An Examination of Governmental and Nongovernmental Organizations in Nepal: A Partnership in Managing and Eliminating Waste in the Solukhumbu

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An Examination of Governmental and Nongovernmental Organizations in Nepal: A Partnership in Managing and Eliminating Waste in the Solukhumbu

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Abstract

This study examined whether governmental organizations and nongovernmental organizations in Nepal can effectively work together on eliminating trash and establishing waste management systems in the Solukhumbu region. Historically, the overwhelming presence of discarded items has detracted from tourists’ enjoyment of the Himalayas as well as caused severe environmental ramifications. In the last twenty years however, NGOs and GOs have begun to work together to address these issues and this project looks at whether their working relationship is effective as they often have different objectives and methodology for reaching those goals. Conducting ten personal interviews, visiting GOs and NGOs in Sagarmatha National Park (SNP) and Kathmandu, and gathering extensive online research provided the basis for analyzing findings from this endeavor. It was concluded that for the specific obstacle of waste management in SNP, NGOs and GOs in Nepal worked productively towards a common goal of a clean Khumbu.
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Introduction

I. History of Waste in the Solukhumbu

In 1953, Tenzin Norgay and Sir Edmund Hillary became the first people to reach the summit of Mount Everest. Although there had been previous mountaineering expeditions led by Europeans and Americans in the Himalayas, once the duo obtained the unobtainable, it created the opportunity to open the Solukhumbu region to what would become a long history of expeditions and treks (Stevens, Stanley). Everest, Sagarmatha (Nepali), or Chomolungama (Tibetan), the tallest point in the world, has been a source of international attraction and curiosity that has greatly increased in recent years (see Appendix 1, Figure 1) (“History”). Initially, the Nepali government only allowed mountaineering groups to enter the region, but after 1964, they opened it to “multi-day trekking tours” and mountain tourism began to flourish (Stevens, Stan: 259). Since the 1950s, climbers and trekkers alike have flocked to the Khumbu to attempt peaks and to enjoy the culture, sights, and grandeur of the Himalaya. As tourism in SNP began to rise in popularity, the issue of waste left over from trips began to arise. National Geographic named Everest “the world’s highest junkyard” in 1963 in reaction to a picture of huge piles of trash at Everest Base Camp (EBC) (Mazzolini 2012).

According to Brent Bishop, the reason that trash was always left behind on mountains was due to two fundamental problems: historically, the standard procedure to deal with waste from expeditions was to either discard it in crevasses or bury it (Bishop). By fostering an “out-of-sight, out-of-mind” mentality it was easy to ignore the problem until it became overwhelming and all encompassing, an unavoidable issue no longer (Bishop). This attitude of leaving waste behind on mountains soon became the norm with trekkers and locals as the problem of garbage spread from Mount Everest to other parts of the park. Even though SNP made regulations in 1979 that “required mountaineering expeditions and trekking groups to pack out their waste,” very few groups complied, as it was costly and less convenient to take their trash with them (Stevens, Stanley). Additionally, plastic, metal, glass, and other non-biodegradable items began to be used prolifically by business owners in the Solukhumbu not only to offer goods that the tourists expected and demanded, but also in their daily lives (Stevens, Stanley). The absence of a system that could manage and organize waste in any capacity continued to negatively contribute to the “eyesore” that was the Khumbu (Stevens, Stanley: 423) Well into the 1980s, the accumulation of trash continued to grow until the Nepali government realized that the garbage was beginning to negatively impact mountain tourism (Stevens, Stanley; Manfredi). Shutting down the park for a year, or implementing a limit on the number of tourists was not a viable option because of the revenue it generated for the government and locals so alternative ways of handling this problem had to developed.

Luckily, in the 1990s, locals and the international climbing community decided to take action, as it was was no longer a problem that could be ignored. The founding of several NGOs and INGOs in conjunction with the implementation of stricter government protocols helped begin to change the attitude that climbers and trekkers had towards the environment (Bishop). As less waste was left behind, there was still an absurd amount in SNP from the decades of previous expeditions. Unfortunately, those government policies
didn’t address removing the preexisting waste so the problem didn’t appear to get better (Bishop). During the spring climbing season of 1994, the first cleanup expedition attempted to remove waste from Mount Everest, EBC, and the surrounding trekking trails (Bishop). This project was named the Sagarmatha Environmental Expedition, with intentions to reach the summit without using oxygen and remove trash from the mountain. They strove to prove that expeditions can “reach the summit and have a positive impact on reclaiming Everest’s environmental integrity” (Bishop: 324). The project was successful not only because they reached the summit, but also because the climbing team was able to collect 3,200 kg of trash and two-hundred discarded oxygen tanks (Bishop). This mission was not the last to attempt to clean Everest; in recent years, many organizations have addressed the problem of a surplus of garbage throughout SNPBZ. In the past twenty years, significant improvements have been made and countless local, international, and governmental, organizations have made it their goal to collect all of the trash in the Solukhumbu as well as create infrastructure that could sustainably manage all the waste within the national park and surrounding area.

Even though there is a dramatic improvement compared to thirty years ago, there is still a lot of work to be done. Especially because mountain tourism has exploded in the last ten years, the increase in tourists has put significant strain on the environment and the bare-boned waste management system already in place. According to Dr. Alison Sheets, who worked extensively in the Khumbu in 2008, she says that considerable progress has been made in the management of trash and human waste that was headed by various organizations. Since the most popular treks, trekking peaks, and expedition peaks follow similar trails, these “hiking highways” have been environmentally strained from frequent and high volume use. The majority of trips begin by flying into Lukla (2,850 m), on to Namche Bazaar a trading hub of the Solukhumbu (3,500 m), then Tengboche the spiritual center of the Khumbu, Periche, Gorak Shep, and finally onto to EBC (see Appendix 1, Figure 2) (“Everest;” Nepal). This high concentration and large quantity of tourists presents a more challenging logistic problem to solve especially as it is estimated that tourists produce an average of 4.6 tons of waste every day according to a study done by Emanual Manfredi, Bastian Flury, et al. (Manfredi).

Other challenges that face the organizations in the Solukhumbu include how to properly dispose of plastic, how locals manage their own trash, how to minimize burn pits, and how to manage human waste and prevent it from contaminating drinking water in addition to the continued effort of collecting and removing trash and implementing a fully-operational waste management system. Currently, “half of the plastic accumulated in SNPBZ is openly burnt,” while “40% is dumped in pits or scattered” and only a small amount of plastic gets reused by locals, not only is plastic not safely disposed of, but other non-biodegradable items also are often buried, burned, or thrown on the ground (see Appendix 1, Figure 3) (Manfredi: 135). Everest, also still needs continued efforts to remove the discarded items from sixty years of expeditions as an estimated 140,000 kg of rubbish remains on the mountain (Mazzolini, 2010).

II. Nongovernmental and Governmental Organizations’ Interactions

Especially in recent years, nongovernmental and governmental organizations have made huge progress in preventing climbers and trekkers from littering, but how do these
two very different groups create a working relationship that is effective and results in positive change for SNP? According to the World Bank, an NGO has “primarily humanitarian or cooperative, rather than commercial objectives…that pursue activities to relieve suffering, promote the interests of the poor, protect the environment, provide basic social services, or undertake community development” in developing countries (Werker: 74). Often NGOs’ relationships with the government the work under or with is complicated as they may have goals the conflict with each other or believe that their way of approaching a problem is best (Streeten). They are often portrayed as groups who can address issues that the government is incapable of handling due to disinterest, lack of funds, or prioritization of projects. This can create conflict between them, as NGOs often must work alongside GOs to navigate the intricacies of permitting and project implementation. Additionally, GOs are the “largest single financial contributor” to NGOs, which has the potential for the NGO to feel pressured by the government to handle issues in the way that the government deems best (Werker: 78). The two are also can be intricately connected as “components of an NGO project are often best supplied by the government,” and often “successful NGO projects are sometimes taken over or expanded by [the] government” or vice-versa (Streeten: 207).

By examining the excessive amount of waste in SNPBZ and how NGOs and GOs interact in addressing and attempting to fix the problem, it will be possible to determine if those two types of organizations are able to overlook their differences and cooperate to present a united and more effective front in conserving the environment in the Solukhumbu.

III. The Parties Involved in Solukhumbu Waste Management

The variety of actors that are examined in this research that are involved in eliminating, managing, and removing waste from the Solukhumbu region range from international nongovernmental organizations, local and national government, as well as local, grassroots groups. They include: the Ministry of Culture, Tourism, and Civil Aviation (MoCTCA), the Department of National Park and Wildlife Conservation (DNPWC), the Nepal Tourism Board (NTB), Sagarmatha Pollution Control Committee (SPCC), EcoHimal Nepal, World Heritage Preservation Society (WHPS), the Nepal Mountaineering Association (NMA), the Trekkers Agencies’ Association of Nepal (TAAN), , World Wildlife Fund Nepal (WWF-Nepal), Village Development Committees (VDCs), Everest Summiteers’ Association (ESA), Garbage Management Groups (GMGs), Khumbu Multipurpose Cooperative Ltd. (KMCL), as well as Community-Based Organizations (CBOs). There are many more organizations within Nepal both on the governmental and nongovernmental spectrum that focus on environmentalism and conservation within in sensitive areas such as Sagarmatha National Park and Buffer Zone (SNPBZ), however the organizations in this paper were chosen because of how closely they work together and overlap with their missions and various projects regarding waste reduction and management in the Solukhumbu.
I. Ministry of Tourism, Culture, and Civil Aviation

The first of three governmental branches involved with NGOs in the environmental protection and clean up initiative in the Solukhumbu region is the Ministry of Culture, Tourism, and Civil Aviation (MoCTCA). The MoCTCA simultaneously promotes tourism by “encouraging the private sector” while emphasizing the “conservation of natural, cultural, and human resources” (“Government”). It was founded in 1978 to encourage tourism, as it generates a significant portion of Nepal’s yearly revenue (“Ministry”). Because trekking and mountaineering comprise a majority of the tourism in Nepal, NRs 240 million annually (US$ 2.5 million according to currency exchange rates on November 27, 2014) the MoCTCA is deeply involved in decision-making and policy implementation in regards to monitoring and regulating the environmental impact of expedition teams (“Royalty”).

As there are a plethora of mountains that foreigners and Nepalis try to climb, the MoCTCA and the NMA have split up the responsibility of the processing climbing permits and regulating these mountains. Within SNP, the MoCTCA manages Mt. Everest, Lhotse, Nuptse, and all other peaks that are 6501 meters or higher. The cost of permits depend on the height of the climbing objective starting US$ 1000 for ones at 6501 meters and increasing by US$ 500 for each 500 meters (“Mountaineering”). The fees for climbing mountains under the MoCTCA’s jurisdiction were recently reduced in the Spring of 2014 to encourage an increase in mountaineering (“Royalty”). Not only have the prices dramatically decreased for foreign climbers, but it has also been lessened for Nepalese climbers as it was too expensive for them to climb on their own so they had to work as a guide or porter (“Royalty”). Starting the next climbing season, it will only cost a Nepali person NRs 75,000 (US$ 752) to climb Everest in the Spring, NRs. 37,500 (US$ 376) in the Fall, and NRs. 18,250 (US$ 183) to climb during either the Summer or Winter (“Royalty”). The change in prices will be implemented starting January 1, 2015 and February 13, 2015, for foreigners and Nepalese respectively (“Royalty”). These new lower prices (see Appendix 2, Table 1) will permit more international and local mountaineers to attempt peaks in Nepal and also create more revenue for the government and private businesses that results from expeditions.

Besides issuing permits for these peaks, they also are in charge of collecting and then reimbursing garbage deposit fees for expeditions, which also vary in cost, depending again on the height of the mountain1 (“Mountaineering”). Together with the SPCC, the NMA, and other governmental and nongovernmental organizations, the MoCTCA helped establish this policy that requires climbers or climbing teams to give either the MoCTCA or NMA a deposit fee in case they do not properly dispose of their waste. The SPCC implemented a system for determining whether or not teams left garbage behind on the mountains or at base camp and then issuing certificates for the teams who removed all their trash and would get their garbage fee back (more details in the SPCC section). Unlike the climbing permits, the MoCTCA did not reduce the amount that groups need to pay for their deposit fees (see Appendix 2, Table 2).
In addition to issuing permits and collecting garbage fees, the MoCTCA has been integral in writing new policies that help with waste management and reduction. This spring, in 2014 the MoCTCA implemented a rule that each climbing Sherpa must bring down 8 kg of waste from Everest itself in addition to the trash that they generate. The SPCC and other NGOs pushed for 10 kg but they ended up compromising on 8 kg as the government was worried that 10 was too much and climbing porters wouldn’t want to carry that much extra weight. This policy, however admirable and beneficial to removing waste from Mount Everest may not be the most effective according to Temba Sherpa, a lead mountain guide for 7summits. He believed that many climbing porters and guides did not remove any waste as it was largely unmonitored this spring and because no one held them accountable, they weren’t inclined to carry any extra weight. Even though this specific policy may need time to start to make a noticeable difference on Mount Everest, the MoCTCA has partnered with many NGOs and other parts of the government to successfully instigate change to the prevalence of trash and poor waste management.

II. Department of National Parks and Wildlife Conservation

The Department of National Parks and Wildlife Conservation (DNPWC) mission is a commitment to “the conservation, management, and regulation of the protected areas and biodiversity in Nepal” according to their website (“Welcome”). Originally it began in 1972 as a subdivision of conservation under the Department of Forests, but as the importance of national parks and biodiversity across Nepal became more important they became their own entity (“Introduction” 2014). In 1980, the DNPWC was formed under the Ministry of Forest and Soil Conservation and thirty later in 2014, it presides over “10 national parks, 3 wildlife reserves, 6 conservation areas, 1 hunting reserve, and 12 buffer zone areas” covering 23.2% of all of Nepal (“Introduction” 2014; “Welcome”).

Image 1. The MoCTCA on Singha Durbar in Kathmandu, Nepal.
Among the many responsibilities of DNPWC, it supervises “National Parks Management, Wildlife Reserve Management, Conservational Area Management, Hunting Reserve Management, Buffer Zone Management, Hattisar Management and non Timber Forests Products Management” in an effort to conserve the large variety of ecosystems, unique habitats and animals, and cultural heritage that can only be found in Nepal (“Objectives of DNPWC”). As the charge of the national parks in Nepal, it oversees Sagarmatha National Park (SNP) and Sagarmatha National Park Buffer Zone (SNPBZ), which encompasses the majority of the popular trekking routes, trekking peaks, and mountaineering peaks; the areas that require the most attention in terms of waste management and elimination. The DNPWC recognized SNP as a national park in 1976, and in 1979 it became a World Heritage Site in a further effort to protect the 1148 km\(^2\) area (“Protect”). Although, Sagarmatha National Park has existed for almost forty years, the buffer zone area was only recently established in 2002, adding another 275 km\(^2\) of area that came under the protection and management of DNPWC (“Protect”).

In the Solukhumbu region, SNP begins in Monjo and extends as far north as Tibet (China), as far east as Imje Tse (Island Peak), and as far west as Tashi Labsta Camp (see Appendix 1, Figure 4). The entrance fee of to SNP can be paid either at DNPWC headquarters in Kathmandu or upon arrival at Monjo. The cost for entering the park is NRs 3000, 1500, or free if you are from a foreign country, from a South Asian Association for Regional Cooperation (SAARC) country, or from Nepal respectively (“Entrance”). The money from tourists who go to SNP is then put towards environmental awareness, biodiversity and habitat conservation, headquarters maintenance, and a multitude of other programs.

![Image 2. SNP Entrance sign at Monjo, Solukhumbu, Nepal where visitors can pay for their entrance fee.](image)

A large portion of what the DNPWC does in SNP is managing the impact of tourism of the environment. At their headquarters in Namche Bazaar, the largest town in the Solukhumbu, and where a majority of trekkers and climbers go through, they have posters encouraging environmental practices and leaving a minimal impact on the park. One poster, *SPCC: Solid Waste Management Activities*, described the role of Sagarmatha
Pollution Control Committee (SPCC), an NGO based in Namche Bazaar committed reducing waste and pollution and noted the cooperative effort that both SNP and SPCC are working towards a park with less waste on the trails and better management of human waste. Specifically it cited a mass public awareness campaign about dealing with solid waste in hotel management. This movement included participation from local people’s, Village Development Committee (VDC) chairpersons, representatives from the National Park, Eco-club members, and schoolteachers. The poster then went on to describe how glass bottles had been banned from the park, and again cited the project as a cooperative effort with support from the SNP, SPCC, VDCs, and MoCTCA.

Another poster at the park headquarters, Managing the Impact of Tourism, had helpful ways to be environmentally “responsible” tourists. To maintain a careful campsite, they recommended avoiding disturbing high altitude vegetation, camping away from streams and lakes, and not to use soap directly in water sources. For ensuring the proper disposal of rubbish, they emphasize the “carry it out” mentality instead of leaving it in the park especially when it comes to packaged goods as plastic bags take 20 years to biodegrade and plastic containers take 200 years. Instead, the waste should be separated into burnable, decay-able, and non-degradable. The burnable waste (paper, cotton, wool, cloth, etc.) and non-burnable waste (plastic, tin, glass, nylon, aluminum, etc.) should be brought to Namche Bazaar at the end of a trip so that the SPCC can deal with it properly, while the decay-able waste (left over food) should be left in a discrete place to decay or be eaten by livestock. When it comes to the management of human waste, the poster went on to describe how local toilets should be used as a priority, but if they aren’t available then a toilet tent that is at least fifty meters from any water source and should be exclusive used. Then, after breaking camp, the toilet hole should be refilled and the toilet paper should be burned.

Other posters and images adorned the walls of the headquarters showing a contrast of how much waste there used to be in the park versus how much there is now. This positive progression acts as an encouraging message for visitors and locals alike. SNP under the umbrella of DNPWC has helped tremendously with the conservation and preservation of the area in addition to drastically reducing the amount waste and visual pollution by raising awareness and helping to establish better management practices.

III. Nepal Tourism Board

The Nepal Tourism Board (NTB) was founded in 1998 after Parliament passed an act forming a partnership between “the Government of Nepal and private sector tourism industry” to focus on marketing Nepal as a more attractive tourist destination (“Introduction” 2013). It works towards rebranding the Nepal name in an effort to “increase the number of tourists visiting Nepal,” which will in turn lead to increased revenue for the country. Their efforts seem to be successful, as the number of tourists in 2012 has almost doubled since 1998 from 463,646 to 803,092 (Ghimire). Of the tourist who visited in 2012, 13% (105,015) of them were in Nepal for either trekking or mountaineering (Ghimire). As the NTB works to further promote Nepal as an ideal destination, having places that are free of litter and waste is of utmost importance to boosting the economy and they stress environmentally friendly practices as well as offer webpages that visitors can browse specifically related to sustainable waste management.
practices in areas that experience a high volume of tourism.

Their website’s easy interface and breadth of tourist activities that it explains provides tourists with the tools that they need to explore the multitude of activities that any visitor to Nepal could want. Options to choose between range from trekking and mountaineering to rafting and kayaking to shopping and sightseeing. Under the subsection of trekking and mountaineering, it provides companies to choose from as well as helpful information about how to navigate the bureaucratic obstacles to obtain permits for these activities. On their page about mountaineering, it clearly states that in order to climb the twelve trekking peaks ranging in heights of 5,806 m to 6,476 m in SNP climbers must get their permit from the Nepal Mountaineering Association (NMA) located in Kathmandu (“Everest;” “Mountaineering”). However, if one desires to climb any other, taller mountains like Everest or Lhotse, the MoCTCA issues those permits (“Mountaineering”). In addition it provides a clear hyperlink to the MoCTCA’s webpage of royalties for each of the trekking and expedition peaks.

For trekking, the NTB website similarly provides clear information about where to trek, how to obtain permits, and how to navigate the national park fees. By law, all trekkers who hike in “protected areas,” which is where all of the popular treks such as Annapurna trek or Everest Base Camp trek reside, require tourists to obtain a Trekkers’ Information Management System (TIMS) card. These TIMS identification cards can be purchased at the NTB in Kathmandu that permit tourists to trek in designated regions. Not only does a clear online interface provide the positive rebranding of Nepal as a destination, but its clear links to websites that directly foster notions of tourism environmental stewardship and messages about keeping Nepal clean enhances this fundamental idea that governmental and nongovernmental organizations are working towards: a cleaner environment in the Solukhumbu and beyond.
I. Sagarmatha Pollution Control Committee

The first nongovernmental organization in the Solukhumbu region to begin to think about waste management and reduction, and arguably the most prominent is the Sagarmatha Pollution Control Committee (SPCC). Mingma Norbu Sherpa, a former administrator of SNP, the head lama of the Tengboche Monastery, and other Namche Bazaar locals who were concerned about the waste accumulation in Namche and the greater Solukhumbu region, founded it in 1991 (Stevens, Stanley). To get SPCC started, they received a generous sum from World Wildlife Fund Nepal (WWF-Nepal) and the long-term goal of keeping the Everest region clean (Sherpa). The area that they manage covers three village development committees (VDCs), Chaurikhara, Namche, and Khumjung, which all reside within SNPBZ (Sherpa). Currently, they have expanded to have offices in Namche Bazaar, Lukla, Toktok, Kathmandu, and seasonal offices at Everest Base Camp (EBC) and Island Peak Base Camp (IPBC).

SPCC was initially formed in an effort to clean up waste, but since then it has expanded to spearhead a number of projects such as a glass bottle ban, building trash cans and toilets along the trails, educating locals and visitors, solid and human waste collection systems, the aluminum, recycling project, implementing a “garbage deposit” for each expedition, and a multitude of other projects that help to regulate and reduce waste accumulation in SNPBZ. Since SPCC is based in Namche Bazaar, the hub of the Solukhumbu and locals founded it, it is the go to grassroots group for other NGOs and GOs to help implement new waste management plans. Their partners include: MoCTCA, DNPWC, SNP, SNPBZ, NMA, VDCs, CBOs in the Khumbu, EcoHimal Nepal, the Saving Mount Everest Project, EVK2CNR, Khumbu Multipurpose Cooperative Ltd. (KMCL), and WWF-Nepal. These other organizations have been extensively involved in many of SPCC’s successful projects.

One of the first problems that the SPCC chose to tackle was the issue of how to deal with large amounts of biodegradable and non-biodegradable waste strewn along the trekking trails, at the base of popular trekking and climbing peaks, and in towns along these trails. The economic boost of tourism also brought the unwelcome problem of how to handle the tons of garbage generated in the forms of: “tins, cans, packages, [plastic] bottles, papers and kitchen wastes” (Sherpa, 15). Initially, SPCC was just trying to reduce the amount of waste by collecting and bringing it to a burning pit to reduce its sheer volume. Then they realized that a more environmentally conscious way to deal with the waste would be instead to collect and separate it into three categories: burnable, non-burnable, and re-exportable waste and deal with each of the three types of waste in a more proper way. The development and adaptation of an “integrated waste management system approach” lets the SPCC gain community involvement, spread awareness, and follow the “3Rs” of reducing, reusing, and recycling (Sherpa, 19).

The first step that SPCC took was to establish bamboo rubbish bins along the trails to eliminate the visual pollution of littering and easily facilitate the collection of waste. However, these were largely unsuccessful as they were lightweight and prone to being knocked over by the wind or livestock and they didn’t provide a space for tourists
and locals to separate their waste. Instead, SPCC began to construct large stone waste bins that had distinct sides where tourists and locals could dispose of burnable and non-burnable waste. In 2012-13, the SPCC constructed forty new waste bins at “major resting points along the trekking trails” with support and collaboration from EcoHimal, MoCTCA, and NMA (Sherpa, 13). To combat the build up of trash in Lukla and Namche Bazaar, the two largest towns in the Solukhumbu, they established a door-to-door collection system for lodges, hotels, restaurants, and other local businesses. To participate in this operation, each business pays a small commission fee to SPCC to cover the labor costs and the disposal fees. In Namche, this system removes waste from 90 companies and 42 enterprises in Lukla (Sherpa). Then, in both of these towns, the burnable waste is brought to the incinerators and the non-burnable waste is collected and when there is enough non-burnable waste, it is transported back to Kathmandu.

Image 3. One of the forty, new waste bins along the trail between Namche Bazaar and Tengboche; passersby can separate their trash into glass/cans on the left and paper/plastic waste on the right.

In smaller towns and communities along the popular trekking routes however, it’s impractical to employ someone to collect waste from only a few businesses and so instead, the SPCC has mobilized those communities. The SPCC has “created garbage management groups (GMGs)” in areas where no previous organization has existed, or in some cases, the SPCC finds preexisting Community-Based Organizations (CBOs) such as youth groups and women’s groups and educates them how to also become a GMG (Sherpa). With financial and organization backing from the SPCC, these independently functioning groups, “waste management in various settlements and trekking trails has improved significantly” (Sherpa, 16). As of 2013, the SPCC has established and educated twenty groups across the three VDCs in SNPBZ. By letting the locals assume responsibility of their own surroundings and care for their own area, they have a stronger incentive to maintain a clean environment as the duty has fallen to them.

The second major environmental task that SPCC took on was implementing a garbage deposit for all trekking and expedition peaks within SNPBZ. This garbage
deposit system holds climbers and climbing parties responsible for all of the potential waste: burnable, non-burnable, or exportable they generate throughout the duration of the trip. Upon arriving at Namche Bazaar, each group or climber is required to declare the food and equipment they brought for the expedition (Sherpa). At the end of the climb, each group/climber has to submit their garbage to SPCC to get a garbage clearance certificate to prove that they didn’t leave any waste on or around the mountain that they attempted (Sherpa). If they successfully prove that they removed all their trash, then with the certificate from SPCC, they can go to Kathmandu to either the MoCTCA or NMA to get their garbage deposit back\(^1\). All of the trekking peaks fall under the jurisdiction of the NMA and the deposit fee for each peak as of the fall of 2014 is US$ 250, while all other mountains are under the charge of the MoCTCA\(^1\). To climb Mount Everest, the most popular expedition peak in SNP, the garbage deposit cost US$ 4,000\(^1\). Previously, the SPCC only collected the burnable waste and teams had to bring all their non-burnable and exportable waste back to Kathmandu, but now, as of April 2014, they incinerate the burnable and collect the non-burnable\(^1\) (Sherpa). At EBC during the climbing season, SPCC has staff members stationed there where they clear teams who attempt Everest, Lhotse, and Nuptse and issue garbage clearance certificates there while climbers attempting any other peaks must bring their waste back to Namche Bazaar (Sherpa). Although occasionally, the SPCC has a staff member monitor other base camps such as Island Peak (Imja Tse) base camp as it is the most popular trekking peak, as 63% of all climbers hoping to summit a trekking peak in 2013 attempted it, but they do not clear groups there (Sherpa). This implementation of a garbage clearance system not only provides monetary incentives for climbers but also has been an effective way to prevent and reduce the amount of waste left behind by expeditions.
A subsequent obstacle that SPCC chose to address was the excessive amounts of glass bottles in the Solukhumbu. According to a survey they did, the average lodge or hotel sells around 30,000 beers in a year, generating 15,000 kg of empty beer bottles. These numbers don’t include the soft beverages in glass bottles that also are sold. Previously, there wasn’t a good way to deal with the bottles and lodge owners would bury them or dump them either outside of their lodge or at the edge of the village which caused injuries to trekkers, porters, guides, and pack animals. SPCC tried its best to collect all of the glass bottles to the best of their ability, but it was labor and cost intensive as well as impractical to carry the heavy bottles back to Lukla and then fly them all the way to Kathmandu. To combat the safety issue and visual as well as regular pollution that glass bottles had on the Solukhumbu, the SPCC in combination with SNP and local Youth Groups decided to implement a ban of all glass bottles within SNPBZ. As with any big change, it took several years to a total ban of all glass bottles in the park, but currently in 2014, soft drinks are sold in plastic bottles and beers are sold in aluminum cans greatly reducing the hazard and weight of these mountain luxuries.

Although they successfully eliminated glass containers in SNPBZ, the problem of what to do with the plastic bottles and aluminum cans has become a new issue. In dealing with the plastic bottles, Yangji Sherpa, the public relations officer at SPCC, believes that it is too late to completely eliminate them from the park as the infrastructure for bottled water is already in place. Ang Phinjo Sherpa, director of EcoHimal Nepal echoed her view, saying that an the owners of the ten or eleven bottled water manufacturers in the Solukhumbu are to politically connected to ban plastic bottles from the park.

Additionally, he said that previously refill sites for water bottles were constructed but
they were not as effective as they had hoped they would be. Instead, SPCC and SNP encourage the use of iodine to purify tap water and reusing bottles if bottled water is purchased. Finally, to raise awareness about the excessive use of plastic bottles, SPCC and EcoHimal Nepal’s Saving Mount Everest Project worked in conjunction with local schools to fill the used plastic bottles with sand so that they could construct “green” waste bins along the trail.

The way that SPCC has addressed the issue of aluminum cans mostly from beer consumption was by creating the Aluminum Recycling Project in December of 2013. This project turns used aluminum cans into souvenirs that are sold at Memories of Khumbu in Namche Bazaar. In conjunction with EcoHimal and KMCL, the local governance in Namche, SPCC has created an opportunity not only to recycle cans, but also to provide economic opportunity for the two women who work on melting the aluminum and molding it into sellable wares. The average souvenir is comprised of 15 cans and it takes approximately an hour to make each souvenir from melting, molding, and painting. Since SPCC provides the cans to the project for free, it generates a source of income for the NGO as the trinkets cost NRs 450 for the smaller ones and NRs 2500 for the larger ones. This project as well as the glass bottle ban, expedition management, and waste collection management system and outreach demonstrates the ingenuity and commitment that SPCC has towards waste reduction, but also clearly shows how NGOs and GOs worked together to address these environmental issues.

II. EcoHimal Nepal

EcoHimal an International Nongovernmental Organization (INGO) began working in the Solukhumbu in the early 1990s (“Background”). During that time, the Austrian and Nepali government jointly constructed a hydropower plant in Thame in the Solukhumbu. EcoHimal was created as a liaison between the Austrian government and the locals as a way to hand over the responsibility of finishing it and educating locals on how to maintain the hydropower plant. Since it’s foundation, EcoHimal’s focus has expanded and now focuses on a number of different projects within Nepal aiming to improve the standard of living through “through sustainable development and community capacity-building” at the grassroots level and in-depth involvement from the locals (“Background”). Their goals for dealing with the environment are to “conduct activities for natural resource management, biodiversity conservation, ecotourism, forestry, watershed management and alternative energy promotion,” which they’ve demonstrated through their extensive work throughout places like the Solukhumbu (“Objective”). After a Nepalese governmental policy change in the mid-2000s, INGOs were no longer permitted to work directly in Nepal, but instead had to go through a secondary or local NGO. In order to more easily facilitate EcoHimal’s work, they created a sister organization, EcoHimal Nepal, a Nepal-based NGO that could work directly in the country.

Recently, EcoHimal is most well known for spearheading their “Saving Mount Everest – Waste Management Project,” which took place in 2011. For this project, EcoHimal partnered with Everest Summiteers Association (ESA), SPCC, Nepal National Mountain Guide Association (NNMGA), NTB, SNPBZ, DNPWC and many others including funding from MoCTCA, NMA and Nepalese corporations (“Project Concept”).
The goal of the Saving Mount Everest Project (SMEP) was to not only remove waste from Mount Everest itself, but also to develop a sustainable waste management system in the Solukhumbu (“SME”). The first phase of the SMEP was to remove the waste from Mount Everest between basecamp and the South Col. Since, Everest was first climbed in 1953, thousands of expeditions have left behind oxygen tanks, gas canisters, tents, ropes, and an assortment of other discarded items (“Project Concept”). For this part of the SMEP, EcoHimal relied on the ESA, NMA, and NNMG to organize climbers from various national and international companies who were capable of safely retrieving trash from Everest. Their goal was to gather between eight and ten tons of waste from Everest with the help of one hundred porters and mountaineers during the spring climbing season in 2011 (CITATION). With the trash that they collected, they recycled or incinerated what they could locally, and the rest of it was brought to Kathmandu with support from the Nepalese government.

The second half of the SMEP worked towards creating a waste management system through building rubbish bins and toilets, bringing an incinerator to Namche Bazaar, and emphasizing public awareness among locals. These three initiatives were done with an exceptional amount of cooperation and teamwork with SPCC. The construction of approximately forty waste bins along the trails from Lukla to EBC was described in the SPCC section. In addition to making trashcans, they also made several sanitation facilities, one at the police check post in Namche and the other in Topdada (Sherpa). Each restroom was equipped with two toilets, one that was free for the public, and one that was for tourists and required a small fee to pay for its upkeep and maintenance (Sherpa). These new toilets had concrete pits to collect the human waste which helped prevent the contamination of possible potable water sources.
The second way that SMEP worked to create a more efficient waste management system was to put an environmentally friendly incinerator at Namche to burn the burnable waste with the help of SPCC and EVK2CNR (Sherpa). The incinerator was designed and manufactured in the UK but it was already assembled when it arrived in Nepal, so EcoHimal had to hire a “giant Russian helicopter” because it was so heavy which was very costly and impractical according to Ang Phinjo Sherpa, director of EcoHimal Nepal. The generator is a zero emission, carbon neutral incinerator that runs on diesel and electricity\(^1\). Even though the incinerator is a big step up from the previous waste management practice of burning the burnable trash in an open pit it’s not the most practical for its location. Phinjo Sherpa voiced several concerns about the incinerator, especially because it requires diesel, as it is expensive and difficult to bring to Namche; it only has a 35 kg per hour capacity, when it would end up being more efficient to have one that burned 100 kg per hour; and finally because it is incredibly complicated to run and maintain, the locals have difficulties learning how to operate it and fixing it if it breaks. However, Phinjo Sherpa is coordination with SPCC is planning on acquire another one that is built locally, with an increased capacity, and doesn’t run on diesel.

As part of the second stage of SMEP, a large focus of EcoHimal was to spread awareness to locals so that it would lead to change in the future instead of perpetuating the cycle of “climb up, then clean up”\(^3\). They offered educational trainings that targeted porters and lodge owners\(^3\). These awareness programs reminded and demonstrated ways that they can implement modern waste management systems and recycling techniques (“Project Concept”). One way that EcoHimal addressed the issue of trash among the locals was to encourage cleanliness with the self and within their homes in the hope that they would then extend those principles towards their surroundings by instilling a sense of responsibility towards themselves and others to maintain a clean environment\(^3\). For lodge owners, they reintroduced the idea of eating locally. Instead of importing foods that they think visitors will enjoy that often have a lot of packaging, EcoHimal encouraged the idea of serving more regionally traditional foods. This would not only reduce the cost of food because there would be minimal transportation, but it would eliminate the wrappers that imported foods have\(^3\). Since the first SMEP was such a success both on Mount Everest and in the surrounding area, EcoHimal along with a new partner, World Heritage Preservation Society, an NGO based in New York, USA and many of their previous partners are planning on doing a similar clean up on Everest as well as furthering their development of the waste management systems in the spring of 2015.

Other projects that EcoHimal closely works with SPCC include: the aluminum recycling project, the manufacturing of recycled paper briquettes, and a plastic bag ban. As mentioned in the previous section, EcoHimal partnered with establishing the aluminum recycling project, an initiative to reuse cans and create souvenirs that support the local economy. EcoHimal’s Phinjo Sherpa is looking to upgrade the relatively primitive system that’s currently in place for creating those trinkets\(^3\). The present system is labor, time, and gas intensive, something that Phinjo Sherpa believes that with enough fund raising they could bring a machine to Namche that could both melt the aluminum cans down to moldable metal as well as a 3D-printer that manufactures these wares\(^3\). Not only would this be a more efficient way to create these items, but if more goods were created in Namche, not only would it reduce transportation costs of bringing in sellable items but it also would stimulate the local economy more\(^3\). EcoHimal had a similar
thought for the production of paper briquettes. These briquettes are composed 30% of compressed paper and 70% dried leaves, yak dung, sawdust, and other burnable waste matter. By providing training to members of the SPCC and the KMCL, EcoHimal gave those organizations the know-how to then teach local community members. This recycling initiative allows local down-cycling of waste paper into a revenue source, that would otherwise be burned for free.

Not only have EcoHimal and SPCC successfully banned glass bottles within SNPBZ, but in 2012, the implemented a plastic bag ban. Shops are no longer allowed to give tourists plastic bags to hold the goods they buy, but instead have cloth bags or use the plastic bags that the goods came in for the customer. Since the abolishment of plastic bags is fairly new, as with the glass bottle ban, its message is taking a few years to disseminate and become the norm in the Solukhumbu, but EcoHimal, the SPCC, and SNP are hopeful that the project will be successful. For this initiative, EcoHimal not only provided education about why plastic bags are detrimental for the environment, but also education about how to make their own reusable bags. This again provides economic opportunities at the local level that are also environmentally friendly. The education EcoHimal provides for the locals about the reuse of aluminum and paper and making reusable bags emphasizes their motto of “support[ing] income-generating skill development,” while also maintaining their focus of “conduct[ing] activities for natural resource management and ecotourism” (“Objectives”).

In every project that EcoHimal works on in the Solukhumbu, they also work in conjunction with local grassroots organizations (SPCC, SNPBZ Committee, KMCL, etc.) to ensure local participation, larger NGOs and INGOs for funding and project implementation, as well as the Nepali government to ensure they’re following the laws.
and to get help navigating permitting processes. Phinjo Sherpa had only positive things to say about the NGOs and government branches that EcoHimal has worked with in SNPBZ. The only issue EcoHimal ran into was when the Nepali government stopped allowing INGOs to work directly in Nepal and so EcoHimal had to create EcoHimal Nepal, a Nepali NGO.

III. World Heritage Preservation Society: Rescue Everest

The World Heritage Preservation Society (WHPS) is an NGO that is in the process of being created by an American Alex Nuñez and some of his friends. The focus is on “protecting and preserving” high-prolifer world heritage sites. Mr. Nuñez believes that by focusing on well-known heritage areas that are being affected by environmental or other reasons, it is easier to generate international support and larger funds to have a “more impactful” change to fix the degradation. An additional bonus for helping famous places is that because they are so well known that restoring and preserving them can act as examples for lesser known projects with similar goals. Mount Everest, an iconic, world-renowned landmark, and world heritage site is exactly the type of project Mr. Nuñez and his partners want to tackle. WHPS’ mission within SNPBZ is to “contribute to the long-term sustainability of mountain tourism in SNP, minimize its environmental impact, protect biodiversity and empower local communities as the responsible custodians of park conservation” (“Project Rescue”). By creating a culture that keeps the environment clean and values sustainability, WHPS can build a long-term solution that no longer requires outside groups coming to the area to “fix” the problem. Luckily, these goals coincide with the SMEP project of 2011.

The organizations that arranged the SMEP were planning on doing it again in the near future, as it had been such a success the first time. WHPS is hoping to be a large participant in the second SMEP in the spring of 2015. They believe that they can add and improve on what was done last time by providing an increased international media attention, which will lead to more donations so that the project can remove more waste and educate more locals about sustainable waste management systems. Mr. Nuñez is confident that a news presence will be possible because of three fundamental differences from last time: a theme that creates bonds between Nepalese and American children who are the next environmental stewards, a united front from all Nepalese governmental and nongovernmental organizations tackling waste in the Solukhumbu, and sponsoring a group of climbers to summit Everest so that it can be cleaned “from the top, down.” Not only will they be able to get highlighted in the press, but also in light of the recent accident on Everest, the international audience will have a furthered interest in the next climbing season.

WHPS hopes to include children as a big selling point for funding the next SMEP. By not only collecting and donating school supplies to schools in the Solukhumbu, but they also to help incorporate them into the clean up and waste repurposing effort. In a joint cooperation with the Nepali Youth Program and KMCL, WHPS is planning on connecting children in the Solukhumbu with children in the US or Canada. By fostering a relationship between these kids, Mr. Nuñez hopes to provide a way for them to establish a connection with the Khumbu. He explained that when people have a personal connection to a location, they’re more personally invested in its long-term environmental
care and are less inclined to carelessly discard waste. WHPS hopes to target more children from other countries, especially those who send the most consistent expeditions to climb Everest like Canada, Germany, Austria, the UK, Japan, Australia, and New Zealand to instill environmentalism in the people who could face similar problems in the future.

Not only will putting our hope “in the future” help raise funds for this multi-million dollar project, but showing a unified group of organizations working towards a common, holistic goal. WHPS firmly believes that as consumer who partakes in crowd sourced fundraising is more likely to support a cause that is easy to understand and presents a universal voice. Luckily, as the organizer of the SMEP of 2015, all participating groups truly believe in the project to help the environment and their community so bringing them together hasn’t been too challenging. However, certain subtle tensions do exist among some of the members of different organizations, but luckily Mr. Nuñez doesn’t have to mediate these relationships too much as they all do truly believe in goals of SMEP.

Finally, WHPS imagines that putting a team of climbers onto the summit will generate a large amount of financial support. Their motto of cleaning Everest from “the top down,” is “sellable”. The last SMEP purposely chose not to clean above the South Col because they were concerned that attempting the summit had the possibility to detract from the real goal of the project: to clean, not to climb. The organizers at WHPS have convinced the SMEP partners to summit this time because of their plan to have live streaming of climbers collecting trash from the top of the world. This promotional aspect of the SMEP of 2015 will engage the worldwide community throughout the entire project and increase the appeal of sponsorship from corporations. Cleanup efforts this spring with the added help from WHPS will promote a tourism culture of environmental stewardship that will create a lasting impact on waste management infrastructure.

IV. Nepal Mountaineering Association

The Nepal Mountaineering Association has been around for forty years as the oldest and only alpine club in Nepal. The NMA aims to honor successful mountaineers, help families who have had relatives lose their lives working in the Himalaya, promote mountain tourism and conservation, and preservation of cultural heritage. Especially in SNPBZ, NMA has teamed up with many other organizations to promote eco-friendly tourism and help prevent climbers/climbing groups from leaving their waste on the mountain or at base camp. Environmental issues that NMA addresses include: respect towards locals and animals, cooking and firewood use, and human waste and garbage disposal and management. On NMA’s website under their climbing rules, they clearly state that by purchasing a trekking peak permit, groups are promising to protect the environment. It is prohibited to leave “foreign materials, such as fix rope [sic], pitons, etc.” at base camp or other camps on the mountain itself and instead it must be removed and brought back to Namche to be properly processed by SPCC.

In terms of properly dealing with trash near all the trekking peaks and NMA’s climbing rules also have specific and clear instructions of how to dispose of all waste in
SNPBZ with the help of the SPCC. First, they clearly state that littering of any sort or burning trash is a “moral and legal offense,” punishable with heavy fines (“Kathmandu”). Secondly, they remind climbers that in order to receive a garbage certificate to get the garbage deposit back, it is imperative that all expeditions bring their burnable and non-burnable waste to SPCC in Namche Bazaar so that the SPCC can properly dispose of it (“Kathmandu”). However, since the SPCC doesn’t have the capacity to manage items like “tin, empty LPG gas cylinders, EPI gas [containers], oxygen cylinders, and batteries” should not only be brought back to Kathmandu, but their country of origin to be recycled of safely (“Kathmandu”). NMA’s heavy emphasis on clean climbing is noted on almost every page of their website and they proudly provide financial support and partnerships with other NGOs and GOs’ projects.

NMA is also responsible for managing climbing permits and garbage deposits in conjunction with the MoCTCA. They divide the responsibility of facilitating climbs on all the “climb-able” mountains in Nepal. NMA is in charge of thirty-three designated “trekking peaks” that are lower than 6,500 meters but still necessitate basic to advanced mountaineering skills (“Trekking Permits”). Out of those mountains, sixteen are in the Solukhumbu ranging from Chhukhing Ri at 5,550 meters high to Mera Peak at 6,470 meters (“NMA”). These trekking peaks are divided into two categories: Group A Peaks and Group B Peaks with differing permit prices (see Appendix 2, Tables 3 and 4), but both groups have to pay a garbage deposit of US$ 250 (“NMA”). The two distinct groups divide the trekking peaks into ones that require more lengthy expeditions and more time on the mountain, creating the possibility of leaving more trash behind (Group A) and peaks that can be climbed in just a few days (Group B). This distinction in duration and difficulty dictates the cost of the climbing permits.

In addition to overseeing the trekking peaks’ permitting process, NMA requires that every individual who attempts these mountains must have a Nepali guide who is registered with them (“Climbing Rules” Nepal Mountaineering Association). The guide or sirdar, a lead mountain guide who is typically a Sherpa’s job is to lead the climbers up the mountain and to act as a NMA liaison that works in the field ensuring environmental awareness (“Climbing Rules” Nepal Mountaineering Association). They are supposed to report climbing parties if they exceed the thirty day limit of the climbing permit, attempt to climb a mountain that they did not get a permit for, and dispose of their waste in the proper manner (“Climbing Rules” Nepal Mountaineering Association). The emphasis on environmental protection and mindfulness encompasses the foundation of NMA, an NGO striving to promote tourism while minimizing its impact.
V. Trekking Agencies’ Association of Nepal

The Trekking Agencies’ Association of Nepal (TAAN) is a nongovernmental organization that focuses specifically on the management of trekkers. It was formed in 1979 by trekking organizations who “realized it was time…to create an umbrella organization under which they could work together to meet their common goals,” of increasing the appeal of trekking tourism to generate more profits (“About”). Not only was the creation of TAAN for promoting tourism in conjunction with the government, but also it was formed to simultaneously “develop and promote adventure tourism” while also “mitigate[ing] mountain environmental stress” (“About”). Since TAAN was created, it has expanded to include over one thousand local and international trekking agencies who are working towards tackling the “rising pollution on trekking routes” and legislation and policies that will make trekking safer and more appealing for tourists (“Trekkers’” 2013).

One of the main responsibilities that TAAN shares with the NTB is the issuing of trekking permits or Trekkers’ Information Management System (TIMS) cards for hiking in restricted areas (“Trekkers’” 2013). The TIMS permit system was created to make trekking more safe by keeping track of where each visitor goes incase of an emergency and by monitoring how many tourists visit each area so they can provide enough services for them (“Trekkers’” 2013). In SNPBZ, in certain towns along the trails there are TIMS check posts where they record where and when trekkers visited each town as well as their intended destination, providing potential search and rescue efforts with the most accurate location to begin searching for tourists should a problem arise. The TIMS creates a safer trekking environment as well as the ability to monitor routes that have heavy tourism and its impact on the ecosystem.
Previously, it had been the sole responsibility of the NTB, but as of April 1, 2010, the Nepal government decided to have the NTB and TAAN work together on issuing TIMS cards. Now, visitors can get their TIMS document at TAAN or the NTB in either of their Kathmandu or Pokhara offices (“Trekkers’” 2013). In addition to sharing the responsibility of trekking permits, in 2010 the government also passed a new policy that distinguished two types of TIMS cards (“Trekkers’” 2013). Now, tourists traveling without a company, or Free Independent Trekkers (FITs) are issued green TIMS permits and must pay US$ 20 while tourists who trek with a company are given blue TIMS cards and only have to pay US$ 10 (“Trekkers’” 2011). Not all visitors to restricted areas have to obtain one of those permits however, tourists who have mountaineering permits from NMA, MoCTCA, or Department of Immigration, diplomats, guest of the Nepali government, and foreigners who have residential visas (“Trekkers’” 2013). The revenue generated from purchasing TIMS cards is used for making and printing them, caring for “trekking workers,” search and rescue operations, and developing infrastructure and responsible tourism that conserves and protects the trails (“Trekkers’” 2013).

Besides being the organization to oversee TIMS cards, they also have a strong inclination towards environmental protection. TAAN aims to enhance, develop, and promote Nepal’s mountain tourism while “preserving the environment of Nepal” (“About”). By developing a “code of conduct for responsible trekking operations,” they have realized that they have the ability to create a positive change on proper waste disposal and environmental stewardship by educating their clients and demonstrating the proper way to be a “responsible” tourist (“Responsible”). In addition to showing trekkers how to leave a minimal impact, they also sponsor various environmental programs such as workshops on environmental awareness, World Environment Day programs, cleanup projects, and education “about the importance of maintenance [sic] of ecological balance” for then general public and school children (“Trekking Agencies;” “About”). They are able to spread the message of how environmental protection now will benefit locals in the future and promoting responsible tourism is a “win-win approach for the environment and economy” (“Responsible”). TAAN, a nongovernmental organization in Nepal, further demonstrates how the successful collaboration with a government organization can achieve increased public awareness, better waste management systems, and the elimination of trash on mountains and surrounding areas in SNPBZ.

Conclusion

In the exploration of each of the governmental or nongovernmental organizations that were examined in this study, there was extensive overlap and perceived cooperation between the two as some part of the government was involved in certain aspects of every project and policy that was instigated by a nongovernmental organization in their effort to tackle the problem of waste within SNPBZ. Each NGO that was researched and interviewed, reported only positive interactions with not only other NGOs but the GOs as well. Because NGOs operating within Nepal have to abide by national laws, the only issue that arose was between EcoHimal and its ability to operate within Nepal. As it started as an INGO, after the Nepali government disallowed direct involvement from INGOs with local projects, EcoHimal decided to create a Nepal-based organization that would no longer have to jump through legislative barriers. Other than the inconvenience of creating a sister organization in Nepal, EcoHimal and the other NGOs reiterated their positive relationship with the various government branches they work with.

NGOs and GOs in Nepal were able to navigate the complexities of working together effectively because each group has its own niche or specialty that is helpful in tackling vast problems such as the issue of waste in the Khumbu. Governmental organizations are necessary to create laws and policies to regulate and remove waste, international nongovernmental organizations help provide funding and facilitate getting media attention on the global level, and Nepal-based nongovernmental organizations are able to work at the grassroots level to effectively communicate the changes and instill a sense of ownership of projects in locals. By having these different groups work together, each leading a different portion of environmental endeavors, collectively they are successful, serving as an example of how partnerships between among these groups can and do work harmoniously and efficaciously. However, just because there was success with these organizations in beginning to implement waste management systems and cleanup efforts, it doesn’t mean that all NGOs, INGOs, and GOs always cooperate and coordinate their projects. Making generalizations from this case study is not always or even often the case in other countries, or even in addressing other issues within Nepal.
Appendices

I. Figures

Figure 1. The Growth in Tourism in SNPBZ from 1971 to 2002.

Figure 2. The Most Heavily-Used Trails in SNP
Figure 3. Methods of Waste Disposal that are Currently Being Used in SNPBZ as of a 2010 study.
Figure 4. Map of SNP and SNPBZ.
## Tables

Table 1. Comparison of Climbing Permit Prices Previously versus Current Prices in US$.

<table>
<thead>
<tr>
<th>Mountain</th>
<th>Previous Spring Climbing Cost</th>
<th>New Spring Climbing Cost</th>
<th>Previous Fall Climbing Cost</th>
<th>New Fall Climbing Cost</th>
<th>Previous Summer/Winter Cost</th>
<th>New Summer/Winter Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Everest – via South East Ridge</td>
<td>25,000</td>
<td>11,000</td>
<td>12,500</td>
<td>5,500</td>
<td>6,250</td>
<td>2,750</td>
</tr>
<tr>
<td>Everest – via other routes</td>
<td>15,000</td>
<td>10,000</td>
<td>7,500</td>
<td>5,000</td>
<td>3,750</td>
<td>2,500</td>
</tr>
<tr>
<td>Other 8000m Peaks</td>
<td>5,000</td>
<td>1,800</td>
<td>2,500</td>
<td>900</td>
<td>1,250</td>
<td>450</td>
</tr>
<tr>
<td>7501 – 7999 m Peaks</td>
<td></td>
<td>2,000</td>
<td>1,000</td>
<td></td>
<td>500</td>
<td></td>
</tr>
<tr>
<td>7000 – 7999 m Peaks</td>
<td></td>
<td>1,500</td>
<td>750</td>
<td></td>
<td>375</td>
<td></td>
</tr>
<tr>
<td>6501 – 6999 m Peaks</td>
<td></td>
<td>1,000</td>
<td>500</td>
<td></td>
<td>250</td>
<td></td>
</tr>
<tr>
<td>Ama Dablam 6812 m</td>
<td></td>
<td>1,000</td>
<td>1,000</td>
<td></td>
<td>500</td>
<td></td>
</tr>
</tbody>
</table>

*Note: The price change was only applicable towards climbing Mt. Everest and other 8000 meter mountains.*

Table 2. The Cost of Garbage Deposits in US $ for Mountains Under MoCTCA’s jurisdiction.

<table>
<thead>
<tr>
<th>Mountain</th>
<th>Garbage Deposit Cost</th>
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<tbody>
<tr>
<td>Everest – via South East Ridge</td>
<td>4,000</td>
</tr>
<tr>
<td>Everest – via other routes</td>
<td>4,000</td>
</tr>
<tr>
<td>Other 8000m Peaks</td>
<td>3,000</td>
</tr>
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<td>7501 – 7999 m Peaks</td>
<td>2,000</td>
</tr>
<tr>
<td>7000 – 7999 m Peaks</td>
<td>2,000</td>
</tr>
<tr>
<td>6501 – 6999 m Peaks</td>
<td>1,000</td>
</tr>
<tr>
<td>Ama Dablam 6812 m</td>
<td>2,000</td>
</tr>
</tbody>
</table>
Table 3. The Cost of Permits for Group A NMA Trekking Peaks.

<table>
<thead>
<tr>
<th>Group A Peaks in SNP</th>
<th>Height of Peak (m)</th>
<th>Royalty for teams of 1-7 persons</th>
<th>Royalty for each additional person (up to 12 total)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cholaste</td>
<td>6,440</td>
<td>US$ 500.00</td>
<td>US$ 100.00</td>
</tr>
<tr>
<td>Machermo</td>
<td>6,237</td>
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<td></td>
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<tr>
<td>Kyazo Ri</td>
<td>6,186</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nirekha</td>
<td>6,186</td>
<td></td>
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<tr>
<td>Ombigaichen</td>
<td>6,340</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Phari Lapcha</td>
<td>6,017</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lobuche West</td>
<td>6,145</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ABI</td>
<td>6,097</td>
<td></td>
<td></td>
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<tr>
<td>Chhukhung Ri</td>
<td>5,550</td>
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<td></td>
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</table>

Table 4. The Cost of Permits for Group B NMA Trekking Peaks.

<table>
<thead>
<tr>
<th>Group B Peaks in SNP</th>
<th>Height of Peak (m)</th>
<th>Royalty for teams of 1-4 persons</th>
<th>Royalty for teams of 5-8 persons</th>
<th>Royalty for teams of 9-12 persons</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mera Peak</td>
<td>6,470</td>
<td>US$ 350.00</td>
<td>US$ 350.00 plus 40.00 per additional person</td>
<td>US$ 510.00 plus 25.00 per additional person</td>
</tr>
<tr>
<td>Kusum Kangru</td>
<td>6,367</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Kwangde</td>
<td>6,011</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Imja Tse (Island Peak)</td>
<td>6,160</td>
<td>US$ 350.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lobuche</td>
<td>6,119</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Kongma Tse (Mehara Peak)</td>
<td>5,849</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pokhalde</td>
<td>5,806</td>
<td></td>
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</tr>
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</table>
III. Additional Images

**Image 9.** Waste left outside storefronts waiting for an SPCC employee to bring the waste to the incinerator as part of their door-to-door collection system in Namche Bazaar.

**Image 10.** Souvenirs made through the ARC being sold in Memories of Khumbu, a shop in Namche Bazaar.
Many of the items that were sold at the Saturday market in Namche Bazaar came in plastic wrappers and most of the goods had at least one non-biodegradable component.
IV. Glossary of Acronyms

ARC Aluminum Recycling Project
CBO Community-Based Organizations
DNPWC Department of National Park and Wildlife Conservation
EBC Everest Base Camp
ESA Everest Summiteers’ Association
EVK2CNR Everest and K2 Study funded by the Italian National Research Council (CNR)*
FIT Free Independent Trekker
GMG Garbage Management Group
GO Government Organization
INGO International Governmental Organization
IPBC Island Peak Base Camp
KMCL Khumbu Multipurpose Cooperative Ltd.
MoCTCA Ministry of Culture, Tourism, and Civil Aviation
NGO Nongovernmental Organization
NMA Nepal Mountaineering Association
NNMGA Nepal National Mountain Guide Association
NTB Nepal Tourism Board
REP Rescue Everest Project
SAARC South Asian Association for Regional Cooperation
SMEP Saving Mount Everest Project
SNP Sagarmatha National Park
SNPBZ Sagarmatha National Park and Buffer Zone
SPCC Sagarmatha Pollution Control Committee
TAAN Trekking Agencies’ Association of Nepal
TIMS Trekkers’ Information Management System
VDC Village Development Committee
WHPS World Heritage Preservation Society
WWF-Nepal World Wildlife Fund Nepal

* No direct translation as the organization is Italian based.
V. Research Methodology

The research for this project was intended to be conducted mostly through observations and interviews with individuals and business owners in SNPBZ on a twenty-four trek throughout the Solukhumbu. Unfortunately, after falling on day one, which resulted in a knee injury, I was only able to stay in the Khumbu for a week before needing to seek medical care that was not available there. Upon returning to Kathmandu I was unable to do many interviews for the next week and a half as I was relative immobile, so instead I was able to do extensive research online, reading articles and websites, and attempting to contact NGOs and GOs. Towards the end of the month as I had an easier time walking, I conducted interviews with various NGOs, but regrettably, was unable to speak with anyone at any of the three governmental offices that I was also researching. I went to their offices on two different occasions, but was unable to speak to anyone the first time, and they were closed for the SAARC summit the second time. Additionally, the MoCTCA’s website was not working for the duration of the ISP time so all the information I received about it was through second hand sources and my reporting on it is not as thorough as it could have been if I was able to access their website or get an interview.

Interview Questions for NGOs:
1. Name, Occupation, From Where?
2. Can you describe your position within the NGO and how you got involved?
3. Can you talk about the history of the NGO and how it was started?
4. What are the main goals of the NGO?
5. What projects do you work on?
6. How do you implement these projects?
7. What are the big successes and challenges for the NGO?
8. Who are your partners (other NGOs, INGOs, GOs)?
9. What was it like to work with other partners?
10. Should tourism in the Solukhumbu have a limit to the number of visitors?

* Other NGO specific questions were asked depending on which organization was being interviewed.
Endnotes


Bibliography


Image Citations:

Cover Photo: Kristen Kelliher

1. Kristen Kelliher
2. Kristen Kelliher
3. Kristen Kelliher
4. Kristen Kelliher
6. Kristen Kelliher
7. Kristen Kelliher
8. Kristen Kelliher
9. Kristen Kelliher
10. Kristen Kelliher
11. Kristen Kelliher
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Suggestions for Further Research

Spending more time in the Solukhumbu to examine the effectiveness of the changes and policies that have been implemented by NGOs in cooperation with GOs regarding waste could enhance this project. By speaking to lodge, restaurant, and business owners it would be good to learn if they had indeed changed the way that they disposed of trash. It also would be beneficial to follow up with different eco-clubs, GMGs, and CBOs that have taken charge of waste management within their villages. Additionally, it would be interesting to view SPCC’s facilities such as the incinerator at Namche, the previous burn pit, and the aluminum recycling project’s facilities and talk with the locals who run those operations.

It would also be helpful to try and get information from people instead of relying on sources for the material that I found on the government’s involvement in operations in the Khumbu. It was difficult to find someone to talk to as a translator would be necessary and their offices were quite busy preparing for the SAARC summit and so they either busy or closed the two times I went to do research. It would be great to get GO’s point of view on interactions with NGOs and see if they present consistent stories of cooperation and effective partnership.

Additionally, it would be beneficial if I had been able to connect with my contact at WWF-Nepal, Dr. Ghana Gerung. WWF was involved in the issue of waste management and clean up in the early 1990s. They were the organization that provided enough funds for SPCC to start up. Since then, their involvement in the Khumbu dissipated, but for historical details, it would be interesting to learn why they got involved with the project in the first place and also why they left. Unfortunately I had difficulty finding resources online that were able to speak to WWF’s involvement in SNPBZ and perhaps Dr. Gerung could have pointed me in the right direction so WWF could be included in the paper like I was initially planning.

Finally, it would have been interesting to further explore the idea of implementing some sort of cap on the number of tourists and see where different NGOs and GOs fall on that spectrum as it has often been thoroughly debated in the international community. Would the potential economic losses be regained over time if the environment of SNP were allowed to recover for a year? Could the government or other private funding to compensate the financial hit compensate those local business they would receive? How would these ramifications be felt in other parts of Nepal?
A picture of the author, Kristen Kelliher with the daughter of Natang Sherpa, owner of Moonlight Lodge in Namche Bazaar, who she interviewed as part of her research. (Photo by Kristen Kelliher)