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Creating Traction: upgrading footpaths to motorcycle taxi accessible tracks in rural Sub-Saharan Africa

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Upgrading rural footpaths to motorcycle taxi tracks in rural sub-Saharan Africa

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Motorcycle taxis have rapidly expanded throughout sub-Saharan Africa, providing many with affordable improved access to essential services. This paper reports on a project in 2021 to convert footpaths into motorcycle taxi tracks in central Liberia. Its community-based approach was documented in a manual to train future contractors in both the technical and social dimensions of track construction. The construction methodology is presented and discussed. It gives governments and donors a unique and significant opportunity to address isolation, improve the livelihoods of rural people and create more employment opportunities for Africa's young population.

1. Introduction

The MCT (MCT) revolution in sub-Saharan Africa started in its cities and spread quickly into rural areas. With it came the welcome positive impacts on socio-economic rural development: improved access to local markets, healthcare and schools. While MCTs may not be a long-term solution in cities, where mass transit is the preferred solution, in rural areas it is and likely will remain a dominant force (Ehebrecht, Heinrichs & Lenz, 2018).

In many African countries, MCTs – often referred to as *okadas* in West Africa or *boda-bodas* in East Africa – are responsible for the majority of transport movements of both people and goods in rural areas. A 2017 transport diagnostic study conducted in Liberia's neighbour Sierra Leone found that 60–95 % of mechanised and motorised transport of people and goods in rural areas now takes place by MCT (Mustapha, Peters & Tunis, 2017). That study looked at unpaved rural roads readily accessible to conventional modes of transport, so these percentages are likely to be even higher (approaching 100 %) for off-road communities.

Porter (2013) describes the expansion of MCT services as the most dramatic change in rural transport services for the many off-road communities in Africa. The key beneficiaries of this rural phenomenon are among the most marginalised and most isolated: semi-subsistence farmers. Additionally, the MCT sector provides jobs to often poorly educated youths in rural areas, expanding their choices beyond either farming or leaving for the urban areas. Spatial isolation and poverty are cause and effect (Bird, McKay & Shinyekwa, 2010). Reduce the first and the second will follow (Bird et al. 2002), and physical infrastructure and transport means are key (Kanbur & Venables, 2005).

With their immediate departure and point-to-point services, MCTs are highly valued by their users. Furthermore, small MCTs can navigate the often extensively neglected unpaved road networks – even during the peak of the rainy season when conventional taxi cars or mini-buses struggle. With nearly 70% of Liberia's unpaved road network in poor or very poor condition, and only 10% under active maintenance contract, mobility is a critical attribute for any vehicle (Iimi & Rao, 2018a).

In 2018, a World Bank study estimated that nearly 60% of Liberia's rural population live at least 2 km from an all-weather road. With a rural population of 2.4 million, this translates to over 1.4 million people who have to walk at least 2 kms, and often much further, to a public transport pick-up point, frequently with heavy head loads. Add that to the state of the rural road network and it

should come as no surprise that the market response to the deep rural transport challenges is the MCT.

While the long-term answer to rural transport challenges cannot be exclusively the domain of the MCT, there is a unique place for them. The domain of the MCT is in linking the communities who live and work beyond the national road network on the euphemistically named 'first mile' network of footpaths connecting farmsteads to homesteads and settlements to roadside.

2. First generation

Until recently, the spread of the MCT phenomenon in Liberia has been a purely market-driven and largely unregulated development. In 2016, one of the authors of this paper published a paper in ICE *Proceedings* on a pilot project that was about to be initiated (Jenkins & Peters, 2016). In 2017, approximately 25 km of rural footpaths – from farm-to village-to roadside – were upgraded to MCT tracks in Nimba County in Northern Liberia, as part of a Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) funded project. This proved to be a cheap and cost-effective intervention, able to supplement or in some cases even replace conventional rural road infrastructure construction.

A three-year Economic and Social Research Council/Department for International Development (ESRC/DFID) funded study by Swansea University of this intervention found a significant and positive impact on rural lives and livelihoods, without any significant negative effects. The key findings are briefly listed below, illustrated with quotes from the rural dwellers. The study's full findings and methodology can be found in Jenkins, Peters & Richards (2020).

It is important to note that improving footpaths to tracks or trails is not something new. Rural communities all over the world are investing significant resources in maintaining and improving access and reducing isolation, often as self-help initiatives. Sometimes external funding are supporting these endeavours, particularly in challenging terrain where it can be beyond the capacity of communities to do this themselves.

To illustrate, in 2002 IT Transport produced *Footpaths and Tracks: a field manual for their construction and improvement* capturing the lessons and methodologies of many decades of experience with this from around the world. What has changed since the time of that publication is the rapid increase of the MCT across the African continent, making other forms of intermediate transport an increasingly rare sight on these rural tracks. The below-described projects and manuals are specifically tailored towards the MCT, although obviously other forms of intermediate transport can use the tracks as well.

2.1. Impact – from subsistence farming to growing a surplus

Before the intervention, farmers in the two village clusters now connected with MCT tracks indicated that they could produce more for markets but struggled to get the extra produce there because of transport limitations. As one said, 'I can't carry all my produce to market, so some of it spoils'. Where farmsteads and villages are connected to the main road network by no more than a footpath, head loading is the only option and there is a limit to what can be carried.

MCTs however can carry surprisingly large quantities and are able to transport it quickly. As one villager said, 'When we must walk to Gogoin we can take 2 or 3 plantain heads and it is about an hour and a half one way. The motorbike can take 25 plantain [heads] easily'. While the widely used 125cc MCTs are rated for an operator and one passenger, it is quite common to see MCTs with two or even three passengers. Similarly, it is not uncommon to see MCTs passing with bags of rice or cement weighing 200 kg in total or more.

Average travelling speeds recorded by the researchers sitting on the back of an MCT on these tracks via satellite positioning are just above 20 km/h. This is up to six times faster than walking with a headload. In the two village clusters that benefitted from the track intervention, walking and head loading to access markets dropped from 96% to 17% (Gogoin cluster) and from 100% to 61% (Keinpea cluster), now that farmers and market women were able to take MCTs.

Travel times were also reduced by 40–50% along the two clusters, cutting down journeys by several hours. Traffic counts on the Keinpea village cluster track showed 24 MCTs passing on a non-market day and 39 on a market day. This represents more than 9500 MCT movements per year. The Gogoin village cluster track, terminating at a small village deep in the forest, saw over 5300 MCT movements on an annual basis.

The tracks and MCTs have helped farmers to become more integrated in the market/cash economy and already facilitated agricultural growth. As one said, 'We increased the size of our farms because the produce can now be carried by the motorbikes. Before the track was built the produce got spoiled because everything had to be head loaded'. Because farmers typically need several years or farming cycles to fully respond to improved accessibility, a further increase in both MCT movements and cash crop production is expected.

2.2. Impact – Improved access to health and education

MCT transport has enabled rural dwellers to access health services quickly and relatively conveniently. Prior to the construction of the tracks, the villagers either had to walk when seeking medical attention or be carried by hammock for more severe cases. In both village clusters the numbers indicating that they travel to healthcare facilities by foot have dropped by 60 to 70%, with most of them now indicating that they call for a MCT. As one said, 'Because of the tracks, we don't die of health problems because [MCTs] can come and take [sick people to healthcare]'. Pregnant women seem to have benefitted in particular. One woman said, '[MCTs] rush pregnant women to the health centre'.

Track construction has also improved access to education. In many rural areas in sub-Saharan Africa, school children take MCTs to and from school, but in rural Liberia this is not (yet) common practice due to financial constraints. However, more income through the marketisation of farming produce has allowed families to pay for school fees and/or stationary.

Teachers interviewed also noted an increase in attendance since the completion of the tracks. One said, 'Before the track was made, there were hardly any children in school on a Monday because they were all busy helping their parents to get the produce from the farms to the road side, to get it picked up for the Graie market ... [but now] the kids just help to get some of the produce to the track-side and then go to school because the motorbike will now pick up the load. We have full classrooms on Mondays now'.

Improved access also makes rural areas more attractive for government personnel, such as rural nurses and teachers, to settle down and work (Iimi & Rao, 2018b).

2.3. Impact – gender and environment

Women are major beneficiaries of labour-based track construction and MCTs. Head loading is often a task done by women (and children) and the MCTs have made this heavy and time-consuming activity increasingly redundant. Women can now travel to local markets more conveniently, quicker and with larger quantities of produce.

Furthermore, in the communities served by MCTs, more women were getting involved in (part-time) petty trading, using the MCT as a courier service for bringing in consumer items normally found only in urban centres (Jenkins et. al., 2019). One woman said, 'The riders have helped us greatly because [we] can just send them to town to buy all the goods we need in town'. They even use the MCT operators as short-term money lenders, bypassing the traditional middleman or village trader. As one said, 'The riders even loan us if [we] are without money at a particular time'.

A well-documented fact is that the opening of forested areas and primary rainforest by rural roads often leads to increased deforestation by illegal logging companies, landless farmers or large agro-businesses. None of these issues were observed in the two village clusters. The tracks were designed in such a way that no vehicles with four or more wheels could enter, mainly because the bridges constructed were too narrow for anything wider than an MCT or motor-tricycle. The harvesting and transportation of non-timber forest products (including bush-meat) could have easily

increased along the tracks, even to an unsustainable level, but data showed that this was not the case, perhaps because the rural dwellers now obtained sufficient income from their agricultural activities.

Upgrading rural footpaths to MCT-accessible tracks will bring a number of well documented socio-economic benefits to the track communities. However, given that all MCTs currently operating in Liberia are conventional internal combustion engine vehicles, the further roll out of tracks and thus the further expansion of the operating areas for MCTs will have a negative impact on the climate in so far that these MCTs run on carbon-dioxide-producing fuels.

There may be an opportunity for the tracks to spearhead the introduction of e-mobility, and more specifically, e-MCTs. The authors are currently assessing this and have linked up with an e-mobility provider active in Liberia and other sub-Saharan countries to run a trial. There are various proof-of-concept or pilot initiatives taking place all over the African continent (Black et. al. 2018). Most of these initiatives tend to focus on more urban setting due to higher demand and therefore higher turnover. To what extent this is compensated for by the advantages that more rural areas have to offer – cheap land available for solar panel farms and typically higher fuel costs, particularly in more inaccessible terrain – remains to be seen.

2.4. Impact – road safety and MCTs

The spread of MCT transport has resulted in a significant increase in the number of traffic accidents. However, since the tracks have been opened, very few if any accidents have taken place. As one villager said, ‘Since the track was built there have been no accidents whatsoever. Safety wise the track is much better than the main road and the bike riders like it because there are no potholes, so the bikes do not get spoiled’.

There are several reasons for the road safety record: MCT riders do not have to compete with more conventional means of transport; riders operating along the tracks tend to be familiar with the route and conditions, so know where to slow down and speed up; and the tracks are in a good condition and can be easily maintained using local labour and materials. Finally, the tracks have been designed for intermediate forms of transport, with sufficient cleared areas on both sides to give room for pedestrians.

3. Next generation

3.1 A village track design and construction manual

The positive outcomes and impact of the Nimba County tracks triggered the interest of international donors on which the country is still largely depending for its road rehabilitation and maintenance programmes. The Swedish International Development Cooperation Agency (SIDA) agreed to fund a further 20 km of tracks, with GIZ financing an additional 5 km of tracks, in 2021. These tracks were constructed in Bong County in a more undulating, thus more challenging terrain, requiring a high number of water crossings (Figure 1).

Furthermore, the implementing partner, Lofa Integrated Development Association (LIDA) – a Liberian not-for-profit organisation experienced in community-based maintenance of feeder roads and the local research partner for 2015–2018 ESRC/DFID impact study – used a community-based organisation (CBO) approach (see below). The ESRC/DFID awarded a second one-year grant to put together a track design and construction manual, documenting both the technical and the social dimensions of the track construction methodology.

The design and construction manual describes how a CBO-based approach can be adopted in the planning, implementation, and maintenance of the tracks. Its formulation has run concurrently with the Bong County pilot project, effectively documenting what has been tried and tested. In October 2021 SIDA agreed to move beyond this pilot project to a full project, funding another 200–300 km of tracks for 2022. This quantity requires the training of local contractors (either from the private sector or local non-governmental organisations) in both the technical and engineering aspects of track construction and the social aspects of the CBO-based approach.

3.2 A community-driven approach in track construction

The model described in the manual uses a structure composed of three parties: the donor or source of funding (either an international development agency or the government); the client (in the case of Liberia, its Ministry of Public Works); and a main contractor (a private sector road construction contractor or non-governmental organisation). In conventional feeder road construction throughout the continent, the main contractor invariably sub-contracts most of the labour-based work to a labour only sub-contractor. This approach is well understood.

When it is applied to the track concept, the source of funding and the client remain the same. The contractor, however, is a hybrid, with both an engineering and a community development (CD) capacity. The CD capacity is responsible for establishing a representative community body, a CBO, which it then trains as a sub-contractor. The sub-contractor, the CBO, arranges for labour as needed, ensures there is a corridor for the track, resolves disputes and arranges for locally available construction materials (wood, sand, and rock) to be provided free of charge.

In return the contractor pays the labour, provides construction expertise, imports construction tools and some materials, and trains the CBO in elementary project management skills. By the time the track has been constructed, the CBO is expected to be a functional, capacitated, legal and registered body able to promote and host development initiatives and able to mobilise resources from within its geographic boundary sufficient to maintain the improved access investment.

Two themes are mainstreamed throughout the project cycle: gender sensitivity and post-construction maintenance. They are discussed in more detail below. Gender sensitivity, that is an equitable sharing of benefits (including those associated with the planning and implementation phases), requires a dedicated effort from the contractor. A post-construction maintenance strategy, particularly mobilisation of maintenance resources, requires a deep level of community ownership. To achieve both requires continuous and strenuous effort.

Community development, as it relates to the implementation model, is a process that starts with sensitisation to ensure that communities have a common understanding of the project. It then moves on to mobilisation, when individual track projects have been identified and host communities start to contribute and progressively engage with construction related activities. It finishes with a functional representative body, the CBO.

3.3 Track project selection

Tracks are most suited to a terrain that is relatively flat, the hydrology simple, and possess a population density that can provide 30–40 workers each day. Geographic information systems and remote-sensing technologies can be used to identify areas within counties where these conditions exist. Track effectiveness is further amplified when it connects to a recently rehabilitated and continuously maintained feeder road. Superimposing the first set of conditions, topography and demographics, over the second, a functional road network, creates ‘track-friendly zones’. County and district authorities using their development plans select the best suited zones. These selected zones are the clusters from which track projects are selected.

A rapid physical assessment is undertaken along all principal pedestrian paths within each cluster. Data, gathered during the assessment, is used to determine a ranking of the track candidate footpaths. The tool used to rank paths is the multi-criteria analysis (MCA) (Dalal, Mohapatra & Mitra, 2010; Kanuganti et al., 2017; Ndume & Mlavi, 2017.) For the ranking, the MCA uses the concept of cost effectiveness of a project. This is defined as:

$$\text{Cost effectiveness} = \frac{\text{number of people served by project}}{\text{cost of project}}$$

On its own cost effectiveness is inadequate. It does not reflect the social or economic attributes along each path e.g., the presence (or absence) of market, education and health facilities.

The influence of social and economic attributes is captured and quantified using a simple MCA, with the sum of the socio-economic attributes called the 'benefit factor'. The benefit factor is multiplied by the cost effectiveness. The product of these two metrics gives a number, the ranking index. The bigger the ranking index the more important the footpath link:

$$\text{Ranking index of link} = \frac{\text{population served by link} \times \text{benefit factor of link}}{\text{cost of link improvements}}$$

The ranking exercise is undertaken at a workshop attended by county and district authorities, and community representatives from each path assessed (Figure 2). The outputs of the ranking exercise are studied by all key stakeholders and the track projects are selected. Note that the specific weighting of the various social and economic attributes is not necessarily fixed, but can be adjusted to reflect the interests of the key stakeholders and beneficiaries, assuming a consensus can be reached.

3.4 Track project implementation – planning and preparation

The contractor's engineers then undertake a detailed survey on each of the footpaths selected for upgrading. The surveys are used as the basis of detailed designs. These are then quantified. Simultaneously the contractors' mobilisers initiate community mobilisation, which includes gathering data on the availability of local labour (disaggregated for gender and reflecting seasonal changes due to changes in rural communities' main livelihood activity: farming). This labour profile is then passed on to the engineers who formulate a workplan. In turn, the engineers pass over to the mobilisers the quantities of materials required for the designs, who then, together with the communities, secure access to the materials.

The CBO structure is divided into two, a board with representatives from women's and youth groups and traditional leadership, and a management committee (MC), with members selected by each village (Figure 3). The MC members tend to be young and active, are literate and committed. Females are fairly represented in both the board and the MC. With the CBO positions filled, the engineers and the mobilisers hold a CBO training workshop where the basics of project management are introduced, and roles and responsibilities explained. The workshop concludes with the signing of a community contract (CC) between the contractor and the CBO. This document contains the commitments of both parties and details of the works required along a stretch of the track.

The CBO training workshop is followed by the commencement of the first CC. The first CC is used for training, introducing the CBO MC to track construction techniques and the board to its broader community engagement role. Subsequent community contracts are incremental until the track is completed. Each contract, with the continuous mentoring by both the mobiliser and engineering team of the CBO and its efforts, permits the CBO to take on increasing levels of responsibility.

3.5. Gender equity and maintenance

The two mainstreamed themes, gender equity and maintenance, are emphasised throughout the CBO capacity building process. The first through an agreed gender strategy and an appropriate labour recruitment protocol. The second through maintenance management aimed to achieve a competent understanding of the resources that need to be mobilised on a yearly basis to maintain the track investment.

Evidence shows that improved access via village tracks benefits both men and women, but not to same extent and in the same manner (Jenkins et. al. 2019). A gendered understanding of the benefits (and negative consequences) is important. With gender equity mainstreamed throughout the project cycle of the track construction, the benefits of having improved access will not only become clear at track completion, but also during the planning and implementation phases.

Moreover, with proper gender-mainstreaming, the tracks are likely to provide further and enhanced benefits for girls and women, for instance by breaking down barriers for girls to pursue more technical occupations (see below).

Gender mainstreaming for the track construction proved to come with its challenges. Despite the fact that community mobilisers of the implementing agency explained to the communities that both men and women can participate, within two months after the initiation of the track construction project, it became clear from the daily worker sheets that the majority of labourers and supervisors were male.

Communities associated construction activities with male labour. This was also observed during the first track project, with one of the interviewees (a widow from a deep rural village) stating: 'I have worked for 11 days on the first [track] bridge; 9 days on the second bridge and 10 days on third bridge, plus another 15 days on the track construction. I definitely know how to build and maintain these bridges in the future. You can learn all you need to know in about a week. I would really like to build on my experiences by doing other jobs in construction. This bridge construction made me understand that in any technical job, women can do as good a job as men. Yes, they tend to give these jobs to men because men are stronger, but I just kept asking and in the end they gave in [and allowed me on the bridge team]. Some of the other women even laughed at me, wondering if I am a 'man-woman'. Really, women could build such a bridge all by themselves, that is what I believe. We can even operate a power saw,' (Jenkins, et al. 2019:142).

For the Bong County tracks it was only after a gender mainstreaming specialist was brought in to assess the situation and come with a proper gender mainstreaming strategy that things started to change for the better.

Gender mainstreaming for the track methodology uses a variety of participatory methods to ensure that women's and men's issues, concerns and experiences are recognised. Because gender mainstreaming cuts across so many different issues, it is all too often viewed as the responsibility of everyone, and in doing so, it becomes the responsibility of no-one. Therefore, each contractor must have a gender specialist or gender focal person in its team for each cluster in which it operates in.

A key advance of the local labour-intensive approach, as opposed to using imported labour, is that more of the project's overall budget ends up within the host community. Furthermore, a task-rate is established for the various activities and paid to the worker upon completion, which ensures that productivity rates remain high but also gives the workers (males and females) a degree of freedom: for example, two workers may decide to share a one-day task so that they finish by mid-day, leaving time for other activities, such as farming. It is estimated that for every 5 km built US\$25,000 is earned in wages for the labour.

Community savings groups are established to take advantage of the cash injected into the track community. However, men and women do use the additional income generated by working for the track project differently, with women typically using it for activities and items associated with reproductive tasks and responsibilities, such as the preparation of food, child care and paying school fees for their children. A higher percentage of women working on track construction may result in a larger and more positive development impact of the track funds, perhaps for similar reasons why microfinance projects often tend to focus on women (Nicholas & WuDunn, 2009).

A coherent maintenance management strategy is essential. Traffic and weather combine and quickly degrade the carriageway. Flowing rainwater causes erosion creating potholes and ruts. Flash floods can damage bridge structure. The shape of the carriageway and the size of the side drains are designed to limit damage but cannot prevent it. Proactive carriageway and side drain repair, maintaining positive gradients for the flow of water is much cheaper than reactive maintenance that addresses spots that have created a bottleneck.

Bridge substructures are designed to resist erosion caused by fast flowing water produced by heavy rains and flash flooding. But the bridges and the rock protection placed around and alongside the bridge foundations are not indestructible (Figure 4). Immediate repair is needed to repair erosion and reinstate the rock protection. Maintenance at bridge sites requires a rapid response. In

Liberia failure of bridge crossings are invariably the result of water induced erosion of the bridge foundations.

The challenge for the CBO track managers, unlike the largely donor funded feeder-road maintenance, is that the cost of track village maintenance is to be resourced exclusively by the track-using communities. A track maintenance strategy identifies the necessary maintenance interventions timing of activities, the responsibility for managing and implementing various aspects of the plan and resource mobilisation (voluntary labour, local resources and/or cash) to finance maintenance.

It is estimated that for a 5 km track, 500 worker days are required every year for regular routine maintenance. In monetary terms this is nearly US\$2,500. A typical population for a 5 km track is 500. So, the cost of maintenance is around US\$5/person served/year.

4. Track construction

When the footpaths that will benefit from being upgraded to village tracks have been selected, the engineer conducts a detailed assessment. The detailed assessment involves the following components.

- A field survey, collecting field data sufficient to permit a detailed design.
- Transferring and processing data transfer, into a strip map and populating the bill of quantities.
- Structural designs for wherever the track crosses water – either a river or wetlands.
- Quantification and costing, with each intervention – clearing, earthworks, materials supply, and bridging structures – a series of productivities are associated. The task rate is the work that can be achieved by an average labourer in a working day.
- Works programming, with the various interventions – clearing, earthworks and structures, to be programmed in a detailed and fully resourced works implementation plan. For the programming of the construction work the engineer is guided by the labour availability data supplied by the cd mobiliser for the track.

The method of measurement and associated payment uses as task rates (productivity per worker day) where workers are paid based on work done rather than dayworks, where workers are paid based on hours work. A characteristic of using dayworks as a means of payment is it removes incentive. However, using the task rate method of payment requires more management and oversight from the contractor since daily tasks need to be defined at the beginning of the activity and thereafter closely monitored to ensure the daily tasks are performed adequately both in terms of quantity and quality.

The below activities are required for track construction (Figures 5 -7). For each of these a bill of quantities is required.

- Clearing and grubbing – this includes the clearing of all vegetation, topsoil, tree-stumps and roots within the cleared strip. The materials are placed outside of the cleared strip. Beforehand it is important to record the chainage where vegetation density changes. This information should be recorded on field notebooks and transferred to the strip map when the detailed assessment is finished.
- Earthworks – this includes the levelling of the track, excavating side drains and shaping the cross section, hauling material from borrow pits to sections that require extra fill, importing a wearing course gravel where the exiting soil is soft and finally, compaction of the levelled track bed bench and subsequent layers.
- Bridgeworks – all structures require local materials, including gravel, boulders, crushed rock, and sawn timber. Gravel, broken rock or boulders are used for bridge foundations and abutments (Figure 5), with sawn timber used for the bridge superstructure (Figures 6 and 7). Trees for this

are made available by the community as part of its contribution to the track construction cost. Hard wood is preferred because of its resistance to decay and superior strength.

5. Conclusions

MCTs have fundamentally changed rural lives and livelihoods in sub-Saharan Africa. As Gina Porter puts it, 'For the first time in African rural transport history many — even very poor — rural dwellers may have the potential to summon transport when they need it. For people living in remote areas the consequent new levels of connectivity amount to a transport revolution because, even if they cannot afford transport on a regular basis, many can now obtain it in emergency contexts and perceive this to be of crucial importance to their well-being,' (Porter, 2013:27).

The advantages of MCT transport in rural areas are so significant that, even on roads that are accessible to conventional means of transport (shared taxis, pick-ups, mini and midi-buses, etc.), they have now replaced these in significant numbers. A 2017 transport diagnostic study conducted in Liberia's neighbour Sierra Leone found that 60–95% of transport of people and goods on feeder roads in rural areas now takes place by MCT (Mustapha, Peters & Tunis, 2017).

Ironically, the smaller payload of MCTs, often highlighted as a constraining characteristic, in many cases suits the demands of rural dwellers better (Figure 8). A semi-subsistence farmer typically may have only a few bags of surplus produce he or she intends to sell at the local market, hardly requiring the payload offered by more conventional four-wheeled means of transport. Given the omnipresence of MCTs in rural areas, there seems to be an opportunity to add a category of roads to the classified road network that sits below the feeder road: MCT tracks.

This paper started with a short overview of the findings of a pilot project in northern Liberia, where various rural farm-to-village-to-roadsides footpaths were upgraded to MCT tracks. It then described efforts to capture this intervention or methodology in a manual, following a second pilot project in central Liberia. The manual, describing both the technical and engineering dimensions of track construction as well as its community-based approach, is now acting as training material for contractors that will be involved in a much larger track construction programme, funded by SIDA, that is taking place in the north-western part of Liberia. Learning takes place daily, reflected in a continuous adaptation and updating of the manuals.

However, the manual's authors see no reason why other donors and governments in other sub-Saharan countries cannot equally embark on a programme of MCT track construction to address deep rural isolation. As it was put in a short informative video on the track construction project, 'Once the wheels start rolling on these tracks, momentum is created that leads to a cycle of progression,' (Healey, 2021).

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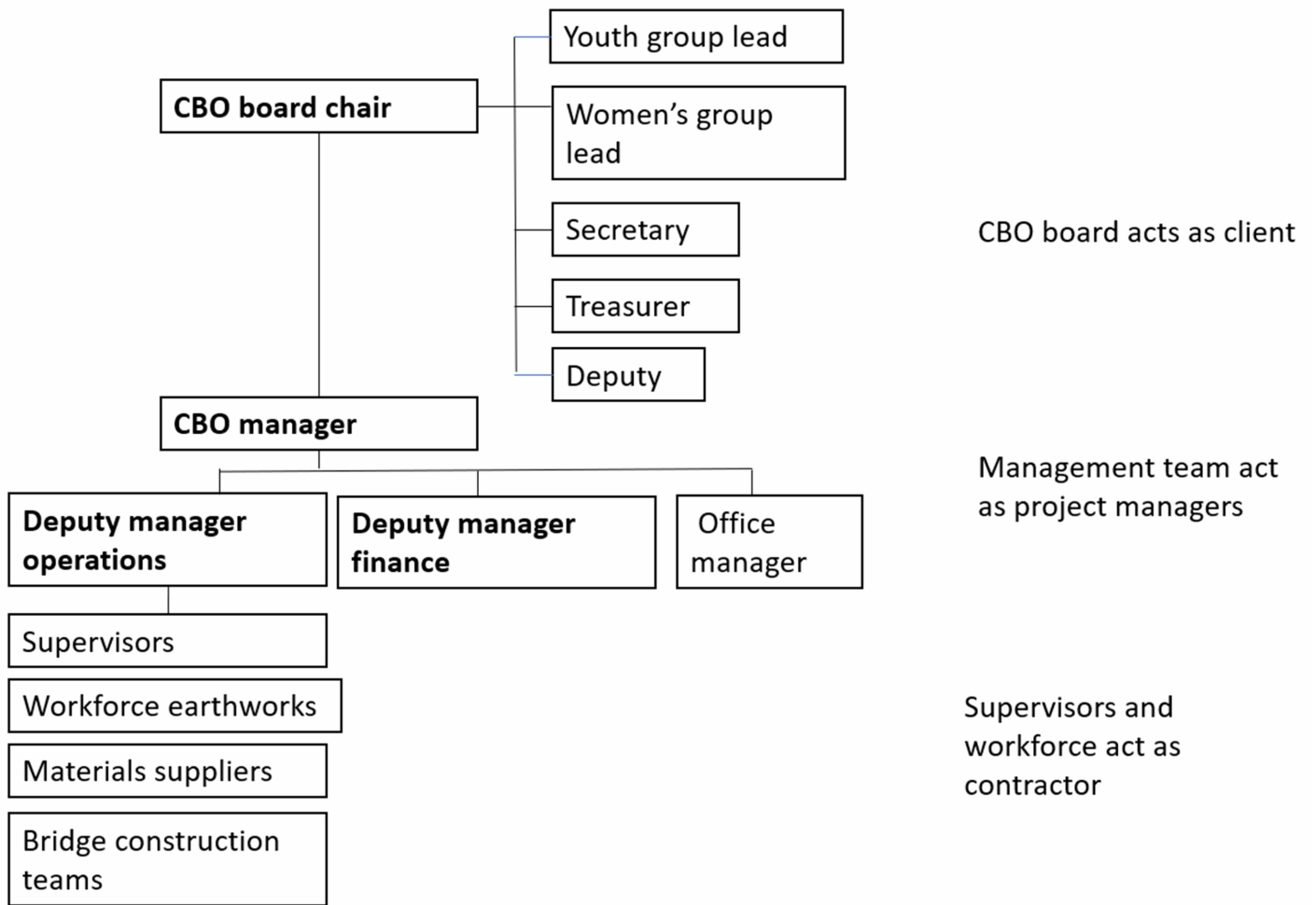
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File	Caption
Figure 1 SF.jpg	Figure 1. New motorcycle taxi track close to completion
Figure 2 SF.jpg	Figure 2. Announcement for multi-criteria analysis track selection workshop
Figure 3 SF.jpg	Figure 3. Community-based organisation structure
Figure 4 SF.jpg	Figure 4. Male and female workers collecting boulders for bridge abutments
Figure 5 SF.jpg	Figure 5. Bridge abutments under construction
Figure 6 SF.jpg	Figure 6. Hardwood bridge beams ready for launching
Figure 7 SF.jpg	Figure 7. Bridge beams in place
Figure 8 SF.jpg	Figure 8. Fully laden motorcycle taxi riding on new track

File name	Sizing: single- or double-column width (>1200/2100 pixels)?	Recommend crop: yes or no?	Recommend redrawing: yes or no?	Instructions to arthouse
Figure 1 SF.jpg	Single	No		
Figure 2 SF.jpg	Single	No		

Figure 3 SF.jpg	Single		Yes.	Standard structure chart.
Figure 4 SF.jpg	Single	No		
Figure 5 SF.jpg	Single	No		
Figure 6 SF.jpg	Single	No		
Figure 7 SF.jpg	Single	No		
Figure 8 SF.jpg	Single	No		














SWEDEN

REPUBLIC OF LIBERIA
Liberia Swedish Feeder Road Project III
MINISTRY OF PUBLIC WORKS


REPUBLIC OF LIBERIA

**CONSTRUCTION OF ACCESS TO OFF-ROAD VILLAGES
THROUGH COMMUNITY DRIVEN DEVELOPMENT
PROJECT**

**A STAKEHOLDER WORKSHOP FOR THE SELECTION OF
BENEFICIARIES COMMUNITIES' PRIORITIZED
FOOTPATHS**

TARGETED REGION: OFF-ROAD VILLAGES IN PARTS OF
SALALA, SANOYEA AND YANEQUELLEH DISTRICTS

VENUE: LUTHERAN COMPOUND, TOTOTA, BONG COUNTY

DATE: APRIL 13, 2021

FUNDED BY: LIBERIAN SWEDISH FEEDER ROADS
PROJECT (LSFRP 3) & GIZ –CAPACITY DEVELOPMENT IN
THE TRANSPORT SECTOR (CDTS)

ORGANIZED AND IMPLEMENTED BY: LOFA INTEGRATED DEVELOPMENT ASSOCIATION (LIDA)



