



Prepared for Uttarakhand Forest
Development Corporation (UKFDC)

Preliminary Trail Exploration Study to test the viability of Mountain Biking as a form of Eco-Tourism in Munsyari, Uttarakhand, in the Himalayas

15th September – 3rd October 2015



SECTION 1

Introduction

Study Team



This report has been produced by Rowan Sorrell and Sam Burgess, two Mountain Bike trail design experts from the UK who were assisted during the Trail Exploration trip by MTB experts Pavel Hornik from the Czech Republic, Richy Taylor from Scotland, Herve Doulat from France, Andy Lloyd also from the UK and Project Liaison Officer Michael Maria Joseph from India. All of the international team volunteered their services to aid the exploration of this potential new region for mountain biking.

The members of the group chose to volunteer in the interest of potentially developing the sport which they are very passionate about into new territories and cultures, and for the enjoyment associated with exploration.



Rowan Sorrell

One of the leading Trail Experts in Europe, Rowan has designed many stand out trails in the UK and Europe and developed Bikepark Wales one of the most significant Mountain Bike Facilities in Europe.

Sam Burgess

Working with Back on Track, Sam has gained a great deal of experience working on trails around the UK both in terms of their planning and design and also their construction methods.

Pavel Hornik

The founder of one of the best designed trail centres in Europe, Pavel manages its operation and development and see's people travelling from right across Europe to ride his trails at the leading Czech MTB centre.

Richy Taylor

Richy has been working around bikes for many years in different venues across Europe, recently he has been guiding groups in Saas Grund in Switzerland and helping the resort to develop their Mountain Biking offer.

Herve Doulat

An experienced filmmaker and mountain biker, Herve has travelled much of the globe with his bike riding and creating films that capture the true essence of MTB adventure.

Andy Lloyd

One of the UK's leading Mountain Bike Photographers, Andy has worked with many international publications and visited many venues and trails around the world.

Together the team conducted the survey, explored the region and created film and photography content to document the process and promote the region.



Acknowledgements

First and foremost, the study team would like to thank the Chief Minister of Uttarakhand Sri. Harish Rawat for his enthusiasm towards the sport of Mountain Biking, his vision for Munsyari and for his continued support to the project. We would like to thank the Chief Secretary of Uttarakhand Sri. Rakesh Sharma and Forest Minister of Uttarakhand Sri. Dinesh Aggarwal for their contribution in successfully completing the trail exploration and the support extended.

We thank the Chairman of Uttarakhand Forest Development Corporation, Sri. Harish Dhami who was a pillar of support during the trail exploration and showcased his enthusiasm towards the sport by ensuring all the backend facilities. We also thank the Principal Chief Conservator of Forests, Uttarakhand Sri. Srikant Chandola for his continued support to the project from its very beginning. We thank Managing Director of Uttarakhand Forest Development Corporation Sri. S.T.S Lepcha for his kind support all along.

This trail exploration study would have been almost impossible without the guidance and support of the General Manager (Production) of Uttarakhand Forest Development Corporation Sri. Vineet Kumar Pangtey and we thank him for all his efforts. We also like to thank the General Manager (Kumaon) of Uttarakhand Forest Development Corporation Sri. J.S Suhag for his kind support.

We would also like to extend our sincere thanks to the following list of people who contributed in various capacities to the trail exploration program and without each of whose contribution a successful completion of this trail exploration was impossible.

- Divisional Forest Officer, Pithoragarh Forest Division, Sri.I.P Singh
- Ex. Sub Divisional Officer, Pithoragarh Forest Division, Sri. Manohar Singh Semiya
- Sub Divisional Officer, Pithoragarh Forest Division, Sri. Anil Kumar Shrivastav
- Managing Director of Kumaon Mandal Vikas Nigam, Sri. Dheeraaj Garbyal
- Regional Manager (Kumaon) of Uttarakhand Forest Development Corporation, Sri. M.P.S Rawat
- Regional Manager (Western) of Uttarakhand Forest Development Corporation, Sri. G.C Pant
- Regional Manager (HQ) of Uttarakhand Forest Development Corporation, Sri. B.K. Gangte
- Retd. D.G of Health Department, Uttarakhand, Dr. Sri. Janardan Pangtey
- Divisional Logging Manager (Ecotourism) of Uttarakhand Forest Development Corporation, Sri R.D Sati (Ecotourism), Sri. P.S Bora (Khanan) and Sri. D.C Tewari (Nainital)
- Deputy Logging Officers of Uttarakhand Forest Development Corporation, Sri. Vinod Kumar Arya, Sri. Jagdish Chand Joshi and Sri. Anand Kumar
- Statistician of Uttarakhand Forest Development Corporation, Sri. Trilok Singh
- Range Officer of Munsyari Forest Office, Sri. Lavraj Singh Pangtey
- Beat Officer of Munsyari Forest Office, Sri. Aan Singh Lwanl



And last but not the least, our trekking guides at Munsyari Sri. Nerendra Kumar and Sri. Beeru Bugyal and many other Sherpas and staff who assisted at various capacities in the trail exploration study.



What is Mountain Biking?

Mountain Biking is a sport where specially designed bicycles are used to ride off-road on rough terrain. The bikes are built to cope with the stresses and strains of the terrain, with sophisticated suspension front and rear, tyres that offer high levels of grip, gearing to allow for steep ascents to be conquered and powerful disk brakes for control when descending steep gradients.

The sport is increasingly practiced on purpose built trails, though in mountainous regions, old hiking and trading routes are often utilised for mountain biking. People take part in the sport for different personal reasons, some use it simply as a form of exercise in the outdoors, some for the adventure and exploration, others as an exciting extreme sport pushing their limits of skill and risk. Much like skiing it is a diverse sport that caters for all levels of ability.

As a worldwide participation sport it has experienced huge exponential growth over the past 10 years, with large industries grown around the sport to manufacture the equipment, to provide the venues and facilities where riders can participate, and tour operators and companies that offer and provide MTB tourism.



Study Brief

The requirement was to perform an initial survey on some of the existing trails of the Munsyari region, to assess their suitability for mountain biking and subsequently the suitability of developing the region as a mountain bike tourism destination.

The Study aims to document the process of trail discovery, assessment and development through film and photography and create a story that shows the natural beauty of the area, the cultural experience, and the excitement of riding the Himalayan trails.

Key Project Objectives

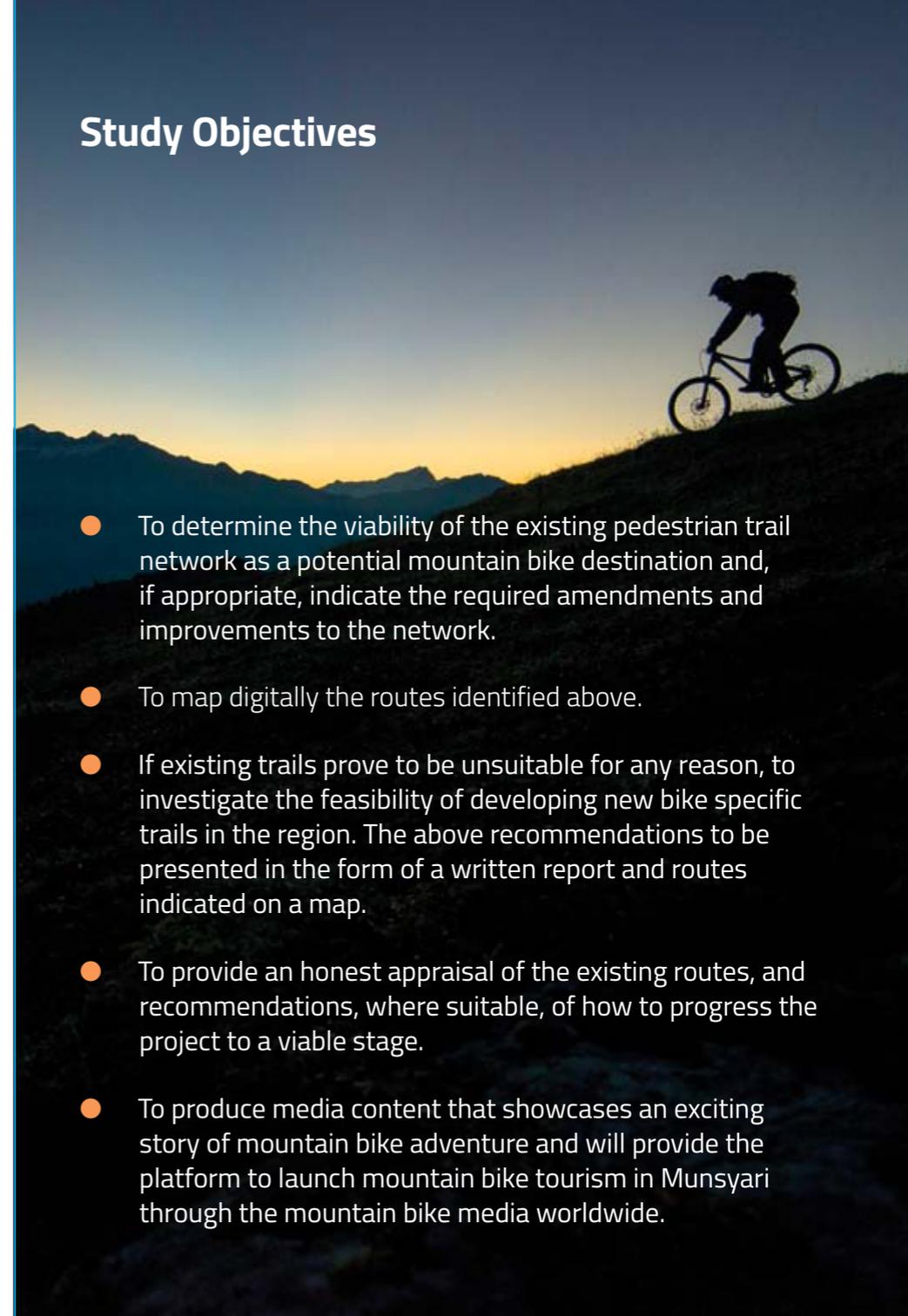
Two project objectives were raised by the UKFDC

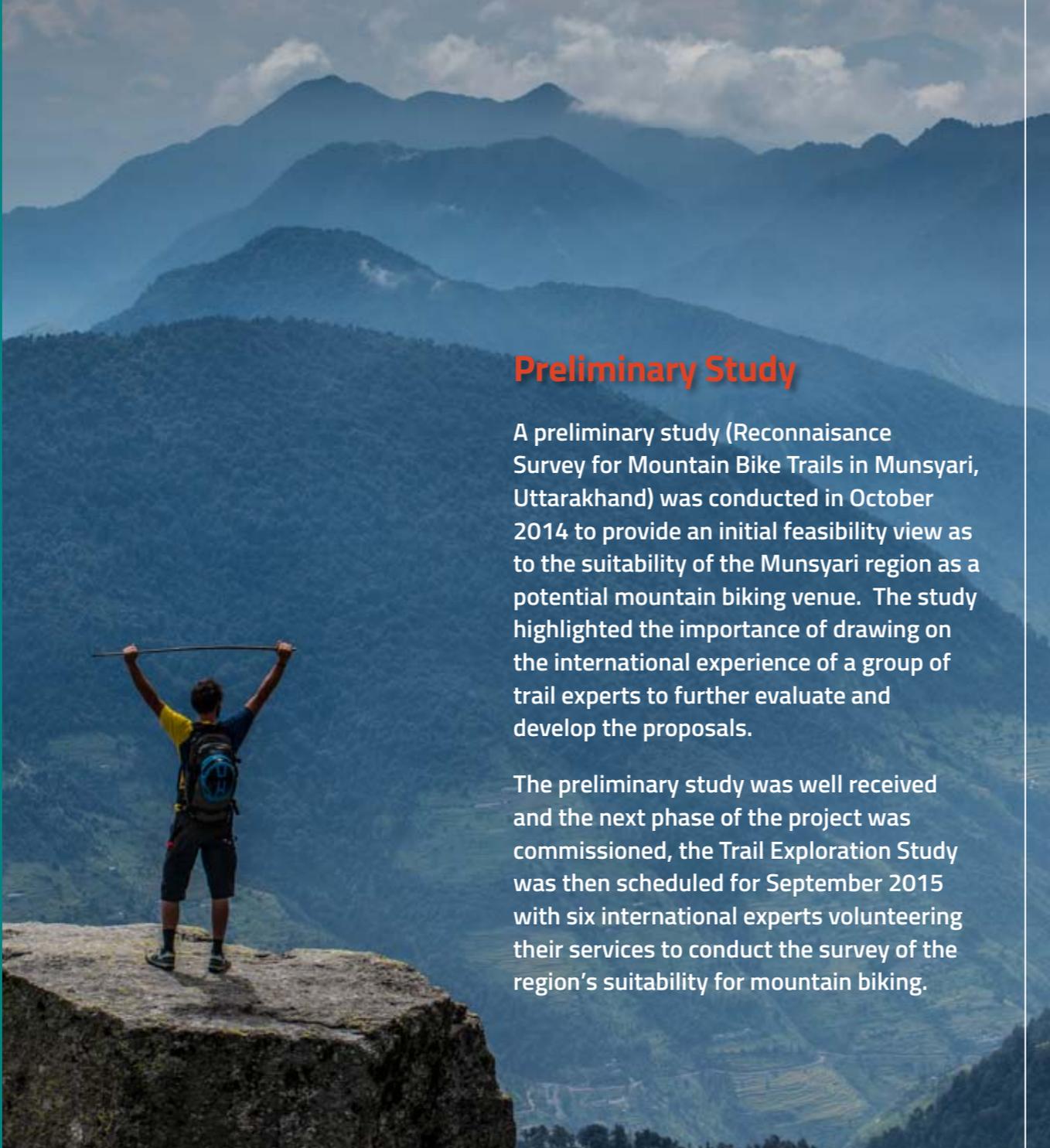
1. To develop a mountain bike tourism product in the region, working closely with the community, that can stimulate the local economy, create employment and be eminently sustainable.
2. To train and enthuse the local young people from the Munsyari region with the knowledge and skills to complete mountain bike challenges and compete in mountain bike events that reach much further and wider than the Munsyari region, further promoting the region to the worldwide MTB audience.

It is clear that the primary requirement and function of the project is objective one; however, through the development of this, the viability of point two becomes increasingly feasible in the future.

Study Objectives

- To determine the viability of the existing pedestrian trail network as a potential mountain bike destination and, if appropriate, indicate the required amendments and improvements to the network.
- To map digitally the routes identified above.
- If existing trails prove to be unsuitable for any reason, to investigate the feasibility of developing new bike specific trails in the region. The above recommendations to be presented in the form of a written report and routes indicated on a map.
- To provide an honest appraisal of the existing routes, and recommendations, where suitable, of how to progress the project to a viable stage.
- To produce media content that showcases an exciting story of mountain bike adventure and will provide the platform to launch mountain bike tourism in Munsyari through the mountain bike media worldwide.





Preliminary Study

A preliminary study (Reconnaissance Survey for Mountain Bike Trails in Munsyari, Uttarakhand) was conducted in October 2014 to provide an initial feasibility view as to the suitability of the Munsyari region as a potential mountain biking venue. The study highlighted the importance of drawing on the international experience of a group of trail experts to further evaluate and develop the proposals.

The preliminary study was well received and the next phase of the project was commissioned, the Trail Exploration Study was then scheduled for September 2015 with six international experts volunteering their services to conduct the survey of the region's suitability for mountain biking.

Situation (Munsyari)

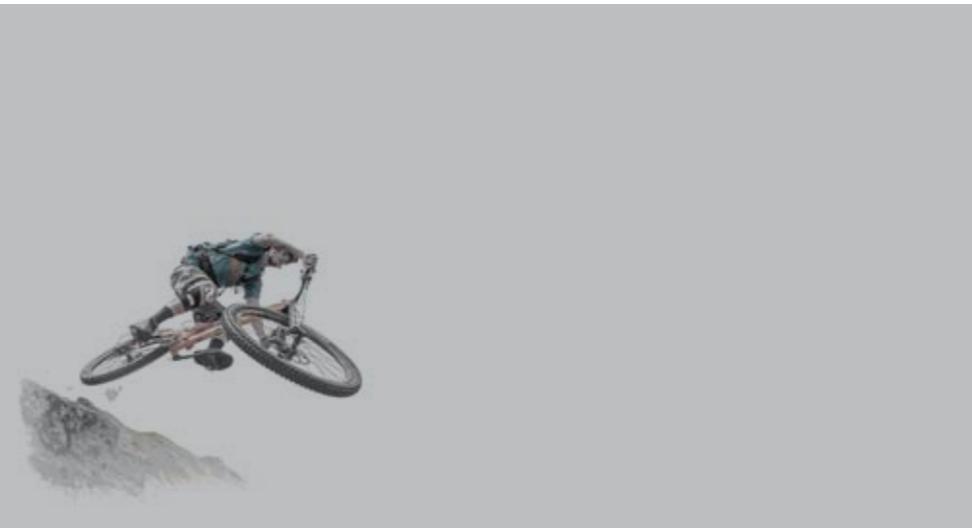
Munsyari is a small mountain town located in the Pithoragarh District in the hill state of Uttarakhand, India.

The town sits high up at 2,200m and is situated on the southwest face of the Johar Valley, along which the Gori Ganga River runs from its source at the Milam Glacier. It remains one of the last accessible hill stations by motor road in the region.

The climate in Munsyari varies with each season. Snow cover in the winter may last for four to five months on the higher ground, before the snow melts and temperatures rise from mid-March. June sees the beginning of monsoon rains which last until the start of September. The landscape is very dramatic with steep gradients on most of the ground.

Munsyari was identified as the potential hub for mountain bike trails in Uttarakhand and is the focus of our study, exploring trails that can be accessed directly from Munsyari, and in the surrounding areas. The town is currently the starting point for many treks into the Himalayan interior and this is a consideration for its potential suitability for mountain biking.

One of its key advantages is the superb backdrop that is provided by the high Himalayan Panchu Chulli range, in full view; it is an awe inspiring place surrounded by unspoilt nature and high mountains.



Site Study and Trail Reconnaissance

Methods of Procedure

The first step of the study involved acclimatisation and familiarisation of the immediate local region around Munsyari, to understand its topography and assess the areas we desired to explore during the stay. There is a lack of good quality maps that record the many trails and routes in the area.

This familiarisation combined with the field work of phase 1 of this project (Reconnaissance Survey for Mountain Bike Trails in Munsyari, Uttarakhand) highlighted some key areas in which to begin the exploration. The areas immediately surrounding Munsyari town and the ridges and hiking trails from Khalia Top were the focus of the early evaluation.

Extensive fieldwork was carried out to assess these potential areas and trails and once we became familiar with the local landscape, new areas were identified to investigate in the second half of the survey.

Fieldwork was conducted on foot and, where possible, by biking the routes, taking trail notes and recording some sections of the trails using on board Go-Pro video cameras.

The raw data was recorded on a trail map of the area and, later in the study, reviewed and edited to produce more appropriate final mapping that has been colour coded. This has identified trails that can be suitable for MTB but require work and trails that are already suitable for MTB. Trails surveyed that were not considered suitable for MTB, and finally, potential new routes and areas that require further investigation. All to be highlighted on the map separately.

Criteria Considered During Trail Audit

During the process of auditing each trail and assessing its suitability for mountain biking, a number of factors must be considered.

The factors taken into account include:

Geographical and topographical factors

- The altitude change of the route
- Gradient of the landscape
- Exposure

Physical trail attributes

- The trail surface
- Trail gradient
- Trail features
- Trail sustainability
- Trail difficulty and safety

Trail characteristics

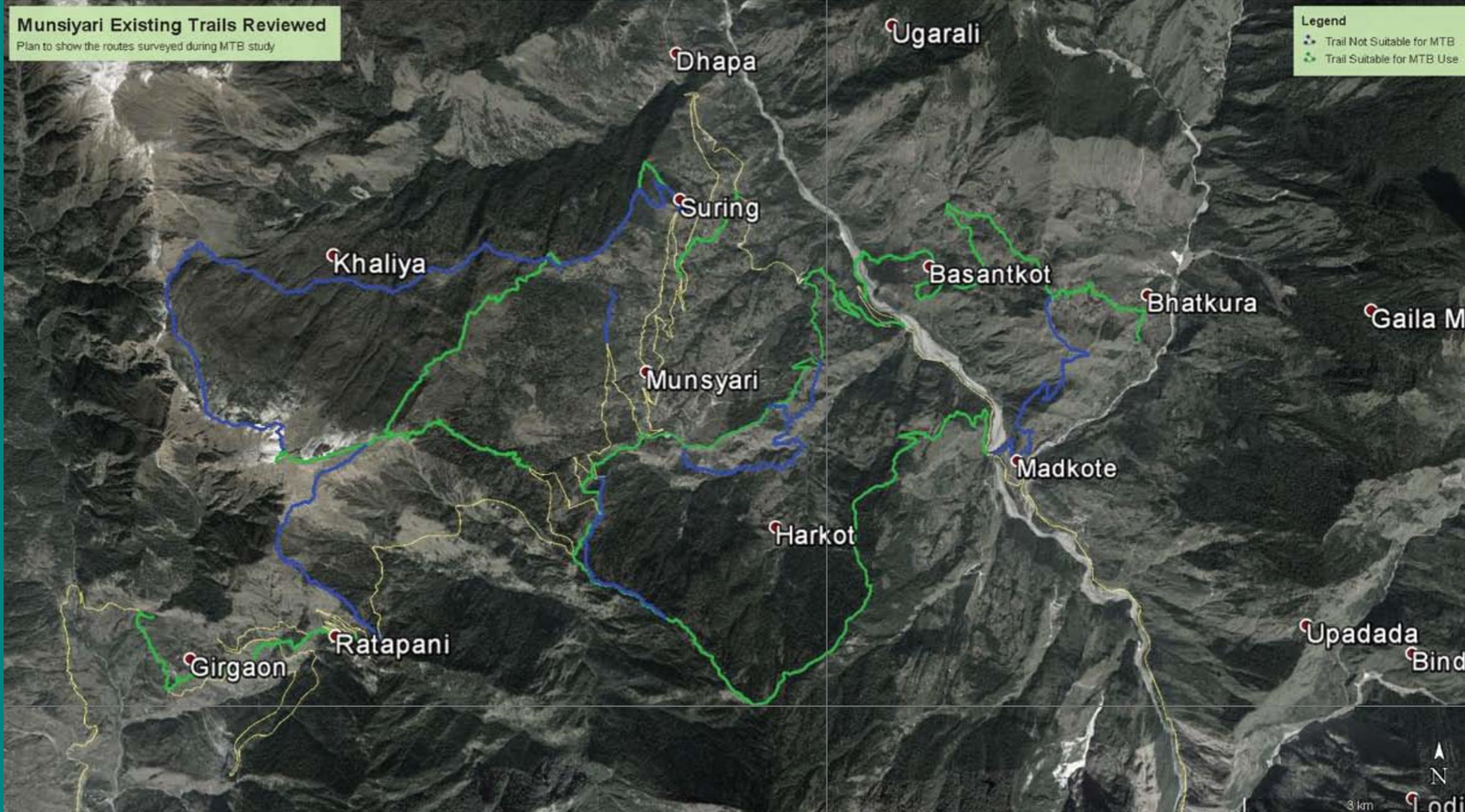
- The feel and style of the trail
- Consideration of the adjacent landscape and habitat types
- Inclusion of cultural points of interest



Review of Existing Trails

Through the course of the exploration, a number of potential routes on existing pathways in the area were tested. Some paths were paved with stone or 'stone pitched' some were made from concrete, others were more natural and unpaved or 'dirt' trails.

The majority of the trails that we found and tested were not possible to ride in some places, others can be modified and improved to make them suitable for bikes. Whilst some others were unsuitable altogether due either to there being too much work to be feasible, or there being too much danger/exposure to ride the trails.



A few trails that we inspected were found to be suitable to ride along their entire length with no additional works required, but these were in the minority. We believe that further exploration would discover more trails that would be suitable without much in the way of additional works.

Fortunately, many of the trails only require improvement works in specific areas; others require more significant alterations to make suitable. This work is all labour-based trail work and is entirely feasible to make trails that are fun and rewarding to ride. Furthermore, any works undertaken

will only serve to improve existing pathways by way of widening the radius of corners, reducing the gradients and reducing the size of the largest steps, which will make the trails easier to travel on foot, as well as by bike. All of the routes explored would be suitable only for advanced level riders who are skilled to ride more challenging terrain.

Please refer to Appendix 1 for trail notes with details of each trail audited.



Some of the typical problems that we encountered along the trails could be summarised as follows:

Problem: Narrow gullying

In places the trail has sunk over soft ground and through erosion has become quite narrow, the consequence is that the biker's pedals will catch the sides of the gully. It means that water will continue to follow the gully and erode the trail further each year.

Solution:

Either the sides of the gully can be widened to allow a biker room to travel through and manoeuvre, or the trail can be filled to raise the track-bed nearer to the surface level of the gully. Water can be diverted from the gully to minimise future erosion.

Problem: Switchback corners – too tight

Many of the paved trails are on relatively steep slopes and as such they zig-zag down the slope with tight switchback corners.

Solution:

Widen the radius of the corners. A bike requires a much greater radius than a pedestrian; where the slope is not too severe it will be possible to dig away some of the bank to widen the turn on the approach or build out the outside of the turn to increase the radius.

In other areas where the trail steeply descends a set of four or more zig-zags or switchbacks, it may be possible to build across the contours on a gentle gradient over a longer distance to one single switchback and then return. This will allow the same height to be gained/lost but in a safer and more controlled manner. This needs to be evaluated on a case by case basis.

Problem: Trail washed out and too rough

In places the line of the trail is not well defined and the weather and a lack of maintenance over time has meant that the trails have become eroded, washed out and very uneven. Mountain bikes can cope with some very uneven ground when descending but struggle if it is extreme or the ground is flat or uphill, as they cannot maintain momentum over the obstacles.

Solution:

Recut trail to define line, remove rocks and build trail up to and over large pronounced tree roots. Manage flow of rainwater on the trail by adding small water bars or diverters to prevent water from eroding the track.

Problem: Steps too large

In a few places where the trail has been built from stone and follows a steep gradient the steps are too large for mountain bikes. Mountain bikes can deal with quite large steps in isolation but repeated large steps can be dangerous.

Solution:

There are two main solutions in this scenario; one is to re-route the trail for a short section taking a less steep gradient. The other is, where it is possible, by adding more stone steps so that there are a greater number of smaller steps that the bike can roll over, rather than fewer large steps.

Problem: Gradient too steep with switchback corners

Some sections of trail take a direct route down steep slopes with sharp zig-zag corners, these are too steep and tight to ride.

Solution:

For sections of trail or hillside where the trail steeply zig-zags down, it should be ascertained whether the trail can continue on a traverse across the slope to an area that is less steep in order to make the corners safer and more gradual. If the terrain allows, a set of switchbacks could be replaced with one longer piece of trail that goes out and then back to avoid the steeper part of the hillside.

Problem: Water control/damage

Heavy rainfall during the monsoon season can cause significant wash out and damage to trails. This can make them impassable by mountain bike, or just accelerate their wear and erosion. Many trails higher up the mountains are, at present, not maintained.

Solution:

For new sections of trails, grade reversals would be designed into the routes, these features, where the trail switches grade from slight descent to slight ascent, shed water from the trail and prevent water from gaining momentum by running down the trail, limiting erosion. For existing trails it is possible to add water bars at regular intervals that help to prevent large volumes of water from travelling down the trail.

Problem: Loose stones, debris and tree branches

Some of the sections of trail that are suitable for biking do not receive much traffic and as such have become covered in loose stones and debris or have low tree branches that prevent a bike passing.

Solution:

Remove loose stones, and trim back any low tree branches over the track. Note: Any soil that has washed onto stone paths over years should be retained as that can improve the ride of the trails.

Problem: Having to dismount and push bikes

We had to walk with our bikes many times during our reconnaissance trip. On some trails this was purely for some of the reasons listed above which can be rectified. Other trails followed a route that go steeply up and down constantly. This prevents the rider from getting into a rhythm when on the bike, as every time he descends for a short distance he has to dismount and then push the bike uphill again.

Solution:

Only use routes that descend or contour the slope or have isolated climbs as opposed to continuous short steep climbs.



The Trails Riding Experience Paved Trails -vs- Dirt Trails

Mountain bikers love variety. We found that many of the trails in the lower valley and well-travelled routes have been paved with stone or concrete to protect them from erosion in the monsoon season. Depending on the route that they follow and how steep they are, these trails can provide a fun and challenging ride. They can also be difficult to ride and very slippery, so choosing the right trails that are suitable is essential; not all trails are suitable.

Whilst it is fun to ride on the paving and cobbles, the preferred surface for mountain bikers to ride on is compacted dirt and earth trails, so there must be a good selection of trails that are more natural in their make-up.

Mountain bikers will want to ride a variety of terrain and trail types during a vacation so it is good that there are these two distinct styles available, combined with the large boulders in areas such as the ancient forest on Khalia top. However, the preferred riding surface will always be a more natural dirt trail surface. Therefore, it will be important to have a 50/50 mixture of paved and dirt trails mapped out as suitable routes for MTB and work towards a 60/40 balance with more dirt trails than paved in future years.

The Trails Riding Experience Riding -vs- Walking

A word commonly used by mountain bikers is 'flow'. This is an expression that is used to represent the good feeling when riders connect with the trail and can carry their momentum uninterrupted. Flow is heavily disturbed by events that slow riders down, such as corners that are too tight, or having to dismount for an area where it is not possible to ride. Many of the items that currently interrupt flow on the trails in Munsyari have been highlighted in the 'typical problems encountered' section above, most of these can be amended to improve the trail's overall flow.

One thing that is more difficult to amend on existing routes is that, if there are many steep ascents along the route, it will result in multiple times that riders have to dismount from their bike. Having to dismount from the bike is one of the main things that can kill the flow of a trail and detract from the good experience. A newly planned trail will endeavour to have a good 'flow'.

To give some context, if a reasonably skilled rider were to visit a UK mountain biking venue where the trails have been purpose built for mountain bikes, they would expect to be able to ride 100% of the trails and not to have to dismount and push uphill at all.

If a rider's trip was to terrain such as the European Alps as part of a guided mountain bike holiday, a group or rider would expect to be able to ride around 90% of the total of the individual trails. The terrain will be more rugged and challenging than a purpose-built MTB trail and so it would be acceptable to have to walk certain sections. The expectation would also be that in regions where there is so much choice of quality trails, the guides and companies would have chosen trails that are best suited to mountain bikes to minimise the interruptions and walking.

Now we come onto the situation that fits Munsyari. An adventure mountain biking trip for advanced riders in remote terrain. In this truly rugged and more challenging environment it would be acceptable to walk up to 30% of the total trail distances for any of the reasons listed above. Of course the goal is to reduce this as close to zero as possible as this will increase the enjoyment and improve the experience for guests. In an environment such as this, it is not realistic and also will not be expected. Taking steps to move towards that goal each season is what is most important in the development of the area.

What is key when choosing suitable routes is the length of each segment of quality riding; if the distance is great and then there is one large walk/push in a trail to access another long high quality riding section, this is absolutely fine.

What becomes a problem is when there are a high number of interruptions that break up any prolonged riding sections by necessitating continuous dismounting and walking. This is a trail with no flow and should be avoided.

So routes that we surveyed with many short steep climbs along their length were discounted, whereas routes with fewer and longer climbs separating longer sections of descending were included in the final plans.

When planning out new routes this should always be one of the main considerations; for the trail to head predominantly downhill and have a good balance between riding and walking as close to 100% riding as is possible.



Importance of a Beginner Trail in Munsyari

The terrain and the routes explored during the study were all challenging trails that would be suitable for advanced riders. This poses a problem: how to develop and encourage the youth and future guides from Munsyari to ride MTB. It would be irresponsible and unsafe to allow novices to learn on these high skill trails, there needs to be an easier trail area to learn the skills before progressing onto the harder trails.

The purchasing of six mountain bikes by UKFDC is a great initiative and shows the will to develop and nurture local riders. However, it could also be seen as irresponsible to let the people ride the bikes without some level of control and a suitable area to learn to ride off-road. Therefore we feel it is important that an easier beginner mountain bike trail is added in the town. We identified a suitable location for this on the slopes of the hillside just downhill from the helipad. The gradient and terrain here would allow the creation of a beginner trail and it would be easily accessible to people in the town.

This would then allow the six mountain bikes that have been purchased to be used in a controlled manner, and on a trail that is suitable for the bikes and the riders. We would advocate the creation of a weekly mountain bike club or school such as a bike school led by a couple of mountain bike coaches.



SECTION 3

Review of Area and Recommendations

How to develop Mountain Biking in Munsyari as a Feasible and Profitable Project

Our time spent in Munsyari investigating the trails and exploring the local area gave us good insight to the local terrain, the location of Munsyari, and a clear vision as to how to develop the area for mountain bikers.

There is a strong opportunity for Munsyari to create a bespoke adventure mountain bike package for the expert mountain biker.

The remote location of Munsyari combined with the steep and highly challenging terrain means that this is a place for advanced skilled riders only, who are looking for a truly unique 'trip of a lifetime' experience.

It is our recommendation that Munsyari should market itself as a premier adventure mountain biking experience, packed full of local culture and surprises that people will remember for the rest of their lives.

Mountain biking is an ever increasing sport market, and riders are always looking for the next trip or adventure, to explore new terrain, and travel to new areas by bike. This presents an excellent opportunity for the region to develop this niche market.



SWOT Analysis

Development of New Singletrack Trails

Our study of the Munsyari region left us with a clear conclusion regarding the trails in the area.

In our survey and study period it was obvious that there are not enough existing trails in the region that are suitable for mountain biking, and of a high enough quality to start mountain biking in the region now.

It should be noted that this is a huge geographical study area and one of the limitations perceived was always going to be the scale of the task, combined with the lack of good mapping. There may be some excellent trails that remained undiscovered and therefore were not tested or surveyed.

Critically, we also concluded that the terrain in the area has a great potential for mountain biking and it is very clear; with the development of new singletrack mountain bike trails, the missing links in the package would be complete and the area could then offer a premium adventure MTB experience to rival anywhere in the world.



Development of trails will benefit others

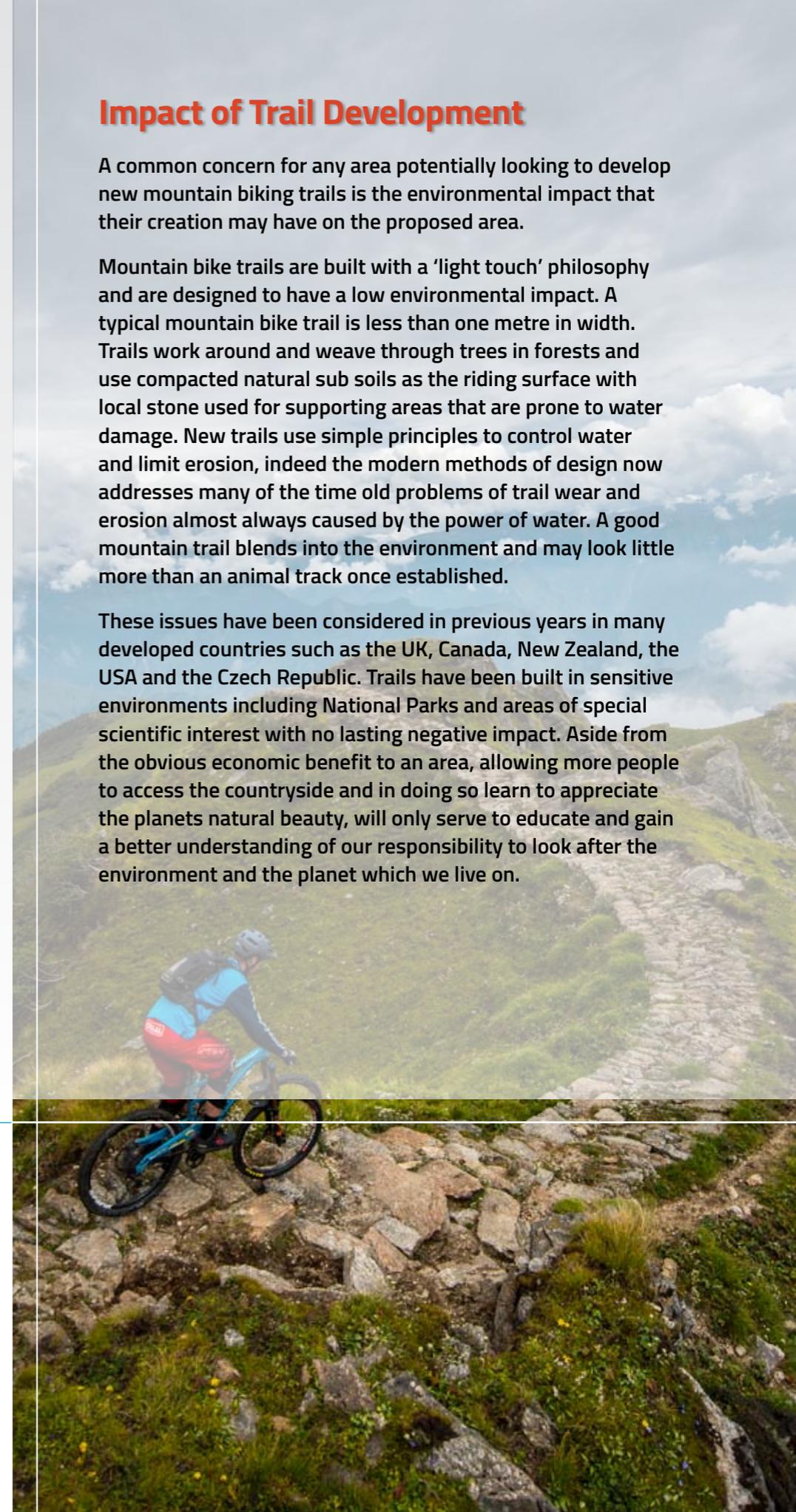
The development of bike specific trails to access new areas will also improve the infrastructure for trekking and local people. Many of the trekking routes are steep with many steps and this can be a physical barrier to people considering trekking in the first place or indeed enjoying the treks, once out. Mountain bike trails generally contour and descend or ascend using more gentle gradients, this provides a longer but easier route to trek, requiring less physical exertion (significant for Europeans at these altitudes), which will allow the trekking market to be developed further alongside the mountain bike project.

Impact of Trail Development

A common concern for any area potentially looking to develop new mountain biking trails is the environmental impact that their creation may have on the proposed area.

Mountain bike trails are built with a 'light touch' philosophy and are designed to have a low environmental impact. A typical mountain bike trail is less than one metre in width. Trails work around and weave through trees in forests and use compacted natural sub soils as the riding surface with local stone used for supporting areas that are prone to water damage. New trails use simple principles to control water and limit erosion, indeed the modern methods of design now addresses many of the time old problems of trail wear and erosion almost always caused by the power of water. A good mountain trail blends into the environment and may look little more than an animal track once established.

These issues have been considered in previous years in many developed countries such as the UK, Canada, New Zealand, the USA and the Czech Republic. Trails have been built in sensitive environments including National Parks and areas of special scientific interest with no lasting negative impact. Aside from the obvious economic benefit to an area, allowing more people to access the countryside and in doing so learn to appreciate the planets natural beauty, will only serve to educate and gain a better understanding of our responsibility to look after the environment and the planet which we live on.



Trail Grading

The riding in the Munsyari region is technical and challenging; it is adventure mountain biking, and riders must be suitably skilled, equipped and prepared to ride to the conditions.

The marketing material will inform riders of the challenges and the experience level that they should be riding at in order to take part in the adventure. This is important, to ensure that only those riders who are suitable for the experience take part.

Guiding intermediate or novice riders as part of a group would spoil the experience for the others more experienced and could prove dangerous for those individuals and compromise the whole success of the project.

The trails that will be mapped out and developed, will use a simple grading system to assist the guides and better inform potential and actual guests the level of difficulty of the trails.

All trails are for advanced riders only and they can be defined further by the following simple grading system, which identifies some of the typical challenges that may feature along the trails:

Hard

Expect cobbles, rough surface, slippery conditions, steps and reasonably steep terrain.

Harder

Expect some considerable sections of exposure to steep unprotected edges where confidence is required. Steep sections, slippery, larger steps and drops.

Hardest

Expect severe and high risk exposure to steep drops and empty space. Steps, larger drops, very technical sections, steep gradients, slippery. Requires complete confidence and skill.

Maintenance

Trail maintenance is an important consideration that should not be overlooked. Mountain bike trails require ongoing maintenance to retain their ride quality, safety, and to prevent erosion. Due to the heavy rain of the monsoon, it is imperative that the trails are maintained proactively to prevent erosion, and reactively to return the trails to a good condition before tourists return for the autumn season.

The maintenance of the trails in the Munsyari area should be carried out by a team who are trained in the basic methods of trail maintenance and understand the requirements of mountain bikers.



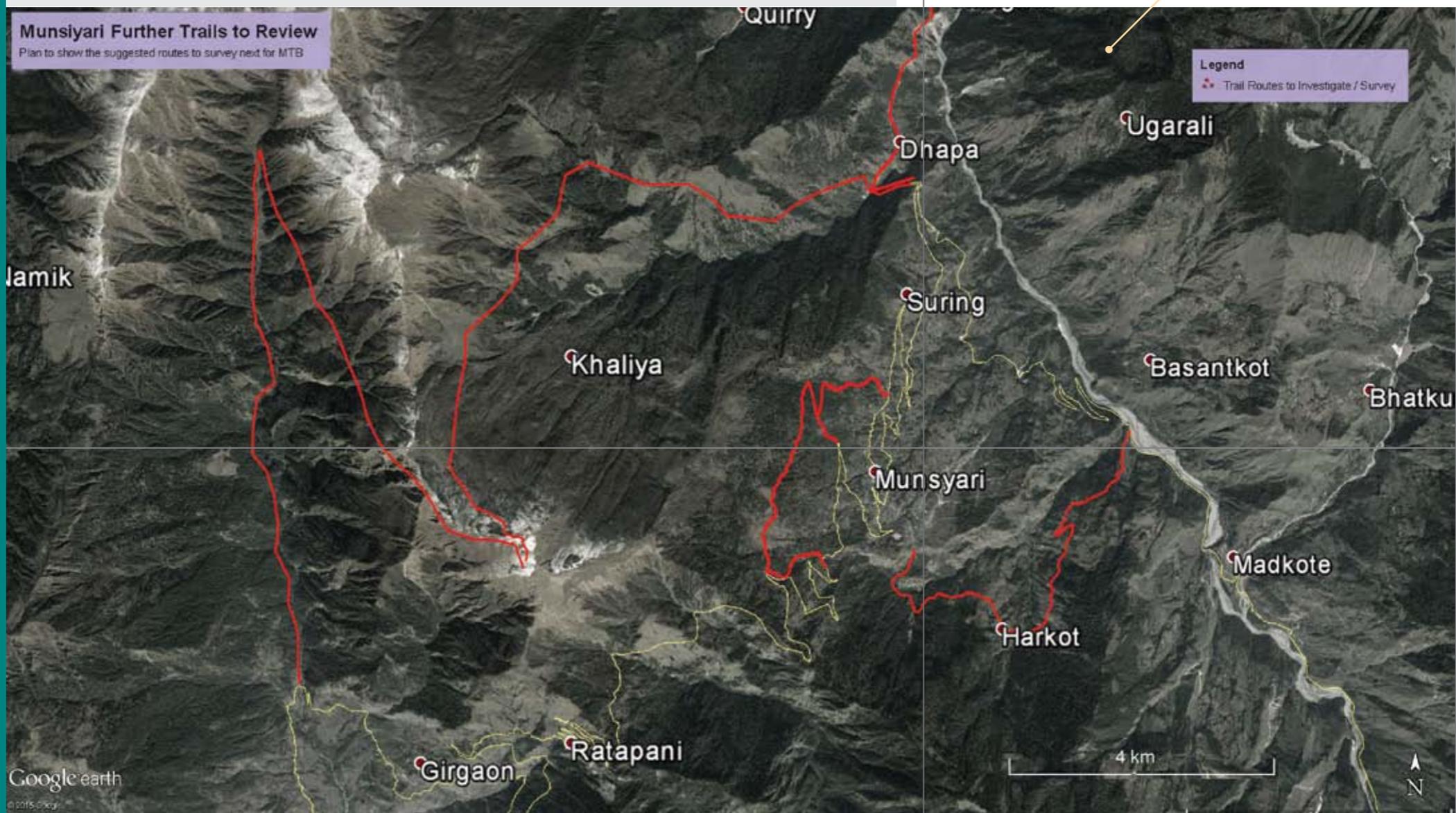
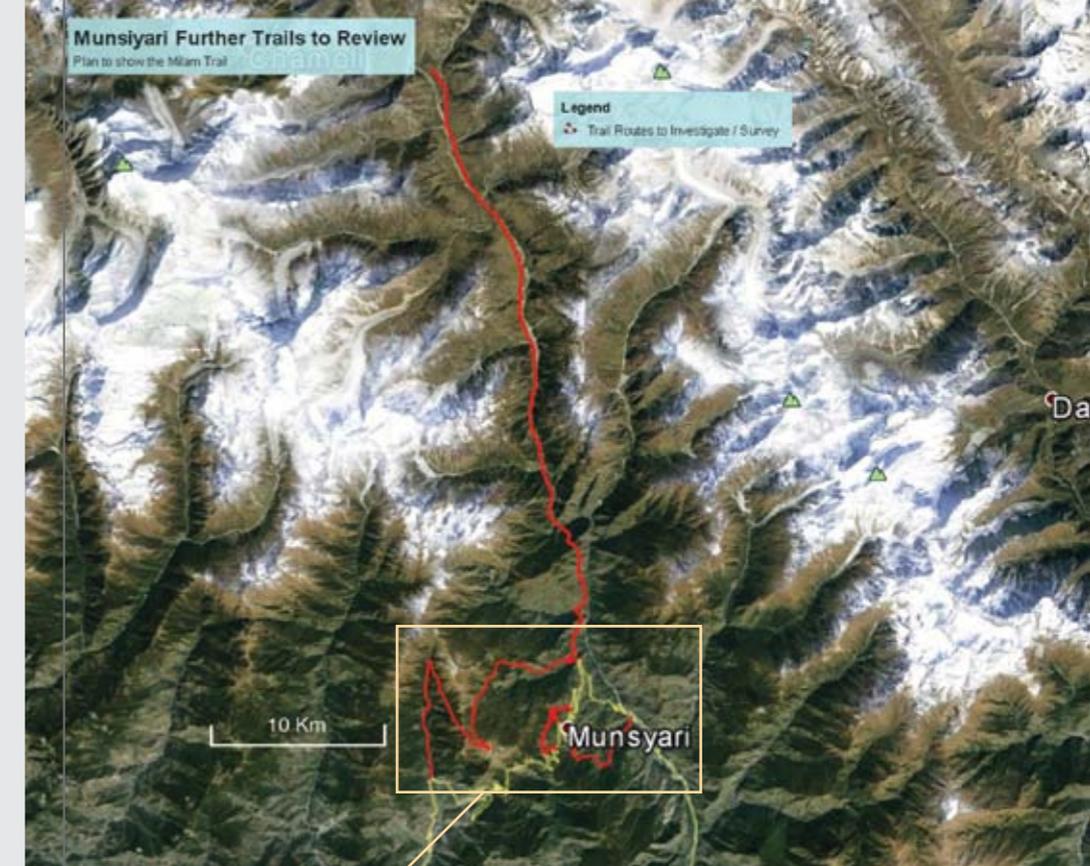
Further Routes to Explore

In a geographic area as large as the study region, with difficult terrain and no trail mapping available, the study was always going to be restricted by time. However, our time in Munsyari enabled us to identify the areas that we feel will provide the best potential for routes and trails.

The map shows the suggested routes that require further exploration to test whether these existing trails would be suitable for mountain biking, or whether the route is passable and suitable to create simple natural single-track trails.

These routes/areas have been chosen based on the knowledge gained of the area during the study and by looking at the routes that would provide the best development of the mountain biking holiday package.

The trails displayed on the map have been highlighted in red to indicate that they require further exploration and consideration.



Strengths

The terrain of the region and the town's physical situation bordering the high Himalayas

- Visitors will be awestruck by the views and terrain

The amount of Vertical Descent Available to Ride and Develop

- It could be possible with further reconnaissance to descend from over 4,500m down to 1,300m

Friendly and hospitable local people

- The people of Munsyari and the surrounding villages make visitors feel very welcome which provides a great community experience.

Traditional mountain lifestyle and villages still intact and unspoilt (ecotourism).

- From a cultural point of view, it is an adventure that is hard to better, exploring incredible mountains with breath-taking scenery whilst taking in traditional mountain culture and lifestyle.

Good Variety of Habitat and Terrain (Rock areas, Alpine meadow, Ancient forest, Agricultural land and Paddy fields and more green dense jungle down to the river).

- It is important that the riding offers variety, this can be provided by the terrain and surface that you ride on (paved, dirt, tree roots etc) and also by the environment that you ride through.

Not Too High

- Actually above 4,000m, most average lowland people will struggle to ride well and safely, and the weather conditions become more challenging. Significantly acclimatising to the reduced air pressure will not be possible on a holiday timescale.

Weaknesses

Location - Poor accessibility by road.

- It is too far to drive from Delhi by road for visitors.

Most existing trails not currently suitable.

- Most of the trails identified will require improvement works and alterations to make them suitable for MTB.

Current arrangements for Emergency Rescue

- It is absolutely crucial that there must be a Medi-Vac and proper emergency mountain rescue plan to allow for this activity to be further developed.

No bike shops for repairs

- Currently no spare parts or skilled mechanics are available to assist with mechanical breakdowns.

Opportunities

Create the Ultimate Himalayan MTB Experience

- With no real mountain bike centre in the Himalayas, there is a great opportunity to become the centre for mountain biking adventure in the Himalayas and build a market leading brand.
- Area has great potential to continue to develop the package and industry over the next 10 years
- Once a package has been developed it can be further developed and grown in sympathy with the principles of eco-tourism
- Helicopter access would be an attraction for visitors, adding to the premium feel of the project
- The disadvantage of poor road access can be turned to advantage, once helicopter access is operational, as it is a great visual experience to fly in by helicopter, and to access new riding areas by Heli-drop.
- Creating a MTB tourism industry will create jobs for local people.
- The project will require people to be skilled in trail building and maintenance, MTB guiding and bike maintenance and repairs. It will also require people in the general hospitality and tourism areas for accommodation and food. Sherpas to help with bike transport, carrying supplies and camp set-up. Increased medical facilities.

Benefits to the Hiking Industry from use of newly Constructed Mountain Bike Trails

- The creation and improvements made to trails for mountain bikes will also benefit the Hiking industry by providing more accessible options that are based near to Munsyari together with improved access and safety provided by the helicopters.

Threats

Requires a number of operational stages to work together in order to be viable

- A number of steps require to be followed in order to make the project viable and successful. If these are not respected, the project will fail to reach its full potential and may not be profitable.

Permissions not granted to develop trails

- Trails require further works and new trails must be developed in order to make Munsyari a successful MTB tourism destination. It will be necessary for permissions to be in place to allow this.

Extreme weather could affect trails and infrastructure in the area

- The trail maintenance teams must be able to respond to extremes of weather that could damage the trails. Trails should be inspected and well-maintained.

Riding in the area is perceived to be easily accessible and unauthorised riders turn up to ride

- This is not a big threat due to the remote location and difficult access, however we would still recommend that trail names do not reference specific places and any GPS data or GPX files are not released to the public.

It is important that riders use the company to experience the area (and therefore use and pay the guides, sherpas etc. to the benefit of the local economy) rather than feel that they can gain enough information to plan a trip and do so themselves. We would also not recommend using trail maps on the website. This will also help limit competition from new providers.

Trips not running to full capacity

- This is a risk to the financial viability. If the project is poorly delivered, the trails are not well developed and maintained, the marketing is poorly run or other factors are overlooked, then tours may not fill and run at capacity. This would make it challenging for the project to be sustainable or to make a financial return on the investment.

We would recommend that the first step for the project team to follow would be to conduct further research and due diligence to assess the capacity and frequency of other adventure MTB packages, to help check if they run to capacity and gain a more complete understanding of the feasibility of multiple trips through the year.



Munsyari MTB Business Model

Marketing the area as a mountain bike destination and allowing visitors to make their own plans and choices when they arrive is not a feasible way to develop this region.

It is our recommendation that mountain biking in Munsyari should be developed using the following model.

- The experience of riding in the area and the Himalayas would be marketed as a premium, trip of a lifetime mountain biking adventure package.
- It will be sold as an all-inclusive guided package via a professional and easy to use international English language website.
- The media used will highlight a unique and exciting experience that feels very special and forever memorable to the few individuals that visit.
- It is a model that will work on the basis of very low customer numbers, each paying a premium fee to participate in the trip and visit an unspoilt area of natural beauty with little development.
- The visitors must feel that they are experiencing a unique place that is uncharted, still relatively undiscovered for mountain biking, and feel like they are pioneers. Large groups of other riders will detract from this experience, which again supports the basis for low volume and a premium exclusive package.
- It will be both necessary and possible to grow the industry slowly but this should be done in a sensitive way that does not have a negative impact on visitors' experiences. Itineraries could be staggered, and different accommodation providers used, to maintain the atmosphere of being the only group in this remote and special place to ride mountain bikes.
- Keeping numbers of mountain bikers low would ensure that their impact on any trails would be negligible.
- Every last detail must be planned out, taken care of and included in the overall package price, such as food, accommodation, all travel, guiding and Sherpas, camping, helicopter, activities and support.
- All groups will need to be guided by experienced guides, this limits the number of visitors in the first few years while local people develop their knowledge and skills. International guides could be utilised initially to assist in the first years of the project.
- We suggest a maximum group size of eight people.
- Feasible times of the year for MTB tourism are April and May and September and October, weather conditions would not be suitable during other times of the year.
- This would allow for two times, two-week packages to be run per month, so a total of eight package weeks per year. This should be geared up by increasing the number of guides in future years and planning the resources required to run two groups side by side on differing itineraries.
- Guests would organise and purchase their own flights to Delhi. From this point the package would start with guides greeting them at the airport, and staying with them until they are returned to New Delhi airport at the end of the trip.

Services and employment that would be created in the delivery of the MTB project:

- Local trail exploration and further survey work: A team of 2-4 staff will be required to complete this as a result of this study.
- Trail Maintenance and Trail Development Build Team: 20 – 30 jobs.
- Helicopter Flights – Pilot plus Engineer
- Bike and Luggage transport drivers – Delivery of bikes and main luggage from Delhi to Munsyari and back to Delhi at the end.
- Drivers – Drivers are required to transport riders and bikes to the start of trails and back from the end of trails to the hotel during the stay in Munsyari and also for the drive back to Dehradun.
- Hotels and Accommodation: Extra provision for guests during the MTB season.
- Sherpas – These will be required, one Sherpa per guest to carry bikes, and may be required to transport lunch to locations where they can meet the riding group.
- Sherpas – Would be required to set up camp on the overnight camp day or any other projected expedition items in the package.
- Mountain Guides – These are key roles, to ensure the customers' safety and experience, they should be knowledgeable of the local area and traditions and also competent mountain bikers. This may take some time to develop.
- Mountain Bike Mechanic – One or more of the MTB guides could be trained to carry out this role, but it will be an important task.

A Munsyari MTB Project Leader/Manager

This is a key role for a professional person to co-ordinate all the services detailed above, locally and will be the point of contact for international support and with paying guests.

Involve Local Businesses

To maximise the benefits of mountain bike tourism to the local economy, local businesses must be incorporated into the project.

To involve local businesses in the project, the developed organisation will be able to sub-contract work. This will give small and medium sized businesses, such as hotels, restaurants or taxi drivers, the opportunity to benefit directly from mountain bike tourism.

As capital is likely to be hard to come by for local people to invest in this business opportunity, it may be possible to give the opportunity for key local people to buy into the operation through a scheme of earning shares in the business in return for a period of working for the business and helping it achieve its goals.

Improve the Accommodation Facilities

We would suggest for a trip and experience of this kind to be successful, that there is a mixture of rustic, simple and cultural accommodation experiences (such as staying at the guesthouse on Khalia top, camping out and staying in guesthouses in Sarmoli village) combined with a base that provides a higher level of comforts and facilities. Whilst the accommodation does not need to be 5 star, it should be comfortable, when we stayed in the KMVN guesthouse only 3 of the 7 rooms that we stayed in had working showers, this is the sort of thing that would need to be addressed with a higher standard of accommodation provided. Ideally it would feature good bathroom facilities, Wi-Fi, a bike storage area and workshop so guests can wash and repair bikes during their stay and good cooked meals.

Involve the Village Head People

Once the routes have been finalised for the first year's trips, we would recommend that the heads of the villages are invited to meet with the project leader so that the project can be explained. We would also recommend that for each visiting group a small payment is made to the villages that the riders will pass through. The head of the village would decide how this is used and distributed, riders can then simply stop and talk, have chai and fresh vegetables with the local villagers during their time in the area. I would suggest that the guides suggest not to tip or pay for this hospitality to retain the experience for years to come. If, through the development of this eco-tourism, local villagers learn to ask for money or tips from guests, part of the charm of the area and the great local hospitality that we experienced would be lost. The only payments would be direct to the village heads and made by the Project leader.

Continue to Develop the Package

By continually striving to improve the experience for guests, the package and the area will continue to develop to support mountain biking. This could be in the form of the ongoing reconnaissance of new surrounding areas and the addition of new trails to add into the tour, new cultural activities or simply listening to client feedback and making adjustments to improve items in response to the comments. What is important is that there is a long term vision that goes beyond simple becoming operational, by striving to always improve and achieve excellent customer service and experience scores it will stand Munsyari in good stead to welcome more guests and resist competition from other areas.



'The Big Himalayan Mountain Bike Adventure'

A suggested programme for the Munsyari MTB package is outlined below.

DAY 1

Arrive in Delhi, visit tourist attractions, overnight in Delhi

Met by Guide or Project Leader at airport, bikes and main luggage loaded into vehicles to be transported to Munsyari, guests have one day to experience some of the sights and cultures of Delhi, stay in Hotel overnight

DAY 2

Fly to Dehradun and then Helicopter to Munsyari – build bikes, relax

Take flight in morning to Dehradun and then fly by Helicopter to Munsyari. Greeted at Helipad by local support team, given a warm traditional welcome. Time to build bikes and a project introduction and brief provided by the project leader ahead of the riding in Munsyari.

DAY 3

First Ride – School Run Trail to Warm Up, then Munsyari Ridge

First day of riding to acclimatise and for guide to assess the group's level of ability. Ride from hotel to first trail, stop for lunch, lift back up road then ride Munsyari Ridge to motor road and lift back from motor road.

DAY 4

Khalia Top – Ride Ridge or Guesthouse trail back down and then Freeride Meadow trail

Vehicles up to start point of hike up to Khalia top – Sherpas to carry bikes up. Ride one of the ridges or guesthouse trail back down – and then freeride meadow trail all the way back to the hotel

DAY 5

Hunamen Ridge to Madkote

Lift up to Hunamen temple, ride up and all way to Madkote. Big Breakfast – take snacks and have food in Madkote, or, if group slow and taking many photos, then arrange for lunch to be brought half way down descent

DAY 6

Rest Day

Attend Local Festival if possible and traditional Village or other local activities. Late afternoon easy local ride and stay in Samoli village in traditional houses or Forest House.

This would add to the experience, being able to stay with local families and spend some time with the community, Samoli has this set-up already so this is the logical place to begin but could be expanded to other areas in the future.

<http://www.tripoto.com/trip/munsiari-a-model-for-inclusive-rural-responsible-5278>

DAY 7

Opposite side of River Trail

Ride one of the easier trails down to Madkote, take lift up as far as possible by 4x4 and then with Sherpas hike the route up to the trail start point. Ride trail down to river. Pick up riders from other side of river.

DAY 8

Helidrop to Milam (or high mountain pass)

This part of the adventure needs more reconnaissance work to find the right option – we suggest either a Heli-drop to the base of Milam glacier and then a 2-day cross country ride back from there, or scout out a suitable 4,500-5,000m mountain pass that riders can be Heli-dropped to the top and take a long descent back down, with an overnight camp

DAY 9

Milam / High Mountain Pass

Day 2 of above adventure trip

DAY 10

Rest day – hike up to Khalia Top in the cooler evening – stay in Guesthouse

Ride easy local trail in the Munsyari town area, then head up to Khalia in the late afternoon/evening to the guesthouse – campfire and drinks

DAY 11

Khalia Top – Second ridge – big day out

Wake early for sunrise on the mountain top, head out onto the far ridge Rurkhann Sener Dhap and descend down to the road to Milam

DAY 12

Birathi Falls Trail. Celebration meal – end of trail riding

Riders have a lie in and late start, lift to Kalamuni temple, ride descent to Birathi Falls, swim and food at the falls. Last meal in Munsyari that evening with plenty of food, beer and wine.

DAY 13

Leave Munsyari by car for Ramnager – overnight at UKFDC site

Travel day, stop for swim in river along route

DAY 14

Day in Jim Corbet National Park

Visit national park, aim to see elephants, tiger

DAY 15

Drive to Rijkesh Delhi / fly home

Drive to Rijkesh – option of rafting if time allows. Fly Dehradun to Delhi and onto return flights

OR, RETURN FROM Munsyari TO DEHRADUN BY HELICOPTER AND MISS LAST FEW DAYS OF DRIVING.



Project Delivery

To progress with this project and move to a stage where mountain biking in Munsyari can be officially launched, the project can be split down into simple Project Stages.

Appoint Project Leader

This first stage will create a job role for the Munsyari MTB project leader who will initially co-ordinate the development stages of the project and later manage the operational side once the region is ready for its first international paying guests.

Action Stage One

Training Local People

This stage would involve selecting four suitable young people from Uttarakhand to travel to the UK and/or Mainland Europe to learn the specific skills required to help them work for the project and deliver a good customer care and service in Munsyari.

They will be required to learn the following core skills:

- *How to ride mountain bikes and ride advanced level trails*
- *Gain experience of purpose built mountain bike trails in Europe*
- *Learn how to build and maintain trails*
- *How to be a mountain bike guide and lead a group of guests*
- *Be proficient in first aid.*

They would gain a huge amount of information and experience during this trip that will all be invaluable to take back to Munsyari. I would recommend that they would need 21 days of hard work to accomplish this.

Action Stage Two

Local Guides Continue Trail Exploration in Munsyari

This third phase would allow the individuals who have been trained in the UK to continue or manage the exploration of the local area around Munsyari in the areas that we have highlighted in this study. We would provide specific areas that we would like to be explored, and they would map and report their findings. There can remain an on-going dialogue between us and the team to provide advice and support during this task. This exploration should include two guides exploring the possibilities of a high mountain pass expedition and/or the trail to ride back from the Milam glacier. As one of these options should be included in the package itinerary if a feasible route is found. This additional exploration work will feed into stage 4 and 5.

Action Stage Three

Team of Sherpas and Trail Builders Begin Trail Works

A team of up to 20 Sherpas and trail builders should be selected and trained, initially by the four individuals who have been on the foreign training trip in phase 2, and later by the international experts. A start can then be made on the works to the existing trails, and later on the new routes.

Action Stage Four

International Experts Return to Prepare Project for First Paying Guests

This third stage would involve a group of six or more international experts coming. The team would be split to conduct two key tasks.

1. Further train local guides and workers how to build and maintain trails. They would begin work on the trails identified in this study as potential routes that require works. They would also check that the works undertaken to date are sound and offer advice on any adjustments and training required.
2. Using the information gathered in stage 3 by the local guides to finalise the exploration of the local area to complete some of the routes that were incomplete or that we did not have time to explore, first time round.

This would include two riders going to test the adventure trip, either back from Milam or from a mountain pass as identified by local guides in stage 3.

Action Stage Five

Munsyari MTB Website Goes Live – Final Media Launch and Promotion

If the international team are happy that the staff are ready and the area has been suitably prepared ready for the first guests, during their time in Munsyari for stage 5, then we suggest the following timeframe and promotion to launch the project to the mountain bike world.

In autumn 2016 we launch the media and film produced from the initial trail exploration and reconnaissance trip.

That is, we release Herve's film and the magazine articles featuring Andy's photographs that will hit the press around the time of Autumn 2016. This will coincide with the launch of the website, ready to take bookings for Spring 2017.

We would recommend that we organise for a group of high profile or celebrity riders to be brought to the area for a final trip to film and promote the area in the Autumn of 2016, this will create significantly more media content, ready to release in the Spring 2017, to book Autumn 2017 and beyond. The momentum will then be set, with previous guests spreading the word about their experience and adventure through the mountain bike community, and the occasional media pass being granted to keep the area at the forefront of riders' attention when they think of big mountain adventure mountain biking.

Marketing Plan

For the area to be successfully launched to the international mountain bike world and for people to start making bookings, it will be necessary to have a structured and co-ordinated marketing plan.

In the initial years, this should be out-sourced to people with experience who work in the mountain bike industry. The study group would be happy to discuss providing this service and could achieve excellent results through direct contacts with the world MTB industry.

As detailed in stage 6 of delivery, the first part of the marketing plan would be a press release, along with the release of the video produced of this reconnaissance study, to promote the brand of MTB in the area.

This would be followed up by a series of articles on the adventure in Mountain Bike magazines, which will introduce to people how they too can experience such a trip by booking one of the highly limited places available on the MTB package.

This will direct traffic and potential customers to the website – it is of vital importance that the website is of an extremely high quality. It must be well structured and designed with stunning images and video to show off the area. This content has been created as part of this study along with the media promotion work, the website is the single most important part of the marketing, it is the shop window for the whole experience and must be slick, professional, easy to navigate and provide good information to help people make what will be a big financial decision to book their trip to Munsyari.

There needs to be a long-term marketing plan developed, with social media pages and MTB celebrities or journalists invited to experience the package every year to keep it relevant and fresh both in the media and in people's minds each new season.

Once operational, if the project is well delivered, then guests will undoubtedly have a great experience and personal recommendation and word of mouth is a very strong and effective method of marketing within the MTB industry. The marketing plan has to make the most of this, by collecting and sharing quotes from happy guests on the website and on social media pages.

The marketing must be both strong and maintained to a high level to ensure the sustainability of the project.



Brand and Image

It is very important to have a very strong brand that represents the industry of MTB in the area, this is what people worldwide will associate with.

The brand name should be short and simple, we would recommend that it is created in consultation with the international experts to ensure it is relevant and effective in the world MTB market.

The branding should play on the strengths of the region and the experience with strong tag line that summarises the area's unique selling points. India, Himalayas, Adventure, Technical Trails and Rugged Terrain, Traditional Culture and a Trip of a Lifetime are all themes that should come across in the marketing and branding.

Whilst there are other opportunities for MTB in the Himalayas, such as Nepal, none are very well developed, well packaged or well promoted in the world MTB media. So Munsyari has a great opportunity and should have the sole aim to become renowned as the most prominent and 'Ultimate Himalayan MTB Experience'.

It is our belief at this stage that the best method of project delivery is for one company to be created to represent the brand and manage the project. It may use several sub-contractors to deliver the package and services, who will all work under this main branding.

Challenges

While there is no doubt that with the right commitment and dedication Munsyari can become world renowned as a destination for a great MTB adventure, there are many challenges that have to be overcome in order to deliver this. In no great detail, these are:

Training local guides and staff in a short period of time

There are already experienced mountain guides in the region, the biggest challenge that they face is to develop the riding skills to a high enough standard to guide mountain biking in Munsyari, as it is an advanced level of riding. If this is not possible, other options would be for local guides to walk the trails in front of a riding group (this is certainly not ideal!), or to use foreign guides until the locals' riding was up to a sufficient standard.

Preparing a suitable medical emergency plan, including helicopter evacuation

This is critical, whilst tourists will love the remote feel of the area and the adventure they are undertaking, when something goes wrong they will want to know that they have the same safety and security as they might in the West.

There is a medium to high chance of a serious injury as a result of a crash on one of the mountain bike trails. In such an instance it is important for there to be a specific emergency response procedure to evacuate the injured rider, this must be a plan that is effective in practice and not just on paper. Difficulties arise from the remoteness of the trails, but also of the remoteness of Munsyari as a town.

At all times the guides must carry a first aid kit. They must also have a reliable method of communicating to the emergency services in case of a serious incident.

The emergency response plan must detail suitable methods for assisting guests with both minor and major injuries. As many of the trails will be in very remote areas, the only realistic way of evacuation is by helicopter.

The significant distance to the nearest emergency unit must be a consideration of the evacuation plan.

A detailed medical emergency plan will be required to be developed and both methods and times of recovery will need to be outlined. **Without this we would not recommend the project to proceed.**

Making the Trail Network Safe

The existing trail infrastructure will involve much work, in order for it to be made suitable for mountain bike use.

It is important to ensure that the trails are as safe as is reasonably practicable. The guides must be familiar with all routes used, must be aware of any potential dangers along the trail, and must be able to communicate these clearly to the group.

The safety of local people need to be considered when planning routes for mountain bike tours. Once the routes have been established, local people should be notified of the routes and dates that there will be mountain bikers using the trails.

Preparing the Trail Network

To develop the trail network ready for guests and to be able to deliver the package that we have outlined it would be necessary to train a team of supervisors who could then lead a team of sherpas to maintain, amend and create trail suitable for mountain bikes. We would suggest two to three teams of ten workers with strong leaders.

This would allow 2016 to be a year of development, to prepare everything for the first paying guests in Spring 2017.

Trail Development

Future trail development and exploration is what will keep Munsyari at the forefront of worldwide MTB adventure tourism. It is important that any project developed has a long term vision and continues to progress the trail network and refine the visitors experience.

Trail Maintenance

Trails will be damaged by water following the snow melt and monsoons, trails could become overgrown with vegetation in the summer, it will be important to have a team who will maintain the trails to keep them in good condition and running well for all groups of guests.

Setting up an Agreement with a Helicopter Operator

It will be necessary for the viability and success of the project to be able to transport guests into the region by Helicopter, as the route by road takes too long to drive.

The project leader will need to find an operator that wants to form a working relationship with the project to provide the Heli-drop service for riders and bikes.

This is well developed and commonplace in many parts of the world, British Columbia in Canada and also New Zealand being two areas where Heli-drops are commonly used for mountain bikes.

The helicopter would transport riders to the drop site first and then return to collect bikes which would be carried under the helicopter by a cable.

In the suggested plan and itinerary the helicopter is used to fly guests into Munsyari and also later in the trip to provide a Heli-drop to either the Milam Glacier or to a High Mountain Pass to begin one of the adventure trips.

For information:

<http://vertigobikes.co.nz/tours/guided-tours/remarkables-heli-tour/>

<http://www.bearbackbiking.com/guiding-and-tuition/whistler-heli-biking>

Consistent and Effective Marketing

Undertaking the steps to convert Munsyari into a hub for mountain bike adventure tours and developing the trails and facilities that will be required is of no use if the marketing strategy is not well executed with a worldwide reach and a sustained presence. It has to reach the right audience consistently through organised activities and marketing to stimulate bookings.



Competition

It is important to review the competition from the surrounding countries and regions when considering the feasibility of the project.

Looking at the potential MTB project in Munsyari; we believe the unique selling points are the appeal of a real mountain biking adventure trip on quality MTB trails in a remote area of the Indian High Himalayan range.

Mountain bikers are looking for increasingly diverse and adventurous vacations and in terms of the places that appeal to them, it is the big mountain ranges that are some of the key locations around the world. The Alps, the Pyrenees and the Dolomites in Europe, the Rockies in Canada and the USA and the Andes in South America. Naturally the Himalayas are recognised worldwide as a place of real wonder and significantly as the range that features the highest mountains on earth. The barrier to most is the perceived lack of accessibility with no well-developed and publicised MTB tourism industry, this is of course an opportunity.

From our research, we identified a few packages that offer adventure MTB tours in Nepal, the majority appear to offer a great cultural experience but the actual trails that they use and the riding is not particularly inspiring for mountain bikers; they seem to be predominantly focussed on dirt roads, which may suit general tourists but not MTB tourists specifically. Munsyari has the opportunity to combine the adventure and culture, together with some excellent trails that will give people the best combined experience.

Some competitor's websites:

<http://himalayansingletrack.com/>

Seems to be predominantly on dirt roads and tours for the natural beauty rather than the trails.

<http://www.nepalmountainbike.com/>

Has a very good video on their homepage showing off some great looking technical riding but the website does not appear to promote this as a riding package.

http://www.ridebig.com/trip_nepal_himalayaheights.php

This worldwide company, partner with local tour providers to offer epic adventures in different countries. They have a good and well developed package and would certainly be competition to Munsyari.

A quote was obtained from Himalayan Single-track and their schedule for a trip which is outlined here as an example of a competitors' programme:

US\$ 2,450 per person

PRICE INCLUDES:

ACCOMMODATION

Three Nights in Kathmandu (3 Star)

Two Nights in Pokhara (3 Star)

Eleven Nights in Teahouses while biking

PERMITS/ENTRY FEES

Upper Mustang Restricted Area Permit

ACAP (Annapurna Conservation Area Permit)

TIMS (Trekking Information Management System)

Kathmandu Sightseeing Entry Fees, Tatopani Hot Springs

FLIGHTS

Pokhara to Jomsom – Tara Air

Pokhara to Kathmandu – Buddha Air

All airport taxes and Service Charges

Excess Luggage Charges up to 7kg overweight

MEALS

Breakfast (16), Lunches (14), Dinner (13)

Traditional welcome dinner and traditional dance

Tea and Coffee during the biking trip

Drinking water on the biking trip (Purified using SteriPen)

TRANSPORT

Airport Transfers (All)

Private Vehicle Kathmandu to Pokhara

Private Vehicle Beni to Pokhara

GUIDES/PORTERS

15 Days Qualified Mountain Bike Guide (MBLA Certificate and Wilderness First Aid)

11 Days Porter, Pony and Pony Handler

Support Guide for group over five people

All Guide and Porter expenses and insurance

WORKSHOP/TOOLS

Full use of Himalayan Single Track Workshop for assembling, washing and packing bikes

Travel tool box carried by guides on tour



Wider Community Benefits

It is anticipated that the development of the mountain bike project in Munsyari can have benefits that reach wider into the community.

Migration Control

Development of the area as a mountain bike tourism destination will provide a new, fresh and exciting industry for young people in which to work and to help grow their local tourism industry. In a rural area where opportunities are low and many younger adults head for the cities to work, this could be a very positive step to stem the outward flow, with young people becoming more interested and proud of their parent's and grandparent's traditions as they realise the interest shown by visitors in the traditional ways of life in the mountains.

Waste Control

One thing that struck us during our time in Munsyari was the amount of waste and litter, both around the town and also found on the route to Khalia top. For a Western visitor this is a real sadness to be surrounded by such natural beauty and to see it contaminated with plastic and general waste, some of which may never decay away. A community initiative of the project that could extend beyond the mountain bike development itself would be to develop a waste management plan that could help to serve the town and to further educate the local children in the importance of waste control. There is a real, tangible reason for doing this; in order to bring in new tourists from overseas to Munsyari to ride mountain bikes, and to sustain or grow the popularity of the area. This is important. Eco-tourism is gaining in

popularity and the current on-going poor waste management could have a detrimental impact on guests returning in the future as they would make negative comments on internet forums or travel sites such as Trip Advisor. I would suggest it could be a long term local goal that initially focuses on the streets and area immediately around the guesthouses and the main routes to and from Khalia top, but is planned to expand across the region over a few years.

Community Projects

It is suggested that an inclusive way to gain support and momentum for the Munsyari MTB project would be for a percentage of the profits generated from the project to be set aside for small scale community projects, whether that be to upgrade paths in villages, water supply, schooling or works to temples. With a system that allows village heads to apply for community funds at the end of each year, the wider community beyond those directly employed by the scheme can see the benefits to the local area of this form of mountain bike eco-tourism.

Ripple Effect to other Tourism Sectors

Creating a small premium mountain bike industry in Munsyari will only serve to support the development of other areas of tourism in the region. The development of trails will help improve the network available for trekking, bouldering and expedition climbing. The development of facilities will help to support the tourism industry and the marketing materials and approach of the MTB project could be used as a model to promote and package other activities to a wider audience.

Suitable Mountain Bikes

Now that the study team have experienced the terrain in the area, we can advise what type of bikes are suitable for use in Munsyari. The six La Pierre bikes purchased by the project are not well suited to the more rugged and advanced terrain in the region, they will be fine to use for a bike school or on beginner trails.

Mountain bikes vary hugely in their specifications and their suitability for certain riding applications and terrain. Even something as simple as the tyres can make a big difference as to how a bike rides and how safe or easy it is to ride.

The main considerations to consider in choosing or recommending suitable bikes for use in Munsyari are as follows:

Frame Design – The amount of suspension travel and frame geometry, and the complexity of the suspension linkage.

Strongly Recommend: The geometry should have slacker angles for steep mountain descents and steps, the suspension travel should be 160mm and the linkage should be as simple as possible to limit repairs and maintenance.

Forks – The amount of suspension travel and the brand (quality) of the fork should be considered.

Strongly Recommend: 160-170mm of travel and good quality brands such as *Rock Shox* or *Fox Forx*

Wheels – Wheel size and strength.

Strongly Recommend: 27.5" wheels with a reputable brand of rims (Mavic, Stans, DT) and hubs to ensure strength.

Strongly Recommend: 200mm front rotor, 180mm rear minimum diameters.

Of all of the considerations listed above perhaps the most important is simplicity when it come to the frame design and suspension linkage – with no existing MTB industry in India it is imperative that the bikes are simple to maintain and reliable.

Tyres – Tyre thickness, width, rubber compound and tread.

Strongly Recommend: Tyres should be at least 2.3" wide and of a softer compound to grip on the stone. Request advice.

Brakes – Hydraulic disks are a must; the size of the rotors should be larger than standard to cope with the heat of high alpine descents.

The bikes should be very similar in terms of their design and specification to those of Orange Mountain Bikes from the UK. The bikes are handmade and renowned for being simple, tough and low-maintenance which will be essential in this more remote area as having to repair bearings and linkages regularly on more complicated designs will not be possible.



Financial Feasibility and Conclusion

Outline Financial Assessment

We have conducted an outline high level financial assessment to assess the viability of the project.

Please see supporting spreadsheet document for Munsyari MTB for more details including:

- Start-up and Development costs
- Costs to deliver a single package trip
- Income from a single package trip
- Indicative Profit/Loss for year one of operation
- Indicative Profit/Loss for year two and three

The model shows the importance of marketing the project effectively and professionally delivering the tours, as it will be important to run at capacity and to develop from single groups of eight guests to two groups of eight running side by side, as this makes the project financially viable.

Once the project develops to the next phase of sixteen guests per trip, it provides a decent return. A further eight will increase this again but it should be built up slowly to ensure that the quality is maintained.

It must be highlighted that these are indicative costs that should be researched further.

The initial key role for the project leader would be firstly to review all of the project costs and see if there are any opportunities for savings or running the tour in a more cost efficient manner whilst retaining the overall customer experience, and secondly to conduct research into other worldwide adventure style MTB trips to assess their capacity and frequency to use as further reference points of the likely capacity that would be achievable in Munsyari.

Importantly the assessment shows the potential for a direct financial benefit to the operator and the region, in addition to the wider benefits of the project.

Conclusion

With full commitment, support and the necessary resources made available, it is clear that Munsyari can become an excellent venue for bespoke high value mountain bike adventure tourism.

Crucially it only requires a relatively small capital investment from the government to launch and develop the project, which will relatively quickly create a decent return on the investment if operating at full capacity.

The financial profit could be utilised to help develop community resources, such as schools and simple community infrastructure projects, alongside re-investment to support the on-going exploration and development of the Munsyari MTB project.

It is necessary to develop new trail routes and to conduct a considerable amount of works on existing trails in order to realise the vision, and for the project to be viable.

It will be important that the knowledge and experience of industry experts is utilised to ensure that the project remains viable, relevant and current to the market as it progresses through the development phases. The project delivery should be managed in a professional environment by the chosen project leader to ensure the risks are managed throughout.

This report identifies the opportunities for the region in developing a MTB eco-tourism industry, along with the challenges it faces to reach operational status, plus the steps required in order to develop the project. All of these challenges and proposed development steps need to be carefully considered and carried out in order to create a successful business; should any of the problems noted be ignored, it could have a very negative effect on the overall project viability.

We recommend this report to be used in conjunction with further due diligence.

Glossary of Terms:

MTB:
Mountain Bike

Trails
Paths or routes travelled by Mountain bike.

Flow
A fun and rewarding style of mountain bike trail. Flow is considered an important factor in the quality of a mountain bike trail.

Technical

This is a more challenging style of trail that can feature many obstacles such as tree roots, rocks, steps. Usually slower than a flow trail.

Suspension

Usually in the form of a front suspension fork and a rear suspension unit in the frame that helps to improve the bikes ability to travel over rough and challenging terrain.

Disk Brakes

These are hydraulically powered disc brakes used to stop the mountain bike. They are like lightweight scaled down motorbike brakes.

Guides

A skilled and experienced rider who safely guides and manages a group of mountain bikers along and down a trail. They must be knowledgeable and familiar with the trails which they guide on, to highlight areas of risk.

Mechanics

A skilled or trained person who can conduct maintenance and repairs on mountain bikes.

Exposure

This is the term used to describe the presence of exposed steep drops and cliffs to the edge of a trail. Often trails traversing a very steep sloping valley side will be very exposed on their outer edge. The risk is intensified when travelling at relatively high speeds on a mountain bike versus walking the route as a pedestrian.

Stone pitched

This is the traditional method of trail armoring using pieces of stone laid tightly together on their ends like a book shelf. It is hard wearing and can provide grip, it can be good to ride on a mountain bike, but can also be uncomfortable or less enjoyable if for long sections.

Switchback

A 180 degree turn on a trail.

