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Singa Hot Spring – A model for development through internal resource mobilization and community participation

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ABSTRACT

Singa Hot Spring is in the western region of Nepal, 9 km west of Beni, the district headquarters of Myagdi district. Nestled in a remote village until a few decades ago, it has now gained recognition as a premier destination frequented by around 25,000 visitors annually by the locals, people from different districts of Nepal, and India for the spring water's medicinal properties in treating arthritis (muscle and joint pains), gastritis, and skin diseases. A few dozen people from Singapore and Japan also visit annually for treatment. Now, Singa hot spring boasts a rustic setting with one major pool with 53°C temperature at the source, and three smaller pools in the vicinity. Unlike most other hot spring sites that wait for funding from governmental and non-governmental agencies, the local Singa Hot Spring Management Committee instead developed the physical infrastructure of the spa area from almost zero to the present level with a meagre entry fee raised from its visitors. The management committee also provides financial support to the local secondary school and the local municipality. It plans to run a natural therapy centre on its premises shortly. This paper discusses how the popularization activity conducted by this author through various media three decades ago and the mobilization of local community made it possible to elevate the physical status of the spring pool to the present level. It serves as a model for other hot spring areas to follow. The paper also discusses various problems and actions needed to address them.

1 INTRODUCTION

Nepal is endowed with more than 100 hot springs, scattered in 18 of 77 districts of the country. Singa Hot Spring lies in the Myagdi district. This district itself is popular for a total of 14 hot springs, the highest number contained in any single district of Nepal. Singa hot spring, located at Beni Municipality, lies between 28°22'03.93"N and 83°30'09.00"E (Fig. 1). The spring area is in the hilly region and is inhabited by about 5000 people with diverse ethnicity. The main spring pool has a moderate dimension of 40 ft × 20 ft × 2.5ft. This hot spring stands top among other hot springs of Nepal including a few prominent ones like Bhurung Tatopani, Kodari Tatopani and Tapta Kunda Tatopani, also known as Rihar Tatopani. One of the several factors due to its popularity is that it is conveniently situated about 390 kilometers west of Kathmandu and 150 kilometers from Pokhara – international tourist destinations. It is close to Beni – Darwang highway, hence easy to get from either of the popular towns Beni bazar and Darwang of Myagdi district within an hour by local bus. This spring pool has the highest media coverage among all the hot spring sites of the country at present.

2 OBJECTIVES

The main objective of this paper is to highlight the activities of Singa Hot Spring and see how they are enhanced by a local community to manage it in a sustainable way with least support from other funding agencies. The paper also translates the components of these activities into an evolving community model (Fig. 2), rather than creating a new model, implementing and / or validating it with scientific tools. No definite methodology was followed in this transformation work; however, great attention was paid to the reliability of information used in the model. The information is collected through primary data provided by the Singa Hot Spring Management Committee, field visits, frequent personal interactions with local community and the patients of the hot spring over two decades. The paper also intends to identify some basic components to be incorporated in the model to make it more sustainable and adaptable by other communities.

3 A JOURNEY TO SUSTAINABLE USE OF HOT SPRING

The Singa hot spring is running in a community model, meaning that it is catching a development approach that centre around the participation, benefit, and empowerment of the local community in planning, managing and benefitting from the hot spring and its surrounding resources. A flow chart diagram (Fig. 1) explains the way the hot spring currently works and how it followed sustainable development through community participation.

The following factors have led to the prominence and effective functioning of this hot spring.

3.1 Popularization activities

Until the early 90s, the hot spring area looked bare, with a few visitors from the adjoining areas for therapeutic use, particularly for skin diseases, arthritis and muscular pain. No road access and physical infrastructure existed. In the same year, I took the opportunity to visit the spring area in 1995 for the promotion of Singa Hot Spring through local, national, and international platforms.

At a time when social media like YouTube, and Facebook were non-existent and popularization to the mass in general was extremely difficult task. My attempt to televise this hot spring from the newly established Nepal Television was extremely challenging and yet became possible in 1997 with the financial and moral support of the local community. The spring site gained more popularity. People from the far eastern and western parts of Nepal as well as from India started to throng. Patients are enjoying the pool all year round without a care for rain, thunderstorms or the scorching heat of the sun since there is a roof overhead now. The popularization of this site also played a catalytic role for the adjoining hot spring areas including Bhurung and Darmija to manage and expand their local infrastructure. Today, this spring site has become so popular that more than two dozen of videos on can be found in theYouTube channel.



Figure 1. Location of Singa hot spring in Nepal

3.2 Medicinal value:

The second factor is the healing properties of this spring water. The water temperature straight from the springs is a sizzling 54 degrees Celsius, one can stay further away to a more tolerable 42 degrees Celsius for a pleasant dip. Its water is characterized by the almost neutral pH and clear appearance, making it potentially relaxing and providing many wellness benefits, including relief from rheumatism, arthritis, back pain, goiter, skin health, nerve diseases, gastrointestinal disorders, stress and aches, promoting skin, boosting blood circulation and more.

A thermal water is considered as having medicinal or therapeutic value if the total mineral content is 1000 mg/liter of kg of water or if it consists of a minimum level of other chemical contents. In the case of Singa, the total mineral content is about 768 mg/liter.

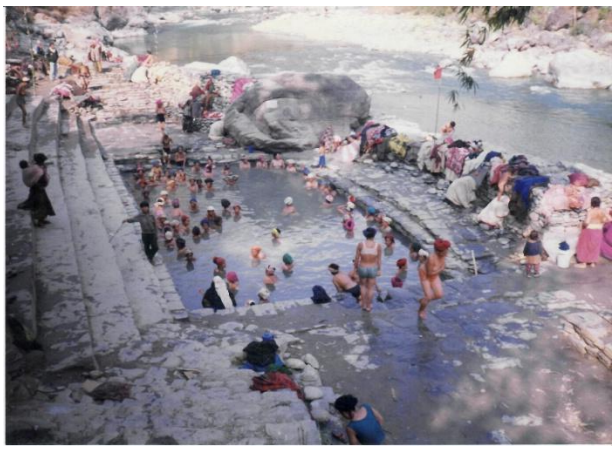


Photo 1: Singa hot spring, Myagdi, 1995

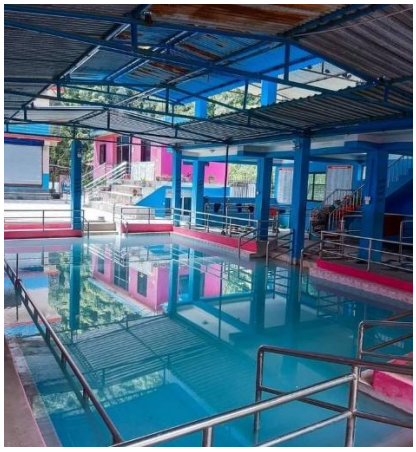


Photo 2: Singa hot spring, 2000

Spring water has a composition (all in mg/L) of arsenic (0.006), chloride 61.88, sulphate 86.86, sodium 41, potassium 4.4, bicarbonate 490, sulphur < 0.5), calcium < 1, magnesium < 1 and silica 82.79 (Government of Nepal). Its total dissolved solid is 353 (Ranjit, 2005).

Based on the presence of other chemical constituents in lower quantities, Singa hot spring falls in a 'simple thermal spring' category with no dominant ion and low mineral content. However, its consistently elevated temperature (52-54 degrees at the source) throughout the year adds to the healing process.

The significance of this site is that unlike the other hot spring sites in Nepal, people visit here for seven to fourteen days with the main intention of treatment instead of short luxury. People living a decade with the 'ignominy' of skin disease have gained new hope after dipping into this pool. A few people have also experienced imperfect marks on their body vanishing miraculously - a treatment the allopathic medicine could not make.

3.3 Community participation

With the popularity gain and increased flow of patients, the locals established Singa Hot Spring Management Committee, hereafter referred to as SHSMC, with the involvement of locals comprising social workers and businesspeople. The Committee is composed of a Chairperson, Vice-chairman, Secretary, Assistant Secretary, Treasurer, 8 general members and 5 advisors. All the committee members provide voluntary services, and they are selected by the local community for a 2-year period. Instead of a top-down development process, SHSMC follows a community model that is more inclusive, sustainable, and locally driven. No private investors or government officials engage in the committee.

3.4 Patients / visitors' turnover

Starting from about 30-40 regular patients/visitors in 1995, the spring site has become an abode by the year 2000. The spring pool is packed with people between 350 and 400 in a shift in which males and females take turns alternatively. In this paper, a visitor should be regarded as one who takes regular baths for a period between 7-10 days. As seen from Table 1, the number of visitors has risen sharply from the year 2000 to 2018. However, in 2020, it witnessed a sharp decline due to Covid19. The number started to pick up again. In 2024, more than 20,000 people from 59 districts of Nepal and some from India, Russia, France and Japan took bath in the pond.

January to April is the peak season for patients. During this period, between 1200 to 1500 people come for a dip daily. In the first two weeks of October 2025, about 800-900 visitors soaked in the pool, with two shifts for females and one shift for males in the morning and evening. People spend an allotted time of an hour easily while soaking in the pool by singing songs composed particularly for this site. Sometimes, people perform dances near the pool which creates a unique vibe. Most of them also drink about 3 liters of spring water rich in various chemicals and salt with the hope to cure their ailments and remain healthy.

3.5 Revenue generation, investment, and infrastructure development

With increased flow of people, the management committee was able to collect money from different sources mainly from the entry fee, and to some extent from Myagdi Relief Committee, the Nepali diaspora based in Bahrain, one million rupees from Pokhara Tourism Board, local military unit, to expand the infrastructure including the roof, user-friendly structures such as wheelchair accessibility to the pool, separate restrooms and change rooms for males and females at a total cost of $39,000 between 2010 and 2017. It also received a hundred buckets in donations to collect and use hot water for hygienic purposes. At present, one can take bath in hot water pond for seven to ten days by paying a meagre Rs 350. Casual visitors who do not want to take bath in a large group and wait for the male/female group's turn, can do so in two separate ponds where they must pay entry fee of Rs 200 per visit. An approximate conversion rate of 1 US $ = Rs. 142 as of Oct. 2025 is applied throughout the document.

In addition to the revenue generated from entrance fee, the committee raised Rs. 416,000 in donation, Rs. 530,585 as temple offerings, Rs.3,08,690 from the lifetime membership fee, Rs.17,092 from the bank interest and Rs. 5,155 rupees from other sources in 2023. Twenty-five per cent of the money collected from the entrance

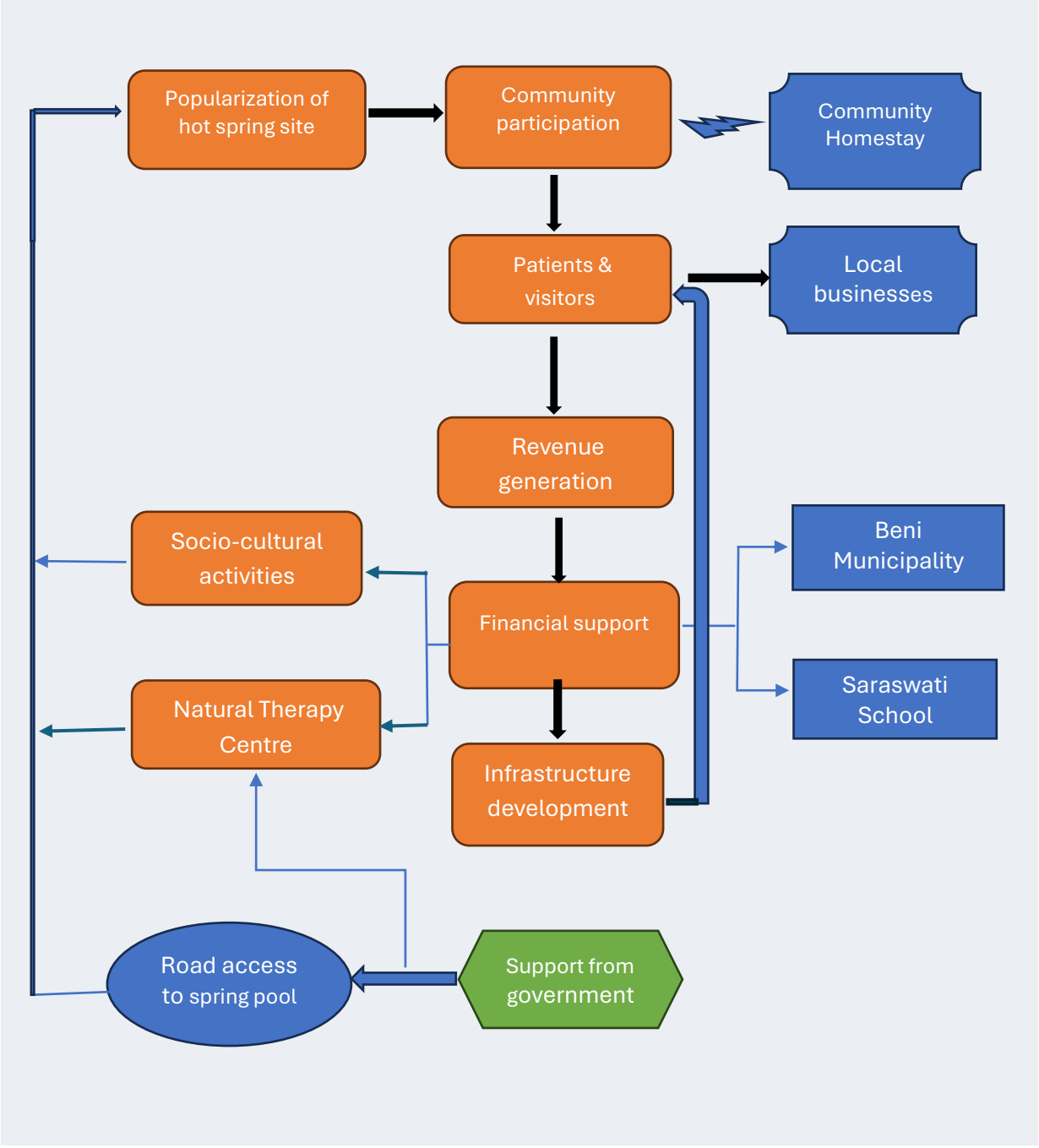


Figure 2. Flow chart of Singa hot spring pool operation

fee was contributed to Beni Municipality as per provincial requirement and 13 per cent to the Internal Revenue Office (The Rising Nepal).

3.6 Expansion of bathing facilities

In 2019, two more pools were added for people who are willing to take a dip in a more relaxing environment, without having to wait for a long time to enter the main pool (Photo 7). These pools are supplied with hot water by pumping from the source located at the bank of Myagdi river.

The Management Committee built the new pond at a public land near the upper Tatopani (hot spring) bazaar following the increasing number of people visiting the place to take bath in hot water pond by pumping it from the source located at the bank of Myagdi river. Eighty people can take baths in the 15 feet × 15 feet × 2.5 feet pool at a time (Photo 6).

Table 1: Revenue and expenditure in Nepalese currency (1$ = 142 Rupees), figures rounded

Year	No. of visitors	Income from visitors	Expenditure			
			Activities	Contribution		
				Teachers salary	Beni Municipality	Revenue Office
2000	6,550	3,27,000	55,39,900	16 % - 60 %	25%	13%
2018	18,260	54,78,000	64,95,500			
2020	7,700	26,91,900	31.54,500			
2022	18,260	63,90,300	19,65,300			
2024	20,400	71,21,500	23,35,700			

Note: Where expenditure exceeds revenue, additional budget was carried over from previous years and loan

Activities in 2000 included roofing, construction of pathway to entrance and administrative building

Activities in 2018 and onwards included operation and sanitation, protection of pond and riverbank,

gabion wall and entrance pathway construction, construction of small ponds



Photo 3: Aerial view of Singa hot spring site, 2000



Photo 4: Women in the hot spring pool, 2019

3.7 Health and cultural tourism

3.7.1 A Natural Therapy Centre, first of its kind in Nepal utilizing hydrotherapy, was set up in 2021 with the support of five million rupees from the provincial government for various therapy equipment. The management committee contributed to the construction of a 5-storey building with bank loan and duly operational after administrative approval. The Centre also aims to impart acupuncture, yoga therapy, physiotherapy, massage therapy and dry therapy services. It plans to employ a minimum of fifteen trained health professionals including neuropathy doctors.

3.7.2 In a bid to make the area more attractive in line with its popularity, the old temple has been modernized with the use of traditional bricks and crafts to provide an artistic view. People pray for Hindu God Shiva and Goddess Pārbati and sacrifice animals to cure them from ailments.

On the full moon day of Falgun month, a local shot put (a sport in which a heavy and nearly round stone ball is thrown from the shoulder as far as possible) is held. The Thakali ethnic group observes it as a special day and an archery game (a game of shooting at a mark) is also organized in a bid to add charm to the festivity.

Every Friday evening, the locals conduct traditional ethnic dances in the market area to entertain the guests and visitors in the pool.

3.8 Support to local bodies

Twenty-five per cent of the money collected from the entrance fee and donations go to Beni Municipality and 13 per cent to the Internal Revenue Office. The Committee also used to offer significant contributions to meet the salary of the local Saraswati Secondary School teachers (Table 1). Recently, this contribution has been reduced due to the financial problem of SHSMC.

3.9 Boosting local business and employment opportunities

The SHSMC employs 4-5 local people during the off-peak season and 9-10 people during peak season to clean the pool and provide managerial services to the visitors in the spring site. Recently, local business has flourished with many hotels, restaurants, guest houses, and homestays growing in the vicinity. Patients and family members from distant places rent rooms with cooking facilities where they enjoy own food at a low cost (Ranjit, 2022). Locals are given training to welcome guests in the homestays with a diverse and wholesome menu, largely made from produce sourced from nearby farms. It also plans to provide training for the local youths in the preparation of western cuisine.

3.10 Promotion of spring site

The SHSMC members visit other hot spring sites in the western and far-western parts of Nepal to promote cultural tourism of the hot springs and exchange knowledge for better management. The committee also advertises its activities through various media in these locations.



Photo 5: Extended Singa hot spring pools



Photo 6: Extended Singa hot spring pool



Photo 7: Line up for entry and showering after baths



Photo 8: Religious activity at night

3.11 Hygiene and sanitation

It is mandatory for the visitors to have a freshwater bath in two hot water taps close to the main pool before entering the pool and exiting from the spring site. People with respiratory diseases and women in the menstrual period are prohibited to soak in the pool. The pool water is cleared and cleaned every night at the end of the scheduled shifts.

A case study was conducted involving 126 patients (Vaidya and Nakarmi, 2020) related to musculoskeletal problems covering inflammatory arthritis, degenerative disorders and soft-tissue rheumatism. It dealt with (1) perception and acceptance of hot spring water, (2) the need for perseverance and expectation of cure, (3) awareness of side effects and (4) peer-pressure. It produced the general conclusion that hot spring baths in this spring water should be used only as additional therapy for patients with rheumatic diseases along with specific treatments. The report also pointed out the need to spread awareness among the visitors about the transmission of damaging and deforming diseases while taking the bath along with other people and taking precautionary measures to avoid serious amoebic infection.

4 SHORT TERM PLANS

4.1 While the perennial Myagdi River adds beauty to this site, it also creates a major problem as the water sources on its banks are swept away by monsoon floods every year, depriving the visitors of hot water shower before and after taking baths in the pool. A gabion wall was constructed to protect the pool and the hot spring water source. The Great earthquake of April 2015 in Nepal cracked wall. It led to major changes along with the emergence of two new sources on the riverbank. It provided the opportunity to construct two small pools without any impact on the water flow to the main pool. SHSMC plans to protect the existing spring sources on the riverbanks by building more gabion walls.

4.2 Construct a community-managed homestay for at least 50 people to provide affordable accommodation and food services to the patients coming from distance. This would allow them to extend their stay at the periphery of the spring site to receive extended care from the pool and the Natural Therapy Centre at minimal cost.

4.3 Operate electric wheelchair lifts and construct user-friendly smart toilets for patients with physical disability.

4.4 Explore more spring sources in the vicinity to meet the bathing need of increased number of regular patients / visitors.

A recent study (Basukala, 2025) based on a sample survey of 121 site users has indicated that the visitors seeking treatment are prepared to pay more entry fees. This would generate more revenue to be used for infrastructure development, operational and maintenance costs.

5 CHALLENGES

A conflict in the sharing of hot spring water is emerging at the site. With the increased popularity of hot springs for health and tourism purposes, private entrepreneurs are eyeing into owning contracts for better management. A private star hotel in the vicinity was established in 2023 to attract more visitors, domestic and international. Its owner was denied access to the hot spring water for business purpose citing the inadequate quantity of water. Moreover, the management committee is extremely cautious of privatization based on the experience of uncontrolled exploitation in the field of education and health services in Nepal. The committee holds the view that when the private parties are granted ownership, they increase entrance fees multifold and many visitors in the low economy bracket will be deprived of the health service. Moreover, when such a facility is provided for a single party, there will be an increased demand from other people to share hot spring water, inviting more chaos for management.

It is not at all possible for the domestic and foreign visitors to take a dip in the main pool since it is always packed with regular visitors seeking health benefits. The two smaller pools are dedicated to the short-term visitors. However, the local business entrepreneurs still feel the need to improve sanitary conditions in and around the pools to attract foreign guests.

It is mandatory for the SHSMC to contribute 38 % of its revenue to the municipality and the revenue office. It is bound to support the local schoolteachers' salary, and construct building for the therapy centre, it is facing financial difficulties to expand the infrastructure.

6 CONCLUSIONS

Singa hot spring site is probably the best site in Nepal where active participation of the community exists in the management by using local manpower and natural/financial resources. This site has been demonstrating exemplary activities and encourage people in other hot springs sites in Nepal where the locals depend entirely on provincial governments for funding. The committee's working model is also an example for sites operation beyond the country. Inclusion of activities has been taking place purely based on their felt need experienced by local people and there exists a lack of scientific support and activities. Suggested below are some activities which would greatly help with the sustained use of the available geothermal water.

7 RECOMMENDATIONS

7.1 History reveals that the hot spring water in the Singa area has been emerging for more than six decades. Basic scientific information like its chemical composition, flow rate, and temperature was collected only in 1997. It is extremely necessary to collect such chemical data periodically so a systematic database can be created. Local community thinks this hot spring source is permanent since it has been on for decades. There is a need to bring awareness among the people that some measures need to be taken to use the water in terms of quantity and heat in a sustainable way. Steps such as reinjection of the used water help to prevent depletion of fluids and maintain reservoir pressure.

A preliminary reservoir estimation (Ranjit, 2010) shows that there exists a huge geothermal reservoir in Myagdi district, to which Singa hot spring belongs . Emergence of spring sources at various locations in Singa also may be a part of the findings. A comprehensive study including preparation of geological, temperature distribution maps, and reservoir estimation should be conducted so that the hot water resource can be exploited, better managed and distributed for commercial use as well.

Geothermal reservoir can be estimated by new techniques of exploration such as fluid inclusion survey and AE (acoustic emission) method.

Digital imaging can improve the efficiency and accuracy of collection, interpretation and archiving of reservoir data. Digital images whole or core with the resolution of conventional photographs can be collected using either a still or video imaging camera and then using image processing Geographic Information System (GIS) software.

3D images of geothermal reservoir rock can be obtained by using imaging techniques such as micro-CT (μCT) scanning devices, that helps us to know the nature of cracks.

Currently, there are no domestic experts to conduct reservoir studies. Regional or international cooperation is highly needed for technical studies. So far, no drilling activities have taken place in Nepal for logging subsurface temperatures and exploitation of geothermal water.

7.2 Developing the site as recreational hub and tourist attraction

So far, the SHSMC is more concerned with the expansion of pool facilities to meet the demand of ever-increasing number of visitors for health spas. Few recreational activities are taking place in the area. Some of them include groups singing folk songs while dipping in the pool. This has helped them to pass the hour shift very easily. Locals have also composed folk songs devoted to Singa site which they recite along with traditional musical instruments. Inside the temple, chanting of religious songs (bhajans) is conducted once a week and prayer activity takes place with the support of a volunteer priest from the district headquarters.

To be recognized as a recreational hub and attract more tourists, several structures related to the use of spring water are suggested as shown in Photos 9,10,11,12.

There exist other thermal sources about 600 m west of the main pool with temperatures between 35-38 degrees Celsius). Given the low temperatures, this water can be transferred to the existing pools using insulated pipes

to minimize heat loss. About two dozen of small pools accommodating only one to two persons (Photo 9) should be built in the nearby public areas to provide extended service and relaxation in the natural surroundings. Greenery plantations should be developed and a park established to attract more tourists. Design and concept development should be focused on keeping everything as natural as possible by covering the roof of the spring pool with native grass, for instance.

7.3 Contrast therapy- alternating between hot and cold treatments - has become increasingly popular in different countries. This therapy has beneficial impacts on the improvement of blood circulation, muscle recovery and reduced soreness, pain relief, injury management, mental and emotional benefits. At Singa site, a plunge well of frigid or chilly water (pumped from the nearby Myagdi river) should be constructed.

7.4 Walking barefoot on cobblestones with flowing hot water warm (38–42°C) - a kind of thermal reflexology path- helps to improve blood circulation, nerve stimulation and works like a natural foot reflex stimulation. It helps to detoxify and reduce stress, improve balance and posture. Such a facility should be developed in the vicinity. However, patients with open wounds, diabetes with neuropathy, or severe varicose veins should be prohibited.

7.5 A database that focuses on the type of diseases (musculoskeletal, skin, gastroenteritis, etc.) from which the visitors have benefited, extent of cure and time required to achieve it should be created. In contrast to the original belief that hot spring water is beneficial only for skin diseases and musculoskeletal problems, research has shown that it is also beneficial for a wide range of physical problems such as diabetes, heart and circulatory diseases, nervous system disorder, migraine headaches, diseases of mouth and gums, Parkinson diseases etc. Hot spring water containing substantial amounts of negative ions produces neurochemicals that can increase the feeling of wellbeing, thus reducing depression. Patients visiting Singa hot spring sites have already benefitted from digestive complaints such as gastritis and constipation, gastrointestinal intestinal problems by drinking the spring water. Spring water meets the national and WHO general guidelines for drinking, and it has a trace amount of arsenic. Few patients are reported to be recovering from severe mobility problems by taking regular dip in the pool. The Natural Therapy Centre should conduct clinical studies in some of the diseases mentioned above. Trained health professionals should be involved in this task, and the clinical data should be integrated with local hospitals.



Photo 9: Proposed bathtub structure



Photo 10: Proposed plunge well

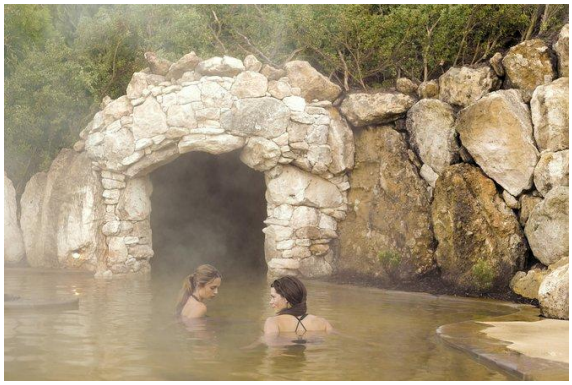


Photo 11: Proposed cave type hot spring pool



Photo 12: Proposed enclaved spring pool

7.6 Many people flocking to this site are still dependent on hearsay from the visitor's social media like YouTube, Facebook, TikTok. Even though one can find many tales from YouTube, a community-led storytelling program

needs to be in place to highlight the health benefits experienced by the visitors. This will eradicate misinformation and impart authentic facts.

7.7 Currently, the management is providing negligible entrance fee (Rs. 350 for 7-10 days) The management committee should not hesitate to slightly increase this fee to meet the current expenses and take benefit from the Natural Therapy Centre. This centre is non-profit oriented and is poised to operate with limited financial resources. National and international agencies should extend financial and technical support for their extended infrastructural development.

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