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Final Report

Nepal / Madi Eco-Village

Self-sustainable, clean, community-based eco-tourism development in Chitwan District, Nepal

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1. Summary

Madi Eco-Village is a community-based project to develop regenerative eco-tourism in Nepal by establishing eco-tourism business model units at village level. The project is situated in the Madi valley, at the edge of the World Heritage classified and internationally well-known Chitwan National Park in the southern part of Nepal adjacent to India. The Madi eco-tourism model units each contain two homestay cottages and a communal hall, all equipped with solar energy, safe drinking water and a smart waste management system. The goal is to promote holistic, ecologically and socially sustainable tourism in the hands of village communities, aiming at creating business- and job opportunities and encouraging perspectives at local level.

The main elements of the project are:

- Design and construction of buildings according to traditional design, using natural, locally available materials while integrating modern, climate-efficient comfort
- Off-grid solar energy supply and safe drinking water treatment
- Smart waste management system for the homestay including the village
- Hospitality management and maintenance training for local operators and staff
- Job / income creation through locally based eco-tourism business
- Promote the Madi model of holistic, locally based eco-tourism throughout southern Nepal.

Originally, four villages were included in the project plan. In the course of the site selection process at village level, faulty communications and misunderstandings occurred regarding ownership and participation, which led to a gradual loss of support and dedication in three out of the four villages. We have therefore decided to concentrate resources and activities on the most active community in Bankatta village, in order to develop a successful model unit to be replicated later on.

By the end of this first project phase, a model design for the homestay infrastructure has been developed and implemented at Bankatta village, a clean drinking water treatment plant has been installed, the off-grid solar energy units are installed, a waste management has been elaborated and shared with the village community, a local project management team is in place and the community is prepared for operation in the domestic tourism sector.

The main challenges during the project were the long-lasting decision-making process at village level of the four original sites, severe obstacles in acquiring the funding contribution committed by the local government, and the weak management, communication and implementation skills of our local project coordinator. However, the largest obstacle was the outbreak of the Corona pandemic and the prolonged lockdown period, leading to a more or less full stop of activities over nine months. The Covid-19 lockdown also resulted in a lack of available work force and adequate materials and left the villagers in the struggle for their own personal livelihood. Thanks to strong endurance and motivation of all partners, construction work could be re-launched in December 2020, progressing well during the relatively stable period of “normal operation” until April 2021. In the second lock-down period in May/June 2021, the community was well-enough prepared to continue working self-dependently.

With completion of the interior design and furnishing, the installation of solar energy units at Bankatta, and basic training of local staff and villagers in hospitality operation, management, maintenance and waste management, the eco-tourism business will now be gradually handed over to the local community. Full operation of the Bankatta Eco-Village unit is planned for October 2021.

Given the unique geographical location at the edge of the nationally and internationally highly frequented Chitwan National Park, given the increasing sensitivity and market for sustainable eco-tourism and given the great opportunity for tourists to experience authentic cultural and natural heritage, the Madi Eco-Village project has the potential to boost regenerative, village based eco-tourism – in the Chitwan area and in Nepal as a whole.

2. Starting Point

In Nepal, a country rich in cultural and environmental heritage, developing a holistic, regenerative tourism sector is key to the country's sustainable development. The project goal was to design and implement a best practice model for high-value ecotourism development in Nepal's Terai region, with unique replication/multiplication opportunities in the region as well as other areas of Nepal.

Traditional rural setting: women planting rice (left), water buffalo transportation (right, photo credit SMA)

Madi is a pristine rural valley located in the bufferzone of the World Heritage classified Chitwan National Park in the southern part of Nepal adjacent to India (Fig. 1). Unlike the well-known and developed areas to the north of the National Park, where destinations like Sauraha, Amaltari and many lodges and resorts along the Rapti river have been attracting tourists of all segments for decades, the 218 km^2 Madi valley is only just beginning to be discovered by outsiders. Many people in Madi live on the base of the economic pyramid, with a high labour migration ratio. They rely on agriculture and fishing for their livelihood, while large-scale businesses and infrastructure development are not permitted in the bufferzone. The community-based eco-tourism business model is considered as an economically viable, ecologically and socially sustainable option to increase resilience of the Madi Valley people in the long term. Furthermore, by providing the women groups of ethnic minorities as marginalised groups an opportunity for a self-sustainable economic income, the project contributes to social inclusion in Nepal.

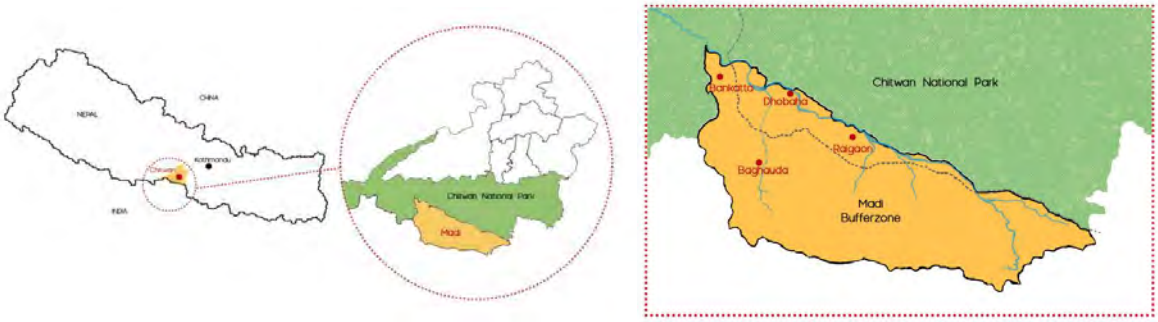


Figure 1: Project location map: Location within Nepal (left) and location of the 4 pilot villages (right)

3. Objectives

The goal of this project is to design and implement the infrastructure foundation of a holistic and economically self-dependent eco-tourism business model in four selected villages of Madi Municipality, in close collaboration with the Women's Groups of the local communities (Fig. 2).

- **Objective 1**: Design and construct climate-efficient **buildings** based on **traditional design, using locally available natural material**, to enhance both resource efficiency and ecotourism potential;
- **Objective 2**: Design and implement the **off-grid solar energy supply**, considering the whole lifespan: Selection, implementation, maintenance/repair, and awareness creation.
- **Objective 3**: **Clean, efficient resource management** through **safe drinking water supply**, urine separation toilets and a **comprehensive waste management system** for all waste fractions.

While directly ensuring access to reliable and sustainable energy for the communities (Sustainable Development Goal SDG 7), the proposed project is embedded in a longer-term project plan to develop holistic ecotourism models aimed at safeguarding the cultural and environmental heritage of the Himalayan Region (SDG 11.4).

4. Project Review

4.1 Project Implementation

The project was managed by a project consortium of two international and two national partners, in partnership with the local government, Bufferzone Committee and the women of the 4 villages (Fig. 2).

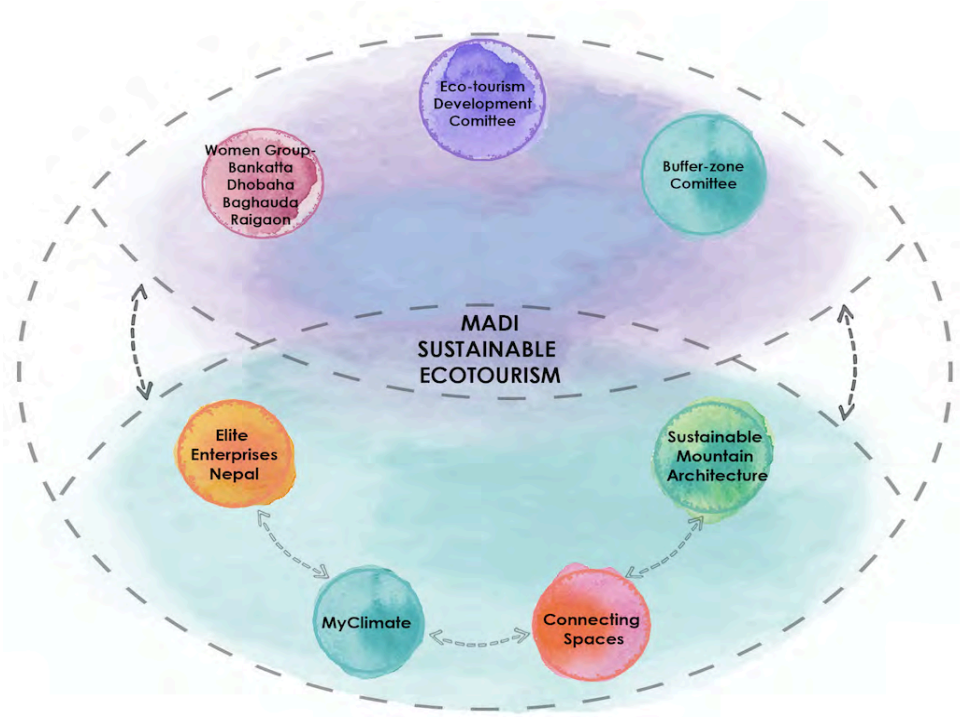


Figure 2: Original project organization: Project consortium (below) and local project partners (above)

The project was implemented in four Work Packages: Design Phase; Construction Phase; Initializing Operation; and Project Evaluation (Fig. 3). Capacity building and training are conducted throughout.

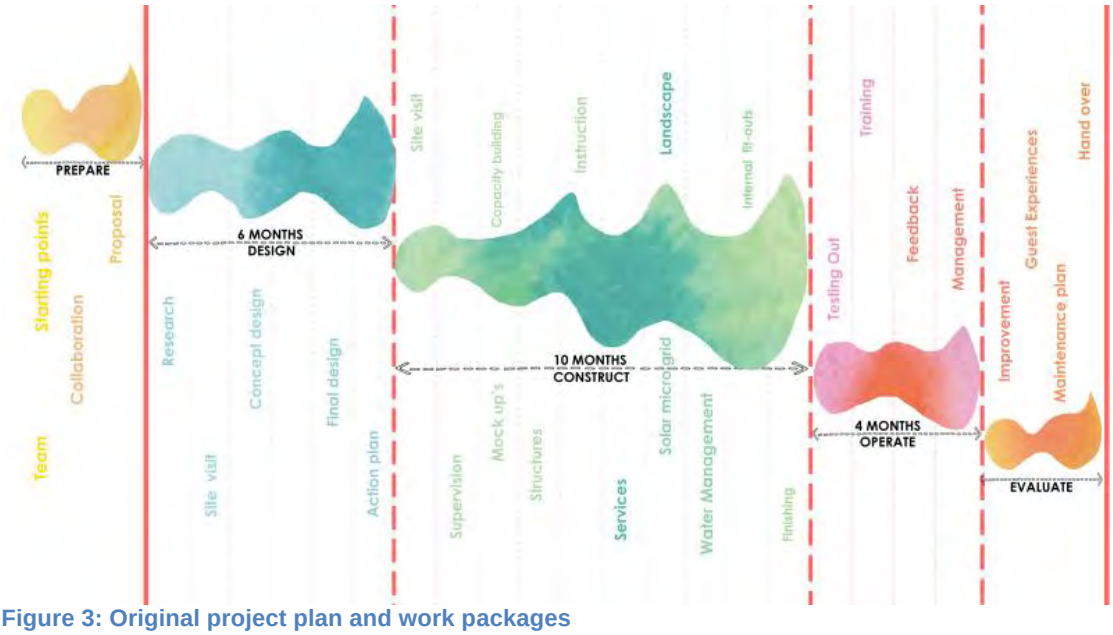


Figure 3: Original project plan and work packages

Design Phase

The design phase was implemented according to the project plan, with **a series of site visits** to:

- Initialize collaboration and build project relationships with the target communities;
- Initialize collaboration and sign funding agreements with the local government agencies;
- For the Sustainable Mountain Architecture (SMA) team to collect a vernacular design element library based on their observations of the culturally distinct styles and local construction materials.
- Select the building sites and finalize the building designs together with the communities.

The following **collaborations were established**, in addition to the project organization in Fig. 2**:**

- A **Social Mobiliser, Ms. Sanshila Hamal**, was hired full-time to coordinate meetings/visits on site, facilitate awareness creation and operation, and support communication with the local partners.
- All structural elements of the communal hall as well as most interior design elements, furniture and accessories of the homestay buildings are produced from local bamboo, with technical support by Terai-based **Green Bamboo Creation**.
- We mandated Kathmandu-based **Doko Recyclers** with the task to assess the waste situation, educate the community on waste management and develop a smart waste management system. This partnership allowed maximizing synergies with local experts in waste management.

myclimate conducted an **LCA study on solar micro grids** available in the area to establish the best practices over the entire life-cycle and to identify worst practices that should be avoided. “From an environmental point of view, the optimal solar micro grid case in each life-cycle phase is as follows:

Production:

- Eco-design: as little material input as possible, as little composite-material as possible
- Raw materials from sustainable extraction methods; Raw materials from regional suppliers
- Production in a factory with an excellent power-mix (renewable energy)

Transport:

- Regional production with short transport distances
- Light products; Technically high-standard transportation vehicles

Use-Phase:

- Well working servicing system, with regular maintenance
- Component-based repair system to avoid waste; Skilled and motivated users and technicians
- Extended life-span of batteries, panels and other Solar Micro Grid components

End-of-life (compare also SRI publication 2017)

- Proper depollution and dismantling of end-of-life products;
- Taking care of problem fractions such as batteries and PV panels.
- Reuse and/or recycling of Solar Micro Grids through best-practice recycling processes and collection systems.
- Avoidance of open dumping of Solar Micro Grid components.
- Avoidance of unsound smelting and open burning practices.”

Construction Phase

During the Construction Phase, the project experienced a number of challenges and unexpected turns of events, which led to significant **time delays on site**, severe **funding contribution gaps from local side** and **significant overtime on behalf of the project consortium**. In order to be able to meet the holistic project goals despite these challenges, **the project plan was revised in May 2020**.

From four village model units to the Bankatta Eco-Village model:

- The project intention is to collaborate with responsive and engaged communities in order to establish long-term successful and fruitful business operations. After a few months into the project, **Raitole** and **Dobaha** villages requested to quit the project. They were already experiencing challenges to mobilize their community and participate hands-on before construction had started.

- In **Baghauda** and **Rathaani** villages, while there were a few interested individuals, the sense of ownership and engagement was missing, and communities were either not mutually supportive or lacking the confidence needed to take on the project. In May 2020, already having constructed the homestay foundations, we decided to hence only provide technical support in the future, if directly requested for by the community, requiring them to show and take responsibility and ownership.
- The community in **Bankatta** village **has been the most engaged and collaborative from the start.** Here, we observe significant potential for a successful homestay operation. Thus, in the course of reassessing our delayed project plans and tight budget in May 2020, we decided to focus our resources completely on establishing a successful eco-tourism model in this promising village, and thereby setting a concrete example for the other villages to emulate in the near future.
- In the course of reassessing community participation, project plan and budget, we also decided **not to build the planned viewtower** during this project phase, but rather concentrate on those components immediately relevant for a successful homestay operation. *Note*: This component had been controversially discussed since project start, in terms of its purpose, meaning and value for the project when compared to the effort required to construct it.

Weaknesses in local project management, local funding gaps, overtime of project consortium:

A few months into the project, our project initiator and local coordinator had started to reveal severe weaknesses in management, communication, team-play and on-site implementation. This caused a series of hindrances, disturbing the project team's motivation, straining relationships with local partners (communities and government), ultimately delaying the project and impeding local fund flow.

- The 9-party agreement on collaboration and funding contribution was signed on the **basis of incomplete information**. Once revealed, this turned the local government partners against the project and halted the release of promised funds, which in turn led to heavy delays of construction work and prolonged frustration on the side of our local community partners.
- This was aggravated by a **financial crisis of Madi Municipality** due to budget mismanagement and left the **municipal stakeholders unable to contribute the funds** they had agreed to initially.
- Luckily, the **resulting gap in the 50% matching fund contribution** needed to release the REPIC funds could be balanced off by the **overtime efforts of the project team**, as in-kind contribution.
- **Internally in the consortium team**, our local project coordinator's difficulties in collaboration and teamwork, and his diverging viewpoints on the project rationales required **bi-weekly team calls** in order to keep project partners aligned and to clarify communication between them. The team required several **unplanned site-visits**, to ensure work progress, facilitate in-team collaboration, clarify misunderstandings with the local stakeholders and resolve blocked work situations on site.
- **Threefold re-design work of all buildings** by the SMA team was required, because the insufficiently informed and facilitated communities were confused about the project concept and therefore repeatedly requested to change building sites.

Project consortium reorganization:

Numerous attempts to clarify and resolve the above challenges within the project consortium and with the local stakeholders were not successful. Finally, in March 2020, our local project coordinator requested to quit the project, due to heavy stress symptoms and health issues he was experiencing. (Looking back, the strengths of our project initiator clearly lie in project development and funds acquisition, and not in project implementation.)

To our great luck, we found a strong replacement with **Mr. Susant Tiwari (NEFACO)**, who had previously built his experience in the REPIC-supported Nexus Center project. Upon starting collaboration, Mr. Tiwari took immediate action, held interviews with all community members and government bodies previously involved in the project and delivered a problem analysis and solution proposal to us within 2 weeks. The conclusion of this analysis was the **project plan revision in May 2020**. Mr. Tiwari continues to coordinate and manage the project on site in effective, responsible, professional manner, proving high social, business and management skills.

Smart Waste Management System:

This project component has been running efficiently and according to the project objectives, thanks to the mutually positive collaboration and synergy-building with the Doko Recyclers.

Traditional bamboo curtain, decorated with candy wrapper upcycling art (left); Waste separation exercise with the community, led by the Doko Recyclers (right)

- The Doko Recyclers carried out a **waste assessment/audit** followed by two blocks of successful and highly appreciated **waste management trainings to the community**.
- In the aftermath of a sensitization workshop with the local government agencies, the **Doko Recyclers were asked by the municipality to assess the municipal waste management situation** and propose a **scenario for more sustainable waste management**.
- **Urine separation toilets**: For this project phase, for time- and resource-saving reasons we decided to construct regular toilets based on a seepage pit system. While urine separation toilets would be a perfect solution from the point-of-view of the project consortium, acceptance and operation modalities by the community would require a close guidance over first operation period. We propose this component to be implemented in a later stage, once regular operation is fluid.

myclimate conducted an **LCA study "on the environmental impact of different waste scenarios"** of the six fractions: glass, metal, organic waste, paper, plastic, and textiles. The results imply that "neither open burning, nor dumping or landfill are viable options for a sound and safe waste management. Even the incineration of materials is in the long run unacceptable, because valuable materials are burnt, which is against the idea of a circular economy. Recycling will be the solution of today, tomorrow, and in the future. In case of the Madi valley, this is easier said than done. Sound recycling practices require a good infrastructure, excellent logistics and collection schemes, and willingness to do the next steps. Without an external funding possibility, establishing a collection service for small communities in the Terai area is not easy, and the closest recycling companies are located across the border in India". The **first steps in implementing a sound recycling scheme** according to our findings are proposed as part of the additional funding request (Chapter 5).

Safe water treatment system (left); micro solar system / household waste dumping site in Bankatta (right)

Safe Drinking Water System:

We have been in close contact with Weconnex during the past year, with the aim to create synergies and learn from their experiences of establishing drinking water treatment systems in the region for the past years. We were able to buy one of their Trunz Water Systems second-hand, along with the required supportive equipment. Most important in this collaboration is the opportunity to benefit from the technical expertise of NEFACO for installation and maintenance, as they had gained experience in this field during Weconnex's Nexus Center project.

Safe water treatment system: Filtration at homestay (left, mid); Treatment plant at community hall (right)

The Covid-19 pandemic

In May 2020, with the revised budget and project plan, we were back on track, and conflicts with the local government were gradually being resolved thanks to social and negotiation skills of our new project coordinator. The Bankatta community had been patiently standing by, looking hopefully forward to receiving concentrated support and the funds they needed to re-launch construction work.

Unfortunately, by this time, the Corona pandemic had reached Nepal and a prolonged lock-down had begun. While it was important to keep communication on-going and pay salaries and other running costs, the lock-down further hindered the project progress by another 9 months, due to restrictions as:

- The service delivery chain was blocked because all people were required to stay at home, and borders with India and China (main supply route for most goods to Nepal) were closed.
- Construction workers (e.g. carpenters) had to stay at home.
- All inland transportation was stopped, so workers could not commute and no site visits were possible to support the community.
- Government offices were closed, further impeding the process of releasing local funds.

Construction of the buildings could finally be taken up again in Bankatta in December 2020 and is now close to completion. The remaining work is the design and implementation of the interior design and furnishing and the installation of the solar energy units.

Capacity building and training

- 2 of the 3 planned community **waste management trainings** were held by the Doko Recyclers (see above). A final training module shall be held after construction is finalized, focusing around implementing the waste management system through a community waste recycling center.
- **On-the job training in bamboo construction and crafts** through Green Bamboo Creation. With this additional capacity building initiative, we revive the potential of bamboo as a locally available regenerative construction and design material, and create alternative livelihood opportunities for the community. Additional value-chain options for production and export to Kathmandu/ abroad are planned and will be implemented in collaboration with our local project coordinator, Mr. Tiwari.
- An **exposure visit to a successful Tharu community homestay** was organized for the women in February 2020. This visit allowed the women to gain practical understanding of a community-led

homestay, talk to the women who manage it and share experiences and insights with their future peers. This unique event was highly appreciated and empowering for all women involved.

- Further capacity building activities, in particular **for homestay management, operation and maintenance** shall be integrated into a follow-up phase, if funding can be acquired (see below).

Initializing operation; Feedback & Evaluation

As interior design implementation shall be finalized during the monsoon and rice planting/ harvesting period (when the community is fully engaged), the **official opening event** is targeted to take place in September 2021, a month before Nepal's main holiday season (Dashain & Tihar festivals).

A series of **informal tourist dry runs** are being planned during the coming months, with the aim to build capacity, provide practical experience and receive benevolent feedback for optimization in preparation for the opening event. **Feedback & evaluation** will be conducted during the opening event. Luckily, the government had recently established a few low-price standard-design homestay huts in Bankatta, which are already receiving local and regional visitors. This provides the community the opportunity to already practice hospitality on local/domestic level.

The project budget has been fully utilized by end of April 2021. The final stages of the project above described can therefore only be completed as described above, under the condition that the necessary funds to cover these steps can be secured – either from local or international sources.

4.2 Achievements of Objectives and Results

The project goal to design and implement the infrastructure foundation of a holistic and economically self-dependent eco-tourism business model, in close collaboration with the Women's Groups of the local communities is being reached. Rather than spreading resources in a shallow way over four villages, we decided to concentrate in depth on that community which revealed itself to be the most interested, engaged and ready for managing a long-term successful tourism operation. Once this model unit will be successfully completed, it will provide a promising example for future replication.

In **March 2021**, **project leader M. Schaffner** seized a window of opportunity to **visit Nepal,** given Covid-19 travel restrictions were temporarily being relieved. This was instrumental to give her a first-hand understanding of the present project state, to fuel the motivation of the community with a sense of on-going support, and to assess the potential of this community to take on a long-term successful tourism operation. **Her observations confirmed the selection of Bankatta as our focus village.** Through the prolonged period of uncertainty and challenge, the community had not given up. They are well organized, motivated and willing to contribute and take responsibility and ownership from their side, to bring this hospitality model into successful operation.

Project success stories

Authentic buildings honoring cultural heritage and preserving the environment, built from natural, locally available material while providing contemporary comfort. These buildings showcase to the guests as well as their hosts, the unique beauty and value of vernacular architecture and natural renewable building materials - also and even more so - in today's globalized world.

The process of working with the people: The Bankatta community and the project consortium have proven substantial amount of energy, endurance and stamina in the face of the prolonged period of uncertainty, with strained stakeholder relationships, lack of funding commitment and challenging personal / management skills, which had already hindered project progress before the corona pandemic. The fact that buildings are now nearing completion, after the prolonged and uncertain project full stop during the corona lock-down, is a strong indication of a truly committed and passionate project team – precisely those characteristics required for long-term sustainable project success.

Connecting and synergizing with local partners in waste management, local building design, solar energy and drinking water: Collaboration with project partners we brought on board: Doko Recyclers, Green Bamboo Creation, Saral Urja and NEFACO: These are all very beneficial, mutually supportive collaborations which allow us to reach our project goals, while strengthening our partner's experience base, allowing them to increase their positive impact and customer reach in the long term.

Capacity building and knowledge transfer has taken place for people living in Madi

- Discussions and interactions with the women of the project consortium (Monika, Alisha, Shuvashna, Aarati) opened horizons and **empowered the self-confidence of the local women**.
- Significant **knowledge transfer** has happened and many people in Madi have increased their insights and knowledge on sustainable development and regenerative tourism through the fact of REPIC project team members' going there and communicating about the holistic approach.
- Specifically through the SMA work, local people have seen and understood the **authentic design process, ideas and drawings** and been introduced to the concept of **using local bamboo**.
- The **community was able to independently continue construction** during the second lock-down period (May/June 2021), finalizing the second homestay building based on the knowledge and skills they had acquired while building the first homestay hut.

Very specific people were trained and guided on the job (gender-balanced)

- **Susant Tiwari** is a talented and self-responsible young professional, who has received great exposure, experience and understanding of sustainable approaches and their added value to development projects. He will take these experiences with him on his future professional path.
- This also goes for all partners involved in the project, the **many (also many female) members of the SMA team**, as well as the project consortium partners.
- **Sanshila Hamal**, our social mobiliser: The young local woman has learned a lot from working with our team, and has been particularly inspired by the female members (Monika, Shuvashna, Aarati) about the holistic project approach, about how to take up tasks, how to document, communicate and facilitate with various stakeholders in a professional and self-confident way.
- **Yubraj Mahato**, whom we hired as site supervisor: As a young local engineer he increased his knowledge in several fields like technical (reading drawings, setting out, leveling, using local material rather than imported) and social (communication, how to work with local people...).

Impressions during construction in March 2021: Homestay (top left) and Community Hall (top right; photo credit: Green Bamboo Creation), with details in wood, mud, elephant grass and bamboo (below).

Visibility; Public interest in the project and the destination:

- Interest in the project was signalized through the **Import Promotion Desk Germany** (support for market access in Germany/Europe), and first discussions on possible collaboration held with M. Schaffner (pre-Covid-19) (https://www.importpromotiondesk.de/produkte/nachhaltiger-tourismus/)
- M. Schaffner has joined **The Long Run** "A sustainable travel movement helping business, nature and people work together for a better future" (https://www.thelongrun.org) where she presents our lessons learnt, while gaining further insights / knowledge, which in turn enhance the Madi model.
- **Explorative meetings in March 2021** revealed interest in the Madi Eco-Village model, and we have a line-up of interested people (domestic and international) waiting to visit as first guests.
- **Several newspaper articles and online events** have featured the project during its development (see references). The most recent article in the renowned English weekly newspaper **"Nepali Times" portrays the Madi project** among three selected high-value eco-sustainable destinations in Nepal (https://www.nepalitimes.com/banner/tourism-that-treads-lightly-on-the-land/). A follow-up story is already scheduled when the Eco-Village is ready for opening.

4.3 Multiplication / Replication Preparation

According to Lisa Choegyal, co-owner of a pioneer resort in regenerative tourism (Tiger Mountain Pokhara), with over four decades of experience in Nepal, the **Madi Eco-Village project has a significant potential as model and new eco-tourism standard for Nepal**. Not only for the Terai zone but also in the Hill and Himalaya zone, she sees replication opportunities through the local market (successful models are easily replicated in Nepal) as well as through explicit follow-up projects (roll-out of the approach to other regions). Specifically, the approach developed and tested in Madi could serve as climate adaptation model for mountain communities. With view to the current climate adaptation debate, it is expected that funding sources for such initiatives will be increase.

connecting spaces as one of the key carriers of the project, is establishing a focus on consulting services in this field, both in terms of quality improvement of existing destinations as well as planning support for new / re-oriented places. During her visit to Nepal in March 2021, M. Schaffner developed first concrete ideas together with local partners, with the aim to replicate holistic homestay businesses in the Himalaya zone based on the experiences and lessons learnt in Madi.

The successful Bankatta model will lay the foundation for future replication: If successful, emulation takes its own dynamic. We identify the lack of project ownership and engagement in the villages of Baghauda and Rathaani partly due to miscommunication at project start. But we also see the potential of these communities to emulate the project model once they see it successfully launched in Bankatta. REPIC has funded the foundation (in its true sense), and by proving engagement from their side, the individuals or communities will be able to access required funds and fuel motivation to finalize these units when they are ready.


The community hall – with Elephant Grass roof (left); with community planting rice (right)

Madi is a small valley where everybody knows each other and people talk and share stories of other villages. Once the Bankatta model unit is up and running, other communities will see that this model is beneficial for the Women's Groups and for the resilience of the village. The model offers a real alternative for labor out-migration and this has been a significant success of the project so far.

4.4 Impact / Sustainability

Within the community of Bankatta and amongst our local project partners, we perceive a great willingness and eagerness to learn, understand and grow their awareness about conservation, sustainability and means to achieve authentic tourism.

Homestay 2, built independently by community during second lock-down

From site visit to site visit, our local project manager Mr. Tiwari observes how their members implement lessons they learn on the way:

- The local building style has recently been used more frequently again and put in value by the community on their own initiative, also with respect to details (see photos).
- This indicates that local awareness on the significance of their cultural heritage is growing: Traditional buildings are climate-friendly, comfortable places to stay in, as opposed to the standard concrete buildings people emulate and aspire to, because they associate these with modern, globalized well-being.
- During our recent visit in March 2021, we brainstormed with the community on how the interior design of the homestay cottages could be inspired by their traditional crafts and the natural material available. There was an easy catch of the idea and we could see a first sense of pride in their heritage lightening up their faces.
- During one recent community meeting, one woman passionately shared that she had been so inspired by the fact that this women (M. Schaffner) is coming all the way from her home country to support a project dedicated to safeguarding her traditional natural and cultural heritage. This had touched her deeply, so that she had chosen to come home, to work in the Madi Eco-Village business, rather than finding work outside.

Building back in traditional style: Door and garden deco of local leader Santosh Bot's new house (left, middle), Alisha Adhikari (SMA) chatting with local woman on traditional climate-friendly porch

The local women actively participated and showed high interest in the waste management trainings conducted by Doko Recyclers. Some of the members shared with us that “finally we’re given skills and knowledge to deal with our waste in more meaningful ways”. The current absence of managing waste is rather due to lack of alternatives than to an indifference of the people. So, if there is a better way than burning, or dumping waste in the river, then this alternative solution will be readily taken up.

The following table summarizes impacts on sustainability indicator basis.

Ecological	**Unit**	**At the REPIC Project’s Completion**
Installed renewable energy capacity	[kW]	5.3 kW
Renewable energy produced	[kWh]/year	48 kWh daily load
Amount of fossil fuel energy saved	[kWh]/year	48 kWh daily load
Greenhouse gas reduction	[t CO_2-eq]/year	150 t CO2 saved by recycling waste instead of open burning. By securing a constant / reliable solar power supply the burning of diesel (generators) is minimized.
Newly collected and separated waste	[t]	0.134t/year (367.5 g/day), for the village of Bankatta. Current situation; increase to be expected through tourism business.
Newly recycled waste	[t]	0.117 t/year (320.5 g/day recyclable waste). Current situation; increase to be expected through tourism business.
Economic		
Triggered third-party funding/investments	[CHF]	To be expected, through future replication of the approach (e.g. climate adaptation projects through sustainable tourism in the Himalayan belt).
Social		
Number of beneficiaries	[Number]	600 (population of Bankatta)
Number of new jobs	[Number]	20 (2 homestays, operated in rotation among 12 families + 1 manager + 1 waste manager + 1 local technician + 3 bamboo producers)
Number of trained personnel	[Number]	107 (social mobiliser: 1; site supervisor: 1; waste management in three villages: 75; hospitality (women’s group): 20; bamboo construction: 10)

5. Outlook

5.1 Multiplication / Replication

During the site-visit in March 2021, connecting spaces explored potential solutions of **partnering the community-based project with a private-sector operator** well established in Nepal’s sustainable tourism sector. This would serve as a valuable **marketing & promotion** opportunity for both sides, while providing the community with **long-term, high-quality operation & management support**. Potential partnerships include the following:

- The Community Homestay Network (www.communityhomestay.com)
- Lisa Choegyal of Tiger Mountain Pokhara (https://www.tigermountainpokhara.com)
- WWF Nepal and their travel partner intrepid travel (a global, B-Corp certified positive impact tourism operator: https://www.intrepidtravel.com/)
- Raj Gyawali, founder of socialtours (https://www.socialtours.com)
- Bikesh Rana of Himalayan Ecological Treks (https://www.himalayanecologicaltrek.com)

Exploratory discussions with these experts revealed a significant interest in the Madi Eco-Village model, marking its **high innovation potential** for diverse domestic and international target audiences and potential market formats.

Even before completion, we are experiencing international replication interest from various sides:

- As a part of Road to COP26 campaign, the **British Council** is covering interesting stories in the field of climate change and gender equality, through their Virtual Heritage Tour (VHT) Series, for which they have asked to feature Madi Eco-Village project to highlight women's contribution to climate action, through sustainable architecture work.
- One of their projects in **Pakistan/Bangladesh** pilots sustainable architecture-driven solutions for grassroots community in both countries. SMA was asked to share information on Madi information (articles/blogs on the construction process), which can be used as a best practice/case study for the aforementioned projects.

Hurdles to overcome: The highest risk is the uncertainty regarding the short- and mid-term development of Covid-19-related protective measures and travel restrictions, which could particularly impact motivation, financial income and experience-building in the starting phase of the homestay operation. Also, it is instrumental that the local community be supported and accompanied to ensure a successful operation, in particular during its starting phase.

Opportunities: While creating manifold challenges, the current global transformation triggered by the Corona pandemic also carries a high innovation potential. The growing awareness of international and domestic guests will induce a reorientation of tourism towards more meaningful and transformative experiences. We wish to take advantage of the relatively quiet year 2021 to prepare the Madi Eco-Village project to position itself ideally in the changing market once Nepal opens up to tourism again.


Periodical freshening and disinfection of floor with a mixture of mud, earth and cow dung (left); drying mustard seeds in front of traditional mud house with burnt tiles (right)

5.2 Impact / Sustainability

- **Impact 1**: Sustainability of operation is secured through partnership with well-established partners. This ensures economic self-sustainability and social mobility perspectives for the population (especially also the young, female population) on the basis of their cultural and natural heritage.
- **Impact 2**: Spread of the holistic approach within Nepal through the promotion and marketing of the successful Madi homestay operation on social and local media; through consulting and co-creation support by connecting spaces on the basis of their experience and evaluation of the Madi pilot model; as well as through concrete experiences for clients on tours directly to the homestay.
- **Impact 3**: Establish Madi Eco-Village as new eco-sustainable standard for the mid-price tourism segment in Nepal.

6. Lessons Learned / Conclusions

Project's main findings and conclusions

- Based on our experiences with the communities in Madi, we believe that operating a purely community-based tourism destination on high quality level over long term without the support of a well-established tourism operator will not be realistic. For this reason, we aim to establish **collaboration with a strong partner in the tourism sector**, who will support and further develop the business together with the community and in accordance with the project aims (Chapter 5).
- The fall-out of three of four project villages underlines the most important starting point of a rural development project: In order to ensure sustainable long-term success of the project concept, **a serious and transparent participative needs assessment is required PRIOR to project start**. However good an idea may be, if it is not understood and shared by the target beneficiaries, the work will be one-sided, lacking the ownership and engagement required for a successful project.
- As **3 of 4 consortium partners had come on board only AFTER this key preliminary project stage**, it was not until the project was already well into implementation, that we realized that this important step had not been conducted in a serious and transparent manner for all involved. Luckily, one of the selected communities did reveal the required engagement and interest, so with the decision to focus on Bankatta, we managed to make the best out of this opportunity.
- **The original project proposal and budget was very complex, with an ambitious holistic design.** We severely underestimated the significant effort required to implement such a multilayered concept: Four villages with different socio-cultural framework and dynamics; a project consortium of two Swiss and two Nepalese companies with varying cultural and social backgrounds and respective understanding of "sustainability"; and various project levels and components of completely different sectors (architecture/construction, energy/water, soft skills/management/HR, climate and sustainability work, awareness creation).
- **This complex project was an ambitious venture for a team of 4 – 6 part-time positions.** In Switzerland, a comparable project would require significantly more resources – and this without the intercultural implications of working side-by-side with a rural community in Nepal.
- **The complexity of tasks to be accomplished amongst these 4 – 6 people was very broad**: Team- and staff-psychology; Facilitation and conflict management within the consortium and with the local partners; Sustainability education within and outside of the project team; Intercultural communication and social competence; Innovative architecture design and use of construction materials; Comprehensive site and construction supervision on various levels; Design and implementation of the technical infrastructure; Administration, book keeping, HR. Plus the required flexibility in project timing due to unexpected turns of events related to weather, local politics and obstacles related to the Corona pandemic.
- **With the current focus on one village we can now go into depth and build a strong, lasting, committed destination** – instead of spreading the valuable resources over many sites, thereby losing valuable impact.
- **Women in rural communities are responsible for household and farming, and are therefore strongly absorbed by daily routine activities**. They do not have spare time for additional work such as construction, however they can integrate hospitality work (cooking, cleaning, etc.) within their routine. In Bankatta, this led to the fact that predominantly men are active on the construction site, while women take part in meetings, workshops, and will be the ones to host their guests.
- Also, **young adolescents** will take important roles in supporting their mothers, particularly as they may be more adept in interacting with foreigners (English-speaking and writing skills).
- The **Bankatta community proves to be eager to learn and adapt new ways of livelihood**. This may be related to their **ethnic background**: As people of Bote ethnicity, they have traditionally lived from river and forest, and then settled in the outskirts of Madi, adapting to farmers lives.
- The Bankatta people are therefore not by tradition agriculturalists, so they only have a limited amount of rice paddy fields, and **only few vegetable plots**. Most vegetables in their cuisine are still collected in the nearby forest. They say that the grounds surrounding their village are flooded during monsoon. And if they grow vegetables on the dryer, non-flooded grounds, the wildlife will come to eat these. It may be a feasible option for them to **introduce home vegetable gardens** around their houses, in order to add variety and volume for homestay vegetable requirements.

- In the course of preparing the **raw bamboo**, practical research on site revealed that rather than using the conventional method of treating with boric acid, the bamboo can simply be placed for a few days in the nearby river, thus removing the surplus starch, which would attract pests.

Local women ready for innovation (left), woman's group meeting (mid); waste management training (right)

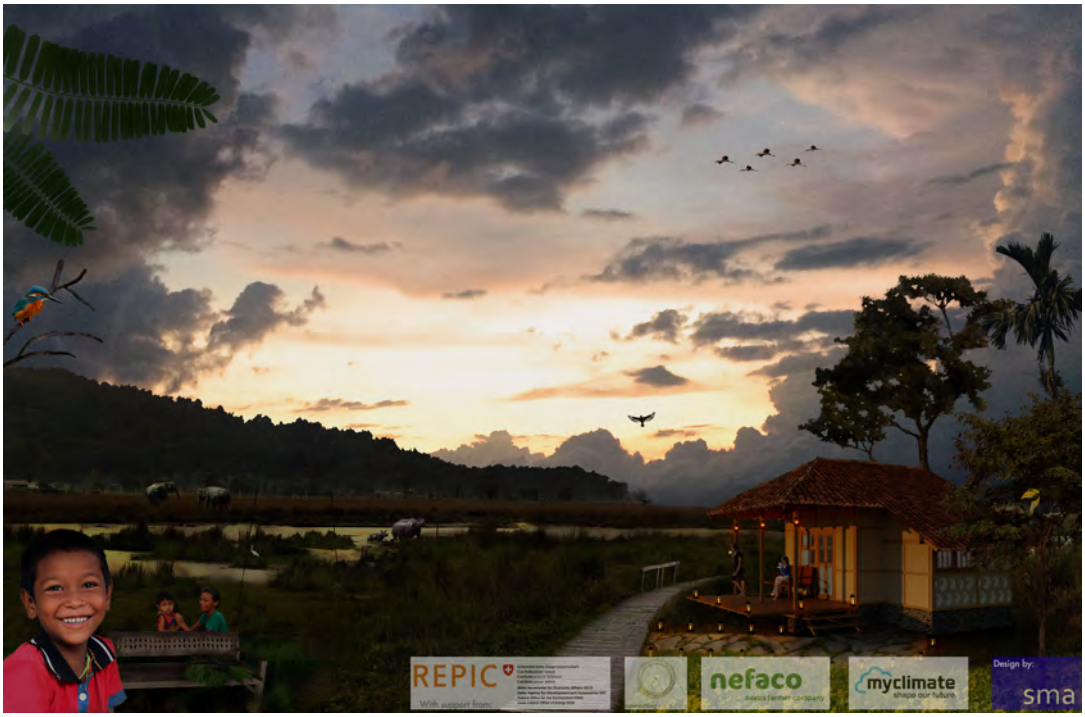
Recommendations for similar projects - outside or within this context

- **Include local community and local decision makers at early stage of planning**. The selection of Raitole & Dobaha had been taken on level of Bufferzone User's Committee not directly involving the community members in the question of whether they could see themselves leading a tourism operation in their village.
- **Local project management is a key to success and has to be chosen very carefully**: This person is the most important backbone of the project, he/she ensures the (continued) link between the beneficiaries and the outside support (financial, know-how). Ideally, this person brings a wide skill-set, including human/communication/negotiation skills, generalist management and business skills, and understanding of the local context. Being too close to the local context (personal connections and interests) may risk coming in the way of a neutral project approach and progress.
- **Mutual trust and partnership needs time, and is a fundamental requirement in order to develop a common long-term vision** and create a **successful joint-venture between partners of different culture**. This relationship building requires time, stumbling, challenges, patience and stamina. 3 years after our first visit, we can say: Those that are still on board will effectively steer the project and ensure its successful progress. Where we have come now, in collaboration with the community and within the project team, it is highly worthwhile to seize the opportunity and continue towards operation.
- **Partnership at equal level and respecting local traditions and procedures**.
- **Share and learn from already existing similar projects, nationally and internationally**. The collaboration with the Doko Recyclers, Green Bamboo Creation, NEFACO and Saral Urja Nepal have proved to be highly supportive – mutually. For our project, to benefit from their previous experiences and insights of working in comparable projects, and for these partners to be able to gain further experiences with an international-scale project of highly ambitious sustainability goals.

Interesting observations within the project's context

- Experience in Bankatta shows that **if the local community is involved right from the beginning**, and **project aims and goals are communicated well** and transparent, the community is ready to assume ownership and responsibility, the key to long-term sustainable success of a project concept.
- The project consortium has learned valuable lessons along the way of this project, which will in turn support us in the **replication** of the model on various scales.
- The **Corona pandemic was a determining factor for the local community**. At times their day-to-day coping, and personal survival may have been more important than the progress of the project.

- In **collaboration with professional tour operators**, village based eco-tourism will play an important role in the future and let local people take their active position and share in a lucrative business.
- Despite the strains and hurdles in the course of the project, we would like to emphasize that the numerous efforts by the project partners and various stakeholders have been worth it.
- We look forward to spending some leisure time in a Bankatta homestay facilitated by REPIC Switzerland, drinking a local tea on the porch, and thinking “sustainable and regenerative eco-tourism in Madi was not just a dream, it is actually possible”.



Promotion image for Madi Eco-Village, designed by the SMA team during Covid-19 lock-down

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8. Annex

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Poster prepared by SMA to illustrate their BLOG on the "Bankatta Model"