes to the transport services on the road? i.e. do services increase, do different types of vehicles use the road?</p>	
<p>18 Ask them if there are any other problems or issues with the road, or any other comments they would like to make.....</p> <p>.....do they receive formal complaints from road users, and if so what type of complaints?</p>	

Nepal transport types

Auto-rickshaw/Bajaj		
2-wheel tractor		
Minivan/Tata Magic (6-8 seats)		
35-seater bus		
Cars		
Passenger jeeps/Utilities		

<p>Double-cabs & Pickups</p>		
<p>Light truck c. 1-3 tonnes</p>		
<p>Heavy truck c. 5-10 tonnes</p>		
<p>4-wheel tractor</p>		
<p>Hiace/minibus</p>		



Interactions: Maintenance-Provision of Access for Rural Transport Services



Research project: Interactions between improved rural access infrastructure and transport services provision (IMPARTS)

Invitation to participate

You are invited to tell us information about your travel experience on this road and the transport services that operate on them.

Purpose of the research project

The project aims to understand how transport services respond to changes in road condition (road investments or road deterioration due to lack of maintenance). The aim is to provide guidelines on making sure road planning, investments and maintenance are 'fit-for-purpose' for transport services, that provide essential mobility for rural people. Survey work will be completed in 2019 with the final report and guidelines reports prepared in 2020.

Why have I been chosen?

We wish to learn the views of:

- Many transport services users (differing by gender, age, work, travel needs, etc)
- Transport services operators (different types)
- People concerned with local development issues that are affected by roads and transport services (teachers, clinic staff, community leaders, etc)

What information will be collected from me and why is this relevant to the project?

We will collect information from users about their travel patterns and experiences of the various types of transport services used, and their views and preferences on these services

We will collect information from transport services operators about their operational patterns and their costs, and how their markets are changing and how this is influenced by the road.

We will collect information from influential members of the community about their views on how the various transport services are meeting the needs of the community for passenger and freight movements.

We will not be collecting or retaining personal information.

This anonymous information will be analysed to see the patterns emerging and any problems that have been identified. This will help us to make recommendations for future investments in roads and transport services.

What are the possible benefits of taking part?

Those concerned about having improved rural transport services will be able to voice their opinions, and in the medium-to-long term we hope the research conclusions will help the various authorities to provide (or facilitate) better and more suitable roads and transport services.

Will my taking part in this project be kept confidential?

Yes. All data collected and analysed will be anonymous. The information you give will be combined with the information provided by others, and will not be traceable to you.

Further information can be obtained from

The survey enumerator and TRL, UK

- ▶ **Robin Workman**, Senior Research Engineer rworkman@trl.co.uk



Consent form wording (local language version will be supplied)

- 1 I confirm that I have read (or heard) the information provided in the information sheet dated 28 July 2019 for the above study, I have had the opportunity to consider the information, ask questions and I have had any questions answered satisfactorily.
- 2 I understand that my participation is voluntary and that I am free to withdraw at any time without giving any reason. I understand that if I decide to withdraw, any data that I have provided up to that point will be included, if I agree to this.
- 3 I agree to take part in this research project.
- 4 I understand that my data will be anonymous and that my anonymised data may be used in future research.

Participant's signature or mark.

Date

Researcher's signature

USERS PERSPECTIVE QUESTIONNAIRE (TANZANIA)

(This questionnaire does not collect or record personal data as defined in the 2018 European GDPR legislation)

Questionnaire No. _____ Road Name _____ Date of Interview: _____ Interviewer: _____

Location (eg, village name) _____ Geo Coordinates: (if GPS) _____

Consent form (local language version will be supplied)

- 1 I confirm that I have read (or heard) the information provided in the information sheet dated 16 October 2019 for the above study, I have had the opportunity to consider the information, ask questions and I have had any questions answered satisfactorily.
- 2 I understand that my participation is voluntary and that I am free to withdraw at any time without giving any reason. I understand that if I decide to withdraw, any data that I have provided up to that point will be included, if I agree to this.
- 3 I agree to take part in this research project.
- 4 I understand that my data will be anonymous and that my anonymised data may be used in future research.

Participant's signature or mark.

Date

Researcher's signature

Interviewee Gender: Female/Male Occupation: _____

Age range: 16-17 , 18-25 , 26-35 , 36-45 , 46-55 , 56-65 , over 65

Other information if relevant, eg, disability affecting travel (optional) _____

Preamble to help with further respondent classification and to determine which transport modes will be asked about.

Which transport services did you use during last year ON THIS ROAD (the road being surveyed) and for what purposes and how often?

U1-1. Modes of transport	Main Purpose	Average frequency the person travelled each month
<u>1st Mode</u> Motorcycle <input type="checkbox"/> Car-taxi <input type="checkbox"/> Minibus <input type="checkbox"/> Pickup or 4-wheel dr. utility <input type="checkbox"/> Bajaj <input type="checkbox"/> Truck <input type="checkbox"/> Large Bus <input type="checkbox"/> Bicycle <input type="checkbox"/>	work <input type="checkbox"/> health <input type="checkbox"/> school/college <input type="checkbox"/> sell produce <input type="checkbox"/> Local market <input type="checkbox"/> town/shopping/bank <input type="checkbox"/> farming <input type="checkbox"/> friends/relations <input type="checkbox"/> gov. offices <input type="checkbox"/> religious meeting <input type="checkbox"/> funeral/ wedding <input type="checkbox"/> business <input type="checkbox"/> other <input type="checkbox"/> _____	

<u>2nd Mode</u> Motorcycle <input type="checkbox"/> Car-taxi <input type="checkbox"/> Minibus <input type="checkbox"/> Pickup or 4-wheel dr. utility <input type="checkbox"/> Bajaj <input type="checkbox"/> Truck <input type="checkbox"/> Large Bus <input type="checkbox"/> Bicycle <input type="checkbox"/>	work <input type="checkbox"/> health <input type="checkbox"/> school/college <input type="checkbox"/> sell produce <input type="checkbox"/> Local market <input type="checkbox"/> town/shopping/bank <input type="checkbox"/> farming <input type="checkbox"/> friends/relations <input type="checkbox"/> gov. offices <input type="checkbox"/> religious meeting <input type="checkbox"/> funeral/ wedding <input type="checkbox"/> business <input type="checkbox"/> other <input type="checkbox"/> _____	Average frequency the person travelled each month:
<u>3rd Mode</u> Motorcycle <input type="checkbox"/> Car-taxi <input type="checkbox"/> Minibus <input type="checkbox"/> Pickup or 4-wheel dr. utility <input type="checkbox"/> Bajaj <input type="checkbox"/> Truck <input type="checkbox"/> Large Bus <input type="checkbox"/> Bicycle <input type="checkbox"/>	work <input type="checkbox"/> health <input type="checkbox"/> school/college <input type="checkbox"/> sell produce <input type="checkbox"/> Local market <input type="checkbox"/> town/shopping/bank <input type="checkbox"/> farming <input type="checkbox"/> friends/relations <input type="checkbox"/> gov. offices <input type="checkbox"/> religious meeting <input type="checkbox"/> funeral/ wedding <input type="checkbox"/> business <input type="checkbox"/> other <input type="checkbox"/> _____	Average frequency the person travelled each month:

U1. 2 Which vehicles are best for following road conditions?

U1.2 a When road is smooth and dry?

Motorcycle Bajaj Car-taxi Minibus Pickup/utility Truck Large Bus Bicycle

U1.2 b. When road is rough and dry?

Motorcycle Bajaj Car-taxi Minibus Pickup/utility Truck Large Bus Bicycle

U1. 2 c. When road is wet or muddy?

Motorcycle Bajaj Car-taxi Minibus Pickup/utility Bajaj Truck Large Bus Bicycle

U1-3. SINCE THE ROAD IMPROVEMENTS of 201?, has the total number of vehicles operating each day along the road changed?

(Please explain the improvements referred to: Talawanda 2010-11; Hai, 2016; Babati: 2016; Bahi bridges, 2016-18; Dodoma, 2016; Morogoro, 2014-2016)

	Big decrease	Small decrease	No change	Small increase	Big increase
Motorcycle					
Bajaj					
Car-Taxi					
Minibus					
Pick-Up or 4-Wheel Drive					
Truck					
Large Bus					
Paying Bicycle					

U1-4. SINCE THE ROAD IMPROVEMENTS of 201?, has the total number of passengers carried each day by all the vehicles operating along the road changed?

(Please explain the improvements referred to: Talawanda 2010-11; Hai, 2016; Babati: 2016; Bahi bridges, 2016-18; Dodoma, 2016; Morogoro, 2014-2016)

	Big decrease	Small decrease	No change	Small increase	Big increase
Motorcycle					
Bajaj					
Car-Taxi					
Minibus					
Pick-Up or 4-Wheel Drive					
Truck					
Large Bus					
Paying Bicycle					

U1-5. OVER THE LAST YEAR, has the total number of vehicles operating each day along the road changed?

	Big decrease	Small decrease	No change	Small increase	Big increase
Motorcycle					
Bajaj					
Car-Taxi					
Minibus					
Pick-Up or 4-Wheel Drive					
Truck					
Large Bus					
Paying Bicycle					

U1-6 OVER THE LAST YEAR, has the total number of passengers carried each day by all the vehicles operating along the road changed?

	Big decrease	Small decrease	No change	Small increase	Big increase
Motorcycle					
Bajaj					
Car-Taxi					
Minibus					
Pick-Up or 4-Wheel Drive					
Truck					
Large Bus					
Paying Bicycle					

U1-7. Please provide the required information below for each mode of transport

(Please record at least 2 different origins and destinations if possible)

	Origins	Destinations	Dist. (km) <i>Note 1</i>	Frequency		Passengers fares		Journey time-dry (min)	Journey time-wet (min)	Accompanied freight (20-50 kg)		Unaccompanied freight (c.200kg)	
				Dry Season Per month	Wet Season Per month	Dry Season	Wet Season			Weight kg ^{Note}	Tariff TZS.	Weight kg	Tariff. TZS
Motorcycle													
Bajaj													
Car -Taxi													
Minibus													
Pick-Up or 4-Wheel Dr. utility													

1. Actual distances can be calculated from origin and destination, so leave blank if unsure of accuracy of information .

2. Make sure a specific or estimated weight is entered. Where cost is per container (eg basket of produce) estimate a typical weight of this

U1-7 (Please record at least 2 different origins and destinations if possible)






	Origins	Destinations	Dist. (km) <i>Note 1</i>	Frequency		Passengers fares		Journey time-dry (min)	Journey time -wet (min)	Accompanied freight (20-50 kg)		Unaccompanied freight (c.200kg)	
				Dry Season Per month	Wet Season Per month	Dry Season Normal	Wet Season, Normal			Weight kg ^{<i>Note 2</i>}	Tariff TZS.	Weight kg	Tariff TZS.
Truck													
Large Bus													
Bicycle													
Other: Type: _____													

Note.

1. Actual distances can be calculated from origin and destination, so leave blank if unsure of accuracy of information .
2. Make sure a specific or estimated weight is entered. Where cost is per container (eg basket of produce) estimate a typical weight of this






Part 2. Satisfaction for each type of transport services regularly used (maximum 3 per person):

Mode 1 being rated here: Motorcycle **Bajaj** **Car-taxi** **Minibus** **Pickup/utility 4x4** **Truck** **Large Bus** **Bicycle**

No.	How satisfied are you with . . . <i>(note: the sequence of question numbers has some missing values: 8, 11)</i>	Very unsatisfied 	Unsatisfied 	No opinion 	Satisfied 	Very satisfied 
U2-1	The present passenger's fares for this mode of transport on this road?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
U2-2	The journey times for this mode of transport on this road?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
U2-3	The service frequency for this mode of transport on this road?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
U2-4	The present timetable or predictability of mode of transport? <i>(Not for m/c)</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
U2-5	The present chances of getting onto the first vehicle?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
U2-6	The availability of small freight services <i>(20-50kg accompanied goods)?</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
U2-7	The present small freight charges for this mode?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
U2-9	The availability of medium freight services (200kg) for this mode?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
U2-10	The present medium freight charges (200 kg) for this mode?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
U2-12	The courier services provided by this mode of transport?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
U2-13	The level of safety of this mode of transport on this road? <i>(safety relates to accident involving injury to people and damage to vehicle)</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
U2-14	The level of security of this mode of transport on this road? <i>(risk of theft, assault or harassment)</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
U2-15	The level of comfort in terms of seat space? <i>(Not for m/c)</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
U2-16	The level of comfort in terms of seat type/conditions? <i>Note. Seat type/conditions include metal, wooden, plastic and condition</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
U2-17	The level of comfort in terms of baggage around passengers? <i>(Not m/c)</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
U2-18	The level of comfort in terms of road roughness and bumpiness?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
U2-19	The level of comfort in terms of environment (noise levels/dust/heat)?					
U2-20	The present convenience of access for the elderly and physically challenged people, <i>eg, those using mobility aid such as sticks, crutches, frame or wheelchair?</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
U2-21	The facilities provided at the transport stops and pickup points along this roadside? <i>(shelter/seats)</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>






Part 2. Satisfaction for each type of transport services regularly used (maximum 3 per person):

Mode 2 being rated here: Motorcycle **Bajaj** **Car-taxi** **Minibus** **Pickup/utility 4x4** **Truck** **Large Bus** **Bicycle**

No.	How satisfied are you with . . . <i>(note: the sequence of question numbers has some missing values: 8, 11)</i>	Very unsatisfied 	Unsatisfied 	No opinion 	Satisfied 	Very satisfied 
U2-1	The present passenger's fares for this mode of transport on this road?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
U2-2	The journey times for this mode of transport on this road?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
U2-3	The service frequency for this mode of transport on this road?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
U2-4	The present timetable or predictability of mode of transport? <i>(Not for m/c)</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
U2-5	The present chances of getting onto the first vehicle?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
U2-6	The availability of small freight services <i>(20-50kg accompanied goods)?</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
U2-7	The present small freight charges for this mode?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
U2-9	The availability of medium freight services (200kg) for this mode?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
U2-10	The present medium freight charges (200 kg) for this mode?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
U2-12	The courier services provided by this mode of transport?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
U2-13	The level of safety of this mode of transport on this road? <i>(safety relates to accident involving injury to people and damage to vehicle)</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
U2-14	The level of security of this mode of transport on this road? <i>(risk of theft, assault or harassment)</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
U2-15	The level of comfort in terms of seat space? <i>(Not for m/c)</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
U2-16	The level of comfort in terms of seat type/conditions? <i>Note. Seat type/conditions include metal, wooden, plastic and condition</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
U2-17	The level of comfort in terms of baggage around passengers? <i>(Not m/c)</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
U2-18	The level of comfort in terms of road roughness and bumpiness?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
U2-19	The level of comfort in terms of environment (noise levels/dust/heat)?					
U2-20	The present convenience of access for the elderly and physically challenged people, <i>eg, those using mobility aid such as sticks, crutches, frame or wheelchair?</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
U2-21	The facilities provided at the transport stops and pickup points along this roadside? <i>(shelter/seats)</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Part 2. Satisfaction for each type of transport services regularly used (maximum 3 per person):

Mode 3 being rated here: Motorcycle **Bajaj** **Car-taxi** **Minibus** **Pickup/utility 4x4** **Truck** **Large Bus** **Bicycle**

No.	How satisfied are you with . . . <i>(note: the sequence of question numbers has some missing values: 8, 11)</i>	Very unsatisfied 	Unsatisfied 	No opinion 	Satisfied 	Very satisfied 
U2-1	The present passenger's fares for this mode of transport on this road?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
U2-2	The journey times for this mode of transport on this road?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
U2-3	The service frequency for this mode of transport on this road?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
U2-4	The present timetable or predictability of mode of transport? <i>(Not for m/c)</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
U2-5	The present chances of getting onto the first vehicle?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
U2-6	The availability of small freight services <i>(20-50kg accompanied goods)?</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
U2-7	The present small freight charges for this mode?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
U2-9	The availability of medium freight services (200kg) for this mode?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
U2-10	The present medium freight charges (200 kg) for this mode?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
U2-12	The courier services provided by this mode of transport?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
U2-13	The level of safety of this mode of transport on this road? <i>(safety relates to accident involving injury to people and damage to vehicle)</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
U2-14	The level of security of this mode of transport on this road? <i>(risk of theft, assault or harassment)</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
U2-15	The level of comfort in terms of seat space? <i>(Not for m/c)</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
U2-16	The level of comfort in terms of seat type/conditions? <i>Note. Seat type/conditions include metal, wooden, plastic and condition</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
U2-17	The level of comfort in terms of baggage around passengers? <i>(Not m/c)</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
U2-18	The level of comfort in terms of road roughness and bumpiness?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
U2-19	The level of comfort in terms of environment (noise levels/dust/heat)?					
U2-20	The present convenience of access for the elderly and physically challenged people, <i>eg, those using mobility aid such as sticks, crutches, frame or wheelchair?</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
U2-21	The facilities provided at the transport stops and pickup points along this roadside? <i>(shelter/seats)</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

IMPARTS VEHICLE OPERATORS' QUESTIONNAIRE

(For operators of all types of vehicles providing public transport services on study road)

(This questionnaire does not collect or record personal data as defined in the 2018 European GDPR legislation)

Questionnaire No. _____ Interviewer: _____ Date: _____
 Road: _____ Location (eg, village name) _____
 Coordinates: _____ (if GPS available)

Consent form wording (local language version will be supplied)

- 1 I confirm that I have read (or heard) the information provided in the information sheet dated 16 October 2019 for the above study, I have had the opportunity to consider the information, ask questions and I have had any questions answered satisfactorily.
- 2 I understand that my participation is voluntary and that I am free to withdraw at any time without giving any reason. I understand that if I decide to withdraw, any data that I have provided up to that point will be included, if I agree to this.
- 3 I agree to take part in this research project.
- 4 I understand that my data will be anonymous and that my anonymized data may be used in future research.

 Participant's signature or mark. Date Researcher's signature

Section A: Driver's Information

Age range: 16-17 , 18-25 , 26-35 , 36-45 , 46-55 , 56-65 , over 65

Education: _____ Gender: Male Female

How long have you been driving this type of vehicle? _____ years Do you have a driving license?
 Yes No

Section B: Vehicle information and ownership

1 **Vehicle type:** Motorcycle Bajaj Car taxi Minibus Pickup/Utility Large bus
 Truck Other: _____

2 **Make of vehicle** **Model of vehicle**.....
Engine capacitycc/litres **Year of manufacture**.....

3 **What fuel do you use?** Petrol Diesel CNG 2-stroke petrol

4 **How many seats are there?**

5 **Is there a legal maximum load?** Passengers Tonnes

6a **Is the vehicle owned outright by the driver?** Yes No
 (If Yes) Year of purchase..... Total purchase cost Tsh
 Estimated current value Tsh

6b **Is the vehicle owned on hire purchase, or financed by a loan, by the driver?** Yes No
 (If Yes) Year of start of purchase Deposit paid: Tsh Each instalment Tsh.....
 Number of instalments Estimated current value Tsh

6c Is the vehicle owned by another person and hired by the driver? Yes No
 (If Yes) What is the hire cost: Tsh. per day / week / month
 Estimated current value Tsh

Who pays the costs of maintenance and repairs? Driver Owner Shared
 Other arrangements?.....

6d Is the vehicle owned by another person that the driver works for? Yes No
 (If Yes) How are revenues split between owner and driver?
 Profits go to Owner and driver is paid Tsh per day / week / month
 or
 Other arrangement explain

Estimated current value Tsh

Section C: Vehicle operating patterns

- 7 Does the vehicle usually operate on fixed route?** Yes No If so what is the route?
 From..... To..... Distancekm.
 Normal journey timemins
- 8 What is the normal passenger fare for this (fixed route) journey, when sharing?** Tsh
 What is the fare for children on a seat? Tsh. (sharing);
 What is the fare for someone with disabilities? Tsh..... (sharing);
 What is the charge for carrying a 20 kg sack of produce? Tsh (with customers);
 a 50 kg sack of produce? Tsh.(with customers);
 What is the tariff if someone **hires the whole vehicle for this single journey?** Tsh.....
- 9 On average, how many paying *single* trips do you make per day?** per day
 (a return trip = 2 single trips)
On average, how many paying *single* trips do you make per week?per week
- 10 What was the *last* paying single trip you had?**
 From..... To..... Distance km.
 Journey time.....mins Total fare/freight revenue Tsh..... No of passengers..... Kilograms of
 freight carried (approx.)kg
- 11 Over the last month what was the average gross revenue per working day?**
 (gross revenue is total of all fares and all freight tariffs, with no deductions for fuel, etc)
What is your average gross revenue each month? Tsh.
- 12 What would you estimate your monthly net income/profit from your transport operations?** Tsh.....
 (this is gross revenue minus fuel and other costs)
- 13 On average, what distance do you travel each day and each week?** km/day km/week
- 14 On average, how much fuel do you use in your operations?** (Record answer interviewee is most comfortable with,
 ie per day or per week)
 Tsh..... per day; litres/day
 Tsh. per week; litres/week
- 15a Please estimate your repair costs and maintenance costs now:** Tsh. per year
- 15b Please estimate what your repair and maintenance costs would be on a smooth road?** Tsh.per year
- 15c How many tyres do you replace each year?**
How many tyres would you replace on a smooth road?
- 15d What is the cost of a front tyre?** Tsh. ; **What is the cost of a back tyre?** Tsh.....
- 16 What percentage of vehicle revenue comes from passengers, freight or from driver/owner's trading on own account?**
 Percentage of revenue from passengers%; goods%; own business/trading.....%

- 17 Do you have assistants or conductors?** Number How are they paid?
Tsh..... total per week
(or percentage of gross profit.....%; or other system))
- 18a. Do you have vehicle insurance?** Yes No If so, Tsh per year
- 18b. Do you have annual vehicle tests?** Yes No If so, Tsh..... per year
- 18c. Do you pay annual registration tax for your vehicle?** Yes No If so, Tsh per year
- 18d. Do you pay for a government issued route/or commercial operating license for your vehicle?** Yes No If so, Tsh. per year
- 19 Are you a member of a driver association?** Yes No
- If yes, how much does this cost?** Tsh. per month
- Does your association do any of the follow?** (tick all that apply)
- | | |
|---|---|
| Control the order of departure at starting point/terminals <input type="checkbox"/> Yes <input type="checkbox"/> No | Provide support in case of illness <input type="checkbox"/> Yes <input type="checkbox"/> No |
| Control fares <input type="checkbox"/> Yes <input type="checkbox"/> No | Provide support in the case of a crash <input type="checkbox"/> Yes <input type="checkbox"/> No |
| Control who can operate on different routes <input type="checkbox"/> Yes <input type="checkbox"/> No | Provide support in the case of police action <input type="checkbox"/> Yes <input type="checkbox"/> No |
| Control the time between departures <input type="checkbox"/> Yes <input type="checkbox"/> No | Negotiate with officials in the nearby town <input type="checkbox"/> Yes <input type="checkbox"/> No |
- 20 During the past year, has the number of your type of public transport vehicles operating each day along your routes changed?**
- | | | | | |
|---------------------------------------|---|------------------------------------|---|---------------------------------------|
| Big decrease <input type="checkbox"/> | Small decrease <input type="checkbox"/> | No change <input type="checkbox"/> | Small increase <input type="checkbox"/> | Big increase <input type="checkbox"/> |
|---------------------------------------|---|------------------------------------|---|---------------------------------------|
- 21 During the past year, has the number of daily trips that you and your type of vehicle operating along your routes changed?**
- | | | | | |
|---------------------------------------|---|------------------------------------|---|---------------------------------------|
| Big decrease <input type="checkbox"/> | Small decrease <input type="checkbox"/> | No change <input type="checkbox"/> | Small increase <input type="checkbox"/> | Big increase <input type="checkbox"/> |
|---------------------------------------|---|------------------------------------|---|---------------------------------------|
- 22 During the past year, has the total number of passengers carried each day by all public transport vehicles operating along the road changed**
- | | | | | |
|---------------------------------------|---|------------------------------------|---|---------------------------------------|
| Big decrease <input type="checkbox"/> | Small decrease <input type="checkbox"/> | No change <input type="checkbox"/> | Small increase <input type="checkbox"/> | Big increase <input type="checkbox"/> |
|---------------------------------------|---|------------------------------------|---|---------------------------------------|
- 23 What has been the main causes of the changes?** (Tick all important changes)
- | | |
|---|---|
| Road condition improving <input type="checkbox"/> Yes <input type="checkbox"/> No | Road condition deteriorating <input type="checkbox"/> Yes <input type="checkbox"/> No |
| More people travelling <input type="checkbox"/> Yes <input type="checkbox"/> No | Fewer People travelling <input type="checkbox"/> Yes <input type="checkbox"/> No |
| More use of motorcycles <input type="checkbox"/> Yes <input type="checkbox"/> No | Less use of motorcycles <input type="checkbox"/> Yes <input type="checkbox"/> No |
| More use of three-wheelers <input type="checkbox"/> Yes <input type="checkbox"/> No | Less use of three-wheelers <input type="checkbox"/> Yes <input type="checkbox"/> No |
| More use of pick-ups/utilities <input type="checkbox"/> Yes <input type="checkbox"/> No | Less use of pick-ups/utilities <input type="checkbox"/> Yes <input type="checkbox"/> No |
| More use of Minibuses/minivans <input type="checkbox"/> Yes <input type="checkbox"/> No | Less use of Minibuses/minivans <input type="checkbox"/> Yes <input type="checkbox"/> No |
| More use of Large Buses <input type="checkbox"/> Yes <input type="checkbox"/> No | Less use of Large Buses <input type="checkbox"/> Yes <input type="checkbox"/> No |

24 Do you get stopped by police or other officials? Yes No
 (If Yes) How often? times per month. Or times per year

If yes, what are the main reasons? (tick all that apply)

- No reason at all
- Overloading: too many people
- Faulty lights
- Traffic signs
- wrong equipment
- Stopping in wrong place
- Overloading: too big a load
- Speeding
- Licence/ tax and insurance
- other reasons.

25 How much do you have to pay in fines or other costs to officials/police per month?






Tsh. per month

26 What are the main problems you face when operating on your normal route(s)?

Tick all that are important.

- Road condition
- Declining market
- Increasing ownership of motorcycles
- Harassment from police/officials
- Too much competition from **other types** of vehicle on your route(s)
- Too much completion from **your type** of vehicle on your route(s)
- Other (specify): _____






27 What aspects of the condition of this road affect you and your transport business

No.		Very unimportant 	Not important 	No opinion 	Important 	Very important 
27-1	Road roughness	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
27-2	Road slippery when wet	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
27-3	Road too muddy	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
27-4	Risk of getting stuck	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
27-5	Risk of damage to vehicle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
27-6	Travelling is uncomfortable for passengers	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
27-7	Travel times are high	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
27-8	High operating costs due to road	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
27-9	Road is very dusty in dry season	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
27-10	Other (state) _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

28. For Motorcycles only. Do you often go “off road” ie. Using footpaths or tracks?






- a) On footpaths or trails to reach villages and houses that are not close to the road? [eg, over 500m]
 Yes No
- b) On a side track that is smoother than the road? Yes No
- c) As short cut rather than using the road? Yes No

29. If you use motorcycle trails to go from the road to villages (as 28a), please answer the following:

No.		Very unimportant 	Not important 	No opinion 	Important 	Very important 
29a-1	How important are these for your transport business (income)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	How important are these for carrying passengers from off-road villagers to and/or from:					
29a-2	Markets and shops	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
29a-3	Clinics	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
29a-4	Schools	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
29a-5	How important would it be to your transport business (income) if other villages could be connected in this way?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

29a-6 Please explain _____

29b If there are motorcycle side tracks close to the road that are smoother than the road (as 28b), please answer the following:

No.		Very unimportant 	Not important 	No opinion 	Important 	Very important 
29b-1	How important are these for assisting your travel by motorcycles at the moment?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
29b-2	How important would it be to you to increase or improve the side tracks?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

D29b-3 Please explain _____

29c If there are important short cuts that you use on your motorcycle (as 28c), please answer the following for the most important one

29c-1 Which short cut: From To

29c-2 How long is this km (or metres)

29c-3 How much time do you save? minutes

29c-4 When do you take the short cut, rather than using the road?






All year round

From period (give months) to

Only when the short cut is passable

29c-5 When it is impassable, what causes this? _____

29c-6 Is the road affected in the same way? Please explain? _____

		Very unimportant 	Not important 	No opinion 	Important 	Very important 
29c-7	How important are these for assisting travel by motorcycles at the moment?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
29c-8	How important would it be to increase or develop these?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

29c-9 Please explain _____

29c-10 Do passengers, pedestrians or other road users complain about motorcycles using this short cut?

Yes No

Please explain _____

30. For Motorcycles only.

a) How often do you wear a crash helmet?

Never Occasionally, If going into town, Most journeys, Always

b) When you carry passengers, how often do they wear a crash helmet?

Never Occasionally, If going into town, Most journeys, Always

DEVELOPMENT AND OTHER PERSPECTIVE QUESTIONNAIRE

For Key Officials and Opinion Leaders.

(This questionnaire does not collect or record personal data as defined in the 2018 European GDPR legislation)

Questionnaire No. ____ **Road name:** _____ **Date of Interview:** _____

Interviewer: _____ **Location (eg, village name)** _____

Coordinates: _____ *(if GPS available)*

Consent form *(local language version will be supplied)*

- 1 I confirm that I have read (or heard) the information provided in the information sheet dated 16 October 2019 for the above study, I have had the opportunity to consider the information, ask questions and I have had any questions answered satisfactorily.
- 2 I understand that my participation is voluntary and that I am free to withdraw at any time without giving any reason. I understand that if I decide to withdraw, any data that I have provided up to that point will be included, if I agree to this.
- 3 I agree to take part in this research project.
- 4 I understand that my data will be anonymous and that my anonymised data may be used in future research.

Participant's signature or mark.

Date






Researcher's signature

Occupation of interviewee: _____ **Gender:** Female , Male






Age range: 16-17 , 18-25 , 26-35 , 36-45 , 46-55 , 56-65 , over 65

Other information (optional) _____

Questions relate to the road link from _____ to _____

		Very inadequate 	Inadequate 	OK Adequate 	Good 	Very good 
D-1	D-1. How do you rate the overall adequacy of the road?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

D-2 Are you happy with the following road characteristics?

No.	How satisfied are you with the road . . .	Very unsatisfied 	Unsatisfied 	No opinion 	Satisfied 	Very satisfied 
D2-1	Width	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
D2-2	Surface	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
D2-3	Structures	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
D2-4	Alignment (road bendiness/ gradient)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
D2-5	Connection to main destinations and main road	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
D2-6	Pedestrian access	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

D-3 Identify any key issues (tick as many as apply)

Road too narrow	Surface too rough/uneven	Surface too dusty	Road subject to flooding	Road too slippery or muddy	Road too steep	Poor alignment tight curves/poor visibility
Road works and obstacles in road	Poor junction layout	Poor behaviour of drivers	Traffic travels too fast	Pedestrians/cyclists at risk	Lack of shelter for passengers	Harassment from police/officials






Other issues: _____

D-5a Have you noticed any improvements along the road over the last four years? Yes / No .






What were the improvements? _____

D5b. Have you noticed any deteriorations along the road over the last four years? Yes / No .

What were the deteriorations? _____

D-6a	Have the improvements or deteriorations had any effect on traffic volumes?	Major reduction  <input type="checkbox"/>	Minor reduction  <input type="checkbox"/>	No effect  <input type="checkbox"/>	Minor increase  <input type="checkbox"/>	Major increase  <input type="checkbox"/>
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D-6b Explain the effects _____

D-7a	Have the improvements or deteriorations had any effect on passenger fares?	Major increase  <input type="checkbox"/>	Minor increase  <input type="checkbox"/>	No effect  <input type="checkbox"/>	Minor reduction  <input type="checkbox"/>	Major reduction  <input type="checkbox"/>
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




(Give vehicle types for any changes, and note the change in fare in TZS, with "+" for increase or "-" for decrease)

Vehicle Type _____ **Effect** Increase/Decrease **Fare Change TZS** + / - _____

Vehicle Type _____ **Effect** Increase/Decrease **Fare Change TZS** + / - _____

Vehicle Type _____ **Effect** Increase/Decrease **Fare Change TZS** + / - _____

D-8a Have the changes had any effect on accident rates? Yes No

D-8b	Please identify the overall change in accident rates:	Major increase  <input type="checkbox"/>	Minor increase  <input type="checkbox"/>	No effect  <input type="checkbox"/>	Minor reduction  <input type="checkbox"/>	Major reduction  <input type="checkbox"/>
-------------	--	--	---	---	---	---

Identify the vehicles and road users most involved (give two examples)

D-9a Do you think the improvements have had any significant beneficial effects on access to ?






Markets		Clinics		Schools		Farming		Town	
Yes	No	Yes	No	Yes	No	Yes	No	Yes	No

D-9b Explain the most noticeable beneficial effects

D-10a Do you think the deteriorations have had any negative effects on access to ?

Markets		Clinics		Schools		Farming		Town	
Yes	No	Yes	No	Yes	No	Yes	No	Yes	No

D-10b Explain the most noticeable adverse effects

D-11	How do you rate the adequacy of the present maintenance on the surveyed road?	Very inadequate	Inadequate	OK Adequate	Good	Very good
		 <input type="checkbox"/>	 <input type="checkbox"/>	 <input type="checkbox"/>	 <input type="checkbox"/>	 <input type="checkbox"/>






D-12. Do motorcycles often go "off road" ie. using footpaths, tracks or trails?

- a) To reach villages and houses that are not close to the road? Yes No [eg, over 500m]
- b) On side tracks close to the road that are smoother than the road? Yes No
- c) As short cut rather than using the road? Yes No

(If a short cut), Which route from To

D-13






If there are motorcycle trails to going from the road to villages (D-12a), please answer the following:

No.	How important are these for assisting off-road villagers to access:	Very unimportant	Not important	No opinion	Important	Very important
D13a-1	Markets and shops	 <input type="checkbox"/>	 <input type="checkbox"/>	 <input type="checkbox"/>	 <input type="checkbox"/>	 <input type="checkbox"/>
D13a-2	Clinics	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
D13a-3	Schools	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
D13a-4	How important would it be to connect other villages in this way?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

D13a-5 Please explain

D-14

If there are motorcycle side tracks close to the road that are smoother than the road (D-12b), please answer the following:






No.		Very unimportant 	Not important 	No opinion 	Important 	Very important 
D14b-1	How important are these for assisting travel by motorcycles at the moment?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
D14b-2	How important would it be to increase or develop these?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

D14b-3 Please explain _____

D-15

If there are short cuts used by motorcycles (D-12c), please answer the following for the most important one

D15 Which short cut: From To

No.		Very unimportant 	Not important 	No opinion 	Important 	Very important 
D15b	How important are these for assisting travel by motorcycles at the moment?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
D15c	How important would it be to increase or develop these?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

D15d Please explain _____

D15e Do passengers, pedestrians or other road users complain about motorcycles using the short cuts?

Yes No

D15f Please explain _____

KEY INFORMANT GUIDE - INFRASTRUCTURE EXPERT

Chekimaji-Kawaya, Hai road: Section rehabilitated in 2016

Three culverts, together with 5 kms embankments were built through rice growing area

Questions	Questionnaire No.
SECTION 1:RESPONDENT'S BACKGROUND	
Name of Interviewer	
1 Date of Interview	
2 Road and District Name	
3 Ministry/Institution/Contractor/other	
4 Department/Section/other	
5 Designation of the Respondent	
6 Gender	1. Male 2. Female
SECTION 2: INFRASTRUCTURE AND ROAD CONDITION	
7 Ask them what the role of their institution/organisation is, regarding roads in the area?	
8 Ask them what type of roads are you principally concerned with?	
9 Ask them to describe the previous and current condition of the road and how it has changed, for example: <ul style="list-style-type: none"> • Before IRAT rehabilitation in 2016 • Up to 1 year after IRAT rehabilitation • Up to 2 years after IRAT rehabilitation • Now..... 	
10 Ask them what type of access issues there are with the road..., i.e. water crossings, landslides, muddy areas, etc. and how this affects the type of transport services on the road?	
11 Ask them how these issues change from season to season, and how transport services change from season to season as a result....	

SECTION 3: ROAD MAINTENANCE AND TRANSPORT SERVICES

<p>12 Ask how they are involved in road maintenance, routine or emergency....? explain</p>	
<p>13 Ask them about budgets for road maintenance. Try and determine how much is spent on maintenance...</p>	
<p>14 Ask them about rural communities and how they are involved with the road? i.e. whether rural communities are involved with road maintenance and how.....</p>	
<p>15 Ask them to explain what maintenance has been carried out on the road since the rehabilitation? i.e. what activities, how often....</p>	
<p>16 Ask them how maintenance makes a difference to access on the road? i.e. travel times, access to goods transport, etc.</p>	
<p>17 Ask them what difference maintenance makes to the transport services on the road? i.e. do services increase, do different types of vehicles use the road?</p>	
<p>18 Ask them if there are any other problems or issues with the road, or any other comments they would like to make.....</p>	



Tanzania transport types. Sheet 1. Vehicle guide and notes

<p>Motorcycle / Boda boda</p> <p>Loads 0-5 kg (eg, small bag) 6—50 kg (eg, jerry can, basket) 50+ kg (eg, filled sack)</p>	
<p>Bicycle <i>Consider with load if more than about 5 kg (ie, more than just a school bag)</i></p>	
<p>Donkeys</p>	
<p>Pedestrians <i>Consider with load if more than about 5 kg (ie, more than just a school bag or light shopping)</i></p>	

For sheet 1: Each row is a time period. It can be filled in with a short vertical line for each 'hit' with four crossed out by the fifth line. (ie, I, II, III, IIII, #####). This makes it easy to count in fives for the total.

If there is not much traffic, each line could be 1 hour, but if there is much traffic, move to a new line each half hour (even every 15 minutes is lots of traffic).

For motorcycles add one 'hit' for the motorcycle, one for each of the people on it (so motorcycle with male driver wearing a helmet, one woman passenger and one child (without helmets) would have one mark in each of the first five data columns. If there were two children, or two people wearing helmets, then child column and the helmet column would have two marks inserted. Enter one mark for the relevant load (0-5kg, 6-50 kg, or 50+ kg).






For pedestrians, one mark for each person (man, woman or child) and one mark for each load over about 5 kg (school bag not a load, filled bucket is a load).

For cyclists, one mark for each cycle and one for each person (man, woman or child) on a bicycle. And one mark for each load over about 5 kg (school bag not a load).

Donkeys. One mark for each passing donkey. No need to record load.








Tanzania transport types. Sheet 2. Vehicle guide and notes

<p>Bajaj</p>	
<p>Minivan (6-8 seats) <i>including Toyota Noah</i></p>	
<p>Mini-bus (about 16 seats) <i>Including Toyota Hiace</i></p>	
<p>Midi-bus (about 26-32 seats) <i>(including Toyota Coaster and Nissan Civilian)</i></p> <p>Code M</p>	
<p>Large bus <i>(40-60 seats)</i></p> <p>Code L</p>	






Use a new line for each passing vehicle. So each line represents just one vehicle (bajaj or minivan or minibus or midibus (code M) or large bus (code L). Count or give best estimate of numbers of passengers noting men, women and children. Estimate if the vehicle is carrying significant quantities of goods or luggage relative to its capacity, using 0, S, M, or L.



Tanzania transport types. Sheet 3. Vehicle guide and notes

<p>Car Including estate cars but not SUVs like Rav4</p>	
<p>Jeep/Utility-vehicles (including Landcruisers)</p>	
<p>Pickups (including double cabs). The 'minivan' Suzuki pickup should be considered a pickup not a light truck Include Pickups with the 'Jeeps/utilities' class</p>	
<p>Light trucks Including Toyota Dyna Generally 2-4 tonne capacity</p>	
<p>Heavy trucks Over 5 tonnes. Include tankers and articulated vehicles as heavy trucks</p>	
<p>Use a new line for each passing vehicle. So each line represents just one vehicle (car or utility/pickup or light truck or heavy truck or one of the five coded vehicles (see next page).</p> <p>For cars, jeeps and pickups, count or give best estimate of numbers of passengers noting men, women and children. For trucks, just try to estimate total people on board without gender or age.</p> <p>For all vehicles, estimate if the vehicle is carrying significant quantities of goods or luggage relative to its capacity, using 0, S, M, or L (0= empty, S = relatively small load for its capacity. M = medium level of loading. L = large load.)</p>	



<p>Animal carts <i>Include oxen and donkey carts</i> Code = A</p>	
<p><i>Tricycle (for disability)</i> Code = D</p>	
<p>2-wheel tractor Code = 2</p>	
<p>Freight three-wheeler <i>Motorcycle three-wheeler</i> Code = 3</p>	
<p>4-wheel tractor Code = 4</p>	

For the 'other vehicles, again, one line per vehicle and include the code of the type of vehicle. A = Animal cart. T = Tricycle (disability). 2 = 2-wheel tractor. 3 = Freight 3-wheeler. 4 = 4-wheel tractor. You can add a new code if you come across a vehicle we have not listed (write your code on the sheet at the top). As with other vehicles count (or give best estimate) the different types of people travelling (men, women, child) and estimate the load relative to its capacity using 0, S, M, or L.



Interactions: Maintenance-Provision of Access for Rural Transport Services (IMPARTS)

Tanzania Commission for Science and Technology (COSTECH) Research Permit 2109-521-NA-2019-368

Invitation to participate

You are invited to tell us information about your travel experience on this road and the transport services that operate on them.

Purpose of the research project

The project aims to understand how transport services respond to changes in road condition (road investments or road deterioration due to lack of maintenance). The aim is to provide guidelines on making sure road planning, investments and maintenance are 'fit-for-purpose' for transport services, that provide essential mobility for rural people. Survey work will be completed in 2019 with the final report and guidelines reports prepared in 2020.

Why have I been chosen?

We wish to learn the views of:

- Many transport services users (differing by gender, age, work, travel needs, etc)
- Transport services operators (different types)
- People concerned with local development issues that are affected by roads and transport services (teachers, clinic staff, community leaders, etc)

What information will be collected from me and why is this relevant to the project?

We will collect information from users about their travel patterns and experiences of the various types of transport services used, and their views and preferences on these services

We will collect information from transport services operators about their operational patterns and their costs, and how their markets are changing and how this is influenced by the road.

We will collect information from influential members of the community about their views on how the various transport services are meeting the needs of the community for passenger and freight movements.

We will not be collecting or retaining personal information.

This anonymous information will be analysed to see the patterns emerging and any problems that have been identified. This will help us to make recommendations for future investments in roads and transport services.

What are the possible benefits of taking part?

Those concerned about having improved rural transport services will be able to voice their opinions, and in the medium-to-long term we hope the research conclusions will help the various authorities to provide (or facilitate) better and more suitable roads and transport services.

Will my taking part in this project be kept confidential?

Yes. All data collected and analysed will be anonymous. The information you give will be combined with the information provided by others, and will not be traceable to you.

Further information can be obtained from

Hans Mwaipopo (Researcher)

+255 767619785 or mwaipopohans@gmail.com

Stanley Soiti (Enumerator) +255 653819005

Robin Workman (TRL, UK) Email: rworkman@trl.co.uk

Consent form wording (local language version will be supplied)

- 1 I confirm that I have read (or heard) the information provided in the information sheet dated 28 July 2019 for the above study, I have had the opportunity to consider the information, ask questions and I have had any questions answered satisfactorily.
- 2 I understand that my participation is voluntary and that I am free to withdraw at any time without giving any reason. I understand that if I decide to withdraw, any data that I have provided up to that point will be included, if I agree to this.
- 3 I agree to take part in this research project.
- 4 I understand that my data will be anonymous and that my anonymised data may be used in future research.

Participant's signature or mark.

Date

Researcher's signature

TRL



#

Interactions: Maintenance-Provision of Access for Rural Transport Services (IMPARTS)

Tanzania Commission for Science and Technology (COSTECH) Research Permit 2109-521-NA-2019-368

Mwaliko wa kushiriki

Unakaribishwa kutueleza uzoefu wako wa kusafiri na utolewaji wa huduma za usafirishaji kwenye barabara hii

Madhumuni ya utafiti

Utafiti huu unakusudia:

- Kuelewa jinsi huduma za usafirishaji zinavyojibu mabadiliko ya hali ya barabara (uwekezaji wa barabara au uharibifu wa barabara kwa sababu ya ukosefu wa matengenezo).
- Kutoa miongozo ya kuhakikisha mpangilio wa barabara, uwekezaji na matengenezo sahihi kwa ajili ya huduma' ya usafirishaji unaowezesha watu wa vijijini uwezo wa kufika kwenye maeneo muhimu kwa urahisi .

Utafiti utakamilika mnamo 2019 na ripoti ya mwisho na ripoti za miongozo zitaandaliwa mnamo 2020.

Kwa nini umechaguliwa

Tunataka kujua maoni juu ya:

- Kundi la watumiaji wa huduma za usafiri walio wengi (Jinsia, rika, kazi, au mahitaji ya kusafiri)
- Watoa huduma za usafirishaji
- Watu wanaohusika na maswala ya maendeleo ya maeneo husika na wanaathiriwa na huduma za usafirishaji (waalimu, wafanyikazi wa kliniki, viongozi wa jamii, nk)

Ni taarifa gani zitakazokusanywa kutoka kwangu na kwa nini zinafaa kwa utafiti huu?

Tutakusanya habari kutoka kwa watumiaji wa barabara, barabara wanazotumia na uzoefu wao juu ya huduma

za usafiri wanaotumia. Tutakusanya habari kutoka kwa waendeshaji wa huduma za usafiri juu ya mifumo yao ya uendeshaji na gharama zao, na jinsi masoko yao yanavyo badilika kwa kulingana na hali ya barabara.

Tutakusanya habari kutoka kwa washiriki wenye ushawishi kwa jamii juu ya maoni yao juu ya jinsi huduma za usafirishaji katika maeneo husika, kama yanakidhi mahitaji ya usafiri wa abiria na mizigo.

Hatuta kusanya au kuhifadhi taarifa za mtu kibinafsi.

Taarifa hizi zitachambuliwa ili kubaini matatizo yaliyopo na hatimaye kutusaidia kutoa maoni kwa uwekezaji wa siku zijazo katika barabara na huduma za usafirishaji.

Je ni faida gani zitakazotokana na ushiriki wako?

Wale wanatohiji huduma bora za usafiri vijijini wataweza kutoa maoni yao, ambayo ama kwa muda mfupi au mrefu yatasaidia katika utafiti huu kufikia hitimisho ambalo litasaidia viongozi mbali mbali kutoa (au kuwezesha) kupata barabara ambazo zitawezesha kupatikana kwa huduma bora za usafiri.

Kushiki kwangu kwenye utafiti huu kujtabaki siri?

Ndio. Takwimu zote zilizokusanywa na kuchambuliwa hazitajulikana. Taarifa zote ulizo toa zitajumuishwa na taarifa za wengine, na bila yaw ewe kujulikana.

Kwa taarifa zaidi, unaweza kupata kwa:

Hans Mwaipopo (Mtafiti)

+255 767619785 au mwaipopohans@gmail.com

Stanley Soiti (Mtafiti msaidizi) +255 653819005

Robin Workman (TRL, UK) Email: rworkman@trl.co.uk

Fomu ya kukubari kwa hiari

1. Nadhibitisha kwamba nimesoma (au kusikia) taarifa zilizotolewa kwenye karatsi zilizochapishwa 16/10/2019 za utafiti tajwa hapo juu. Nilikua na nafasi kuziangalia au kusikiliza, kuuliza maswali na nimejibu maswali yote kikamilifu
2. Natambua kwamba ushiriki wangu ni wa kujitolea na naweza kuufuta muda wowote bila kutoa sababu yeyote. Natambua ya kwamba kama nitaamua kujitolea, taarifa nilizokupatia mpaka muda nataka kujiondoa zitajumuishwa endapo tu nitakubari
3. Nakubariki kushiriki katika utafiti huu
4. Natambua kwamba taarifa zangu zitakua siri na zinaweza kutumika katika tafiti zijazo.

Saini ya Mshiriki/Alama

Tarehe

Saini ya Mtafiti