
Nepal Earthquake Disaster Operations Team

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Nepal Earthquake Disaster Operations Team

This report describes the timeline and extent of HSI response efforts, evaluates and assesses community (animal and human) health and medical response actions, and identifies issues and challenges faced by HSI responders during the days following the earthquake until their withdrawal, with the goal of providing HSI with practical recommendations to address those challenges.
EXECUTIVE SUMMARY

The 7.8 Mw/8.1 Mw magnitude earthquake that occurred in Nepal on April 25, 2015 and that was followed by hundreds of small and large aftershocks, constituted a disaster of immense proportions for people and animals alike. The effect of the earthquake was felt largely in the rural areas where animals, mostly livestock are housed under structures built of rocks held together with mud or cement. The collapse of these structures injured, displaced or killed millions of livestock which Nepalese rely upon for their livelihoods. The impact on rural families and communities of these losses will be felt for years to come. The impact on dogs, that are mostly free-roaming and located in major urban centers, was negligible.

The HSI Earthquake response team performed admirably in Nepal in the face of a disaster of massive proportions and enormous challenges. Members of the team were experienced in disaster response and the team served as the hub of coordination with other international non-governmental organizations.

The Animal Welfare Network of Nepal (AWNN) was well-established in Kathmandu. Its members include local animal welfare agencies, and it is led by a Nepalese national who is well-placed to access supplies, equipment, facilities and to facilitate procurement, transportation and distribution of resources when political challenges arose. Working together, AWNN and the HSI team set an example for collaboration among rescue organizations for future disasters. In all, more than 9,000 animals were treated, helping more than 1,000 families to save their animals and sustain their own livelihoods.

The earthquake did, however, expose gaps in HSI disaster operations. The lack of livestock/large animal disaster expertise was a particular problem there was a significant need among the District Livestock Service Officers for disaster response training. This report includes recommendations for coordination and response improvements.
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INTRODUCTION

The April 2015 Nepal earthquake (also known as the Gorkha earthquake) killed more than 9,000 people and injured more than 23,000. It occurred at 11:56 NST on 25 April, with a magnitude of 7.8Mw/8.1Mw (on the Moment Magnitude Scale) and a maximum Mercalli Intensity of IX (Violent). Its epicenter was located east of the district of Lamjung and its hypocenter was located at a depth of approximately 8.2 km (5.1 mi). The earthquake also triggered huge avalanches on Mount Everest and in the Langtang Valley. It was the worst natural disaster to strike Nepal in more than 80 years.

Geophysicists and other experts had warned for decades that Nepal was vulnerable to a deadly earthquake, particularly because of its geology, urbanization, and architecture. Hundreds of thousands of people were made homeless with entire villages flattened across many districts of the country. Centuries-old buildings were destroyed at UNESCO World Heritage sites in the Kathmandu Valley.

In addition to the human toll, an estimated six to nine million animals, mostly livestock, were affected by the earthquake. Poultry houses collapsed, killing hundreds to thousands of birds in each one. Larger animals, including goats, sheep, pigs, cattle and water buffalo, are usually kept tethered under rock and mud structures and food and water are brought to them. In the most highly affected districts most of these structures collapsed as well, injuring or killing the animals sheltered underneath. Nepalese families in areas outside Kathmandu rely heavily on their animals for their livelihoods, and the impact of livestock loss on these communities will be felt for years to come. Companion animals, mostly dogs, were largely unaffected because they roam freely outdoors and were not trapped in collapsed buildings. In terms of impact on animals then, the earthquake constituted a rather unique animal welfare emergency.

After the first tremor, aftershocks continued throughout Nepal at 15–20 minute intervals, with one shock reaching a magnitude of 6.7Mw on April 26 and another a magnitude of 7.3Mw on May 12, 2015. The latter aftershock killed hundreds and injured thousands of people near the border with China.

PURPOSE

This report lists the timeline and describes response efforts, evaluates and assesses community (animal and human) health and medical response actions, and identifies issues and challenges faced by HSI responders during the days following the earthquake until their withdrawal.

SCOPE

Although many humanitarian and animal welfare relief organizations responded to the earthquake, this report is limited to the activities of HSI staff and responders, including HSI’s interactions with other responding organizations. It covers the period from 25 April 2015, when the earthquake first occurred, to the departures of key HSI team members between June 10 and June 13, 2015.

METHODOLOGY

This report incorporates information from daily situation reports constructed from phone or Skype meetings between the Senior Manager of Disaster Operations (SMDO) at headquarters and two or more members of the Response Team in Nepal. It also includes information gleaned from interviews and e-mail communications with 7 members of the HSI Team.
INCIDENT TIMELINE, PHASE ONE: 25 April – 4 June, 2015

The response of Humane Society International to the Nepal Earthquake of 25th April 2015 occurred in two phases. This is a report of the first phase, which was mostly characterized by direct veterinary response and mobile animal health camps in the affected districts.

25 April 2015

| 11.56 NST | Earthquake with magnitude 7.8Mw/8.1Ms occurs east of the district of Lamjung, at a depth of approximately 15km. |
| 15.00 NST | HSI Asia Director makes contact with HSI Consultant in Nepal and local counterparts and confirms their safety. |

26 April 2015

| 12.54 NST | Aftershock of 6.7Mw occurs around the same epicentre. |

30 April 2015

| 14.05 NST | HSI response team arrives: Rahul Sehgal – Director, HSI Asia, with veterinarians Dr. Rey del Napoles and Dr. Rina Dev, and Adam Parascandola – Director, Animal Protection and Crisis Response, bringing 900 kg of supplies for responders and Nepalese victims of the earthquake. |
| 15.00 NST | Coordination meeting with Animal Welfare Network Nepal (AWNN) members and other interested parties. |
| 17.30 NST | Field visit to Bungamati, Lalitpur, to assess scale of destruction around Kathmandu. Found animals trapped under rubble, already perished. |

1 May 2015

| AM | Field visit to Lele Village Development Committee (VDC), Lalitpur, 3 wards assessed: Pahade Tole, Sengden village and Tika Bhairav. |
| PM | Field visit to Sankhu, Jarsinghpauwa and Bhaktapur. |
| HSI and JGI-Nepal meet with Bhaktapur District Livestock Service Officer (DLSO). |
| Visit to collapsed poultry farm. |
| Follow-up coordination meeting with AWNN members. |

2 May 2015

<p>| HSI meets with World Animal Protection. |
| Arrival of India One vehicle after a two day journey overland from India, with three more members of the HSI team and supplies of diesel fuel and water. |
| Arrival of Dr. John Skuja, veterinarian from Australia to join HSI team. |
| Arrival of HSI air cargo shipment – 140 crates of human medicine and food. |
| Assessment of Street Dog Care – HSI agrees to help with abandoned dogs, provide veterinary medical care, dog food. |</p>
<table>
<thead>
<tr>
<th>Date</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>3 May 2015</td>
<td>Assessment of number and condition of dogs around temples. HSI and JGI-Nepal conduct assessment of relief camps in and around Kathmandu to check for abandoned pets.</td>
</tr>
<tr>
<td></td>
<td>HSI/AWNN veterinary medical teams return to the affected villages of Lalitpur to treat 322 animals with help from World Vets and the Department of Livestock Services (DLS).</td>
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<tr>
<td></td>
<td>HSI meets with International Fund for Animal Welfare (IFAW), World Veterinary Services (WVS), Kathmandu Animal Treatment (KAT) centre and Dogstar to coordinate on rural response.</td>
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<td></td>
<td>Assessment of KAT - HSI agrees to increase capacity at KAT for abandoned dogs.</td>
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<tr>
<td></td>
<td>HSI and JGI-Nepal meet with Lalitpur DLSO and agree on ongoing support.</td>
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<tr>
<td>4 May 2015</td>
<td>HSI/AWNN veterinary medical teams dispatched to Gotikhel and Debichaur in Lalitpur district – 7 hour round trip via treacherous roads. 16 dogs, 8 cows, 4 cows animals treated.</td>
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<tr>
<td>5 May 2015</td>
<td>Assessment of Community Dog Welfare. HSI veterinary medical team treats 8 livestock in Kopan VDC.</td>
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<tr>
<td></td>
<td>Assessment of Chobar Dog Shelter – HSI agrees to investigate donation of Kuranda dog beds because the dogs are sleeping on cement.</td>
</tr>
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<td></td>
<td>Arrival of Lucy dog at AWNN.</td>
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<tr>
<td>6 May 2015</td>
<td>HSI attends ceremony of “Dog Mother” to remember the animals lost in earthquake and provide food for street dogs.</td>
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<tr>
<td></td>
<td>First delivery of HSI supplies taken by helicopter to village in Dhading.</td>
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<td></td>
<td>HSI and JGI-Nepal meet with Dr Gongal, World Health Organization.</td>
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<td>Departure of Dr. Rina Dev.</td>
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<tr>
<td>7 May 2015</td>
<td>Assessment of Nepal Society for the Prevention of Cruelty to Animals (SPCA) shelter: HSI agrees to provide support on developing protocols for in-take, vaccinations, housing and adoptions.</td>
</tr>
<tr>
<td></td>
<td>Abandoned puppy rescued from Bouddha by HSI.</td>
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<tr>
<td>8 May 2015</td>
<td>Departure of Rahul Sehgal. HSI/AWNN veterinary medical teams dispatched to Bhaktapur district with DLSO. Treated 19 animals.</td>
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<td></td>
<td>HSI and JGI-Nepal meet with IFAW and DLSO.</td>
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</tbody>
</table>
9 May 2015

HSI/AWNN veterinary medical teams dispatched to Bhaktapur district with DLSO. Joined by IFAW in afternoon. Followed up on 5 animals and 2 new cases.

India One gets stuck on cliff during major rainstorm.

10 May 2015

India One departs.

Departure of Dr. Rey del Napoles and Adam Parascandola.

Second delivery of HSI supplies taken by helicopter to village in Dhading.

A team of staff from HSI and World Vets was dispatched to Melamche, Sindhupalchowk (4 day mission). 80 animals treated.

11 May 2015

SPCA team in Nuwakot district - goats, cows and buffaloes with injuries were treated.

HSI/World Vets team continue in Melamche, Sindhupalchowk.

12 May 2015

12.50 NST: A major aftershock occurs with a magnitude of 7.3, 18km southeast of Kodari on the border of Dolakha and Sindhupalchowk districts, at a depth of 18.5km. Minutes later, another 6.3 magnitude earthquake occurs in Ramechhap, east of Kathmandu.

SPCA team return to Nuwakot - many injured cows and buffaloes and a few goat cases. Most of the livestock were found with injuries, some with wounds all over their bodies.

HSI/World Vets team continues in Melamche, Sindhupalchowk.

13 May 2015

SPCA team in Lele, Lalitpur.

HSI/World Vets team returns from Melamche, Sindhupalchowk.

14 May 2015

Third delivery of HSI supplies taken by helicopter to village in Dhading.

15 May 2015

HSI/AWNN veterinary medical teams in in Ghusel, Lalitpur district.

16 May 2015

Drs. Alexis Pridmore and Cherise Schutt (veterinarians from Australia) arrive to join KAT/AWNN.

HSI/AWNN/World Vets team dispatched to Chautara, Sindhupalchowk (4 day mission). 366 animals treated.

17 May 2015

HSI/AWNN team dispatched to Dolakha (7 day mission). 64 animals treated.
<table>
<thead>
<tr>
<th>Date</th>
<th>Details</th>
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<tbody>
<tr>
<td>18 May 2015</td>
<td><strong>SAWM</strong> team dispatched to Kathmandu district.</td>
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<tr>
<td></td>
<td><strong>SPCA</strong> team in Chapagaun, Lalitpur district.</td>
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<td></td>
<td><strong>HSI/AWNN/World Vets</strong> team continue in Chautara, Sindhapalchowk.</td>
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<tr>
<td>19 May 2015</td>
<td><strong>SPCA</strong> team return to Ghusel, Lalitpur district.</td>
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<tr>
<td></td>
<td><strong>SAWM</strong> team visit Sindhapalchowk and Kathmandu districts, 219 cows,</td>
</tr>
<tr>
<td></td>
<td>buffaloes and goats treated.</td>
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<tr>
<td></td>
<td><strong>HSI/AWNN/World Vets</strong> team continue in Chautara, Sindhapalchowk.</td>
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<tr>
<td></td>
<td><strong>HSI/AWNN</strong> team continue in Dolakha.</td>
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<tr>
<td>20 May 2015</td>
<td><strong>Drs. Don Hudson and Cate Sutton</strong> (veterinarians from Australia) and</td>
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<tr>
<td></td>
<td><strong>John Roberts</strong> (veterinarian from USA) arrive to join HSI team.</td>
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<tr>
<td></td>
<td><strong>HSI/AWNN/World Vets</strong> team return from Chautara, Sindhapalchowk.</td>
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<tr>
<td></td>
<td><strong>HSI/AWNN</strong> team continue in Dolakha.</td>
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<tr>
<td>21 May 2015</td>
<td><strong>HSI/AWNN</strong> veterinary medical teams return to Melamche, Sindhapalchowk</td>
</tr>
<tr>
<td></td>
<td>(4 day mission).</td>
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<tr>
<td></td>
<td><strong>Arrival of HSI shipment of 2000 tarps at AWNN.</strong></td>
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<tr>
<td></td>
<td><strong>HSI/AWNN</strong> team continue in Dolakha.</td>
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<tr>
<td>22 May 2015</td>
<td><strong>Departure of Dr. John Skuya.</strong></td>
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<td></td>
<td><strong>Arrival of HSI road cargo of human supplies.</strong></td>
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<tr>
<td></td>
<td><strong>HSI/AWNN</strong> team continue in Dolakha.</td>
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<tr>
<td></td>
<td><strong>HSI/AWNN</strong> veterinary medical teams continue in Melamche, Sindhapalchowk</td>
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<tr>
<td>23 May 2015</td>
<td><strong>HSI/AWNN</strong> veterinary medical teams dispatched to Nuwakot and Rasuwa</td>
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<tr>
<td></td>
<td>districts (2 day mission). 10 animals treated.</td>
</tr>
<tr>
<td></td>
<td><strong>HSI/AWNN</strong> team continue in Dolakha.</td>
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<tr>
<td></td>
<td><strong>HSI/AWNN</strong> veterinary medical teams continue in Melamche, Sindhapalchowk</td>
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<tr>
<td>24 May 2015</td>
<td><strong>HSI/AWNN</strong> team return from Dolakha.</td>
</tr>
<tr>
<td></td>
<td><strong>HSI/AWNN</strong> veterinary medical teams return from Melamche, Sindhapalchowk</td>
</tr>
</tbody>
</table>
Arrival of Dr. Alex Bowes, UK veterinarian to join AWNN team.

Departure of Dr. John Roberts.

HSI and JGI-Nepal visit Bhaktapur to observe shelter construction and treat 3 downed cows.

24 May 2015

HSI/JGI-Nepal veterinary medical teams dispatched to Bhaktapur district to treat 6 downed cows.

25 May 2015

HSI/JGI-Nepal meets with Bhaktapur DLSO to coordinate tarp distribution.

26 May 2015

HSI/AWNN veterinary medical teams dispatched to Bhaktapur district to treat and follow up several downed cows.

HSI/JGI-Nepal meet with Bhaktapur DLSO to supervise tarp distribution and shelter construction.

27 May 2015

HSI/SPCA veterinary medical teams dispatched to Chapagaun and Jorpati, Sundarijal, 5 animals treated.

Coordination meeting with AWNN to coordinate which members would be continuing to work with which districts.

28 May 2015

JGI-Nepal takes supplies to Tipling VDC and Kapurgaon VDC in Dhading district by helicopter (3 day mission).

HSI/SAWM veterinary medical teams dispatched to Lapsiphedhi and Manglebhare in Kathmandu and Kavre districts.

HSI/JGI-Nepal veterinary medical teams dispatched to Bhaktapur for follow up.

29 May 2015

HSI/JGI-Nepal/SPCA veterinary medical teams dispatched to Bhaktapur for follow up. 6 cases treated.

JGI Nepal/SPCA teams dispatched to Nuwakot – 9 cases treated.

JGI-Nepal continues in Dhading.

30 May 2015

HSI veterinary teams treat injured cow in Patan.

HSI/JGI- Nepal return from Dhading.

31 May 2015

HSI/AWNN teams return to Melamche, Sindhapalchowk (3 day mission).

1 June 2015

Dropped 100 tarps with the Kathmandu DLSO.
HSI/AWNN teams continue in Melamche, Sindhapalchowk.
2 June 2015

HSI/AWNN teams return from Melamche, Sindhapalchowk.
3 June 2015

Meeting with Director General, Department of Livestock Services.
Departure of Dr. Don Hudson.
Tarp distribution.
4 June 2015

Departure of Dr. Cate Sutton.
NARRATIVE OVERVIEW OF INCIDENT

COORDINATION

The initial HSI response team arrived five days after the first earthquake and set up base at Animal Welfare Network Nepal (AWNN), the headquarters of Nepal’s national network of animal protection organizations. By virtue of being a collaborative body representing almost all the local animal welfare agencies (www.awnnepal.org), AWNN provides a good platform with which to partner in Nepal. On the same day a coordination meeting was held, attended by Animals Nepal, KAT Centre, Society for Animal Welfare and Management, Society for the Prevention of Cruelty to Animals Nepal, the Jane Goodall Institute Nepal, Bhaktapur Animal Welfare Society, the Department of Livestock Services and various other interested parties and individuals. A broad strategy for animal relief was agreed upon and all groups were asked to submit requests for assistance or supplies to AWNN. A second coordination meeting was held on 1st May and additional ones throughout Phase 1 of the HSI relief operation.

AWNN provided a base for supplies (both human and animal) including veterinary medicine which acted as a ‘bank’ of material for use by its member organizations. Visiting veterinarians were provided with accommodation at the AWNN base or in nearby guesthouses.

Several major international animal health/welfare agencies responded to this earthquake including World Animal Protection, International Fund for Animal Welfare, Worldwide Veterinary Service and World Vets. HSI met with each of these in turn and coordinated with the international non-governmental organizations (iNGOs) to ensure no duplication of effort and to join forces on supplies and distribution.

Coordination meeting on 30th April with AWNN members (All photos taken by Sarah Vallentine).

RURAL RESPONSE

Initial field visits followed the “assess and treat” approach with treatments running parallel to our appraisal of the rural areas in order to gauge the scale of need and prioritize areas for response. It was soon apparent that this was primarily a rural disaster and the major animal welfare need was the treatment of livestock injured during the earthquake or suffering secondary problems related to the effects of the earthquake. In just one farm visited by HSI, 1000 chickens were killed when the barn roof collapsed. Fortunately, intensive farming is not the norm in Nepal, but 80% of rural households own at least one or two cows, buffaloes, or goats. These animals are highly valued by their
owners (one cow can provide an entire family’s livelihood, with a daily income and saleable calf each year) and hence are kept tethered under the house or in barns built in traditional stone with mud mortar, often with large stone boulders on top of a steel roof. This proved catastrophic when the earthquake struck, with collapsed structures crushing thousands of animals to death and injuring thousands more. According to the UN’s Food and Agriculture Organization (FAO) in Nepal, the earthquakes killed more than 180,000 large animals, 38,000 sheep and goats and more than one million poultry. To exacerbate matters, it rained persistently for four days following the earthquake, soaking the ground where many thousands of people and animals were homeless.

Lele was one of the first villages visited by HSI, just outside Kathmandu. Hundreds of animals were crushed beneath collapsed buildings.

Initial assessment identified the major animal health/welfare issues to be:

- Injuries and infected wounds caused by collapsing structures and falling rubble - broken horns, fractured ribs, severe lacerations, patches of devitalised skin from blunt trauma and many fractured legs.

- 85% of the animals treated by HSI veterinary teams were coughing and showed other signs of respiratory disease including pneumonia in cattle and goats, caused by exposure to the elements.

- “Downer cows” many of which with severe pressure sores from being down for several weeks and their own weight now compressing and devitalising the muscles, blood vessels and nerves in their legs and causing the skin over any bony prominences to necrose and rot, attracting flies and maggots.

- Stress-related problems including bloody diarrhoea and secondary infections due to immune suppression.

- Problems related to pregnancy and lactation, with lactating animals decreasing milk production by 50 to 70% despite being otherwise healthy, due to stress.

- Malnutrition, with animals too sick to eat grain but other foodstuffs buried under rubble.

- Increased wildlife conflict, particularly leopard attacks, due to the lack of shelter for livestock.

- Problems related to the dust and debris including endo- and ecto-parasites and digestive disorders.

- Hoof problems due to lack of shelter and persistent rain.

- Risk of emerging diseases in livestock (e.g. Foot and Mouth Disease, Anthrax) with three FMD outbreaks in Dhading and Kathmandu and Rinderpest common among goats.
In the initial 10 days following the first earthquake little information was available from the affected districts outside of Kathmandu valley, with some reports of widespread devastation, reports of aid missions “never returning” and risks to human safety from landslides and civil unrest. This was confirmed as a valid concern by the Director General, Department of Livestock Services. HSI conducted a telephone survey of the District Livestock Service Offices (DLSO)s of all affected districts to determine their immediate needs. Both the Gorkha and Dolakha DLSOs informed us that it was “too risky” to travel there due to frequent aftershocks and many active landslides. Also the villages had been devastated and many had no intact buildings, electricity or food. Meanwhile, initial veterinary response missions by HSI and partners into the districts around Kathmandu revealed there was significant animal welfare need, and hence it was decided to focus on these areas until we had more information from the more remote districts.

DLS had suffered significant infrastructure damage. In some districts, 8 out of 10 animal health service centres were piles of rubble, and all staff had been diverted into human relief work. Initially HSI focussed on supporting the DLSOs of Bhaktapur and Lalitpur districts, who had requested our assistance because they had no vehicles to reach their villages.
We spent several days travelling to villages within a four hour drive’s radius of Kathmandu, providing treatment to animals suffering from a variety of injuries and ailments. Most commonly seen were broken bones or downed cows and buffaloes with spinal injuries. Their normal food supply was interrupted as grain had been buried, and the villagers did not have time to graze them. In addition to treating injuries we provided nutritional support (both intravenous, IV, and through feed), pain medication, and topical and IV antibiotics as well as routine deworming. The villagers reported that they had not yet received any assistance for their animals and, even before the earthquake, their animals had not been vaccinated or dewormed. Villagers gathered around the teams and requested assistance. Many requested medicine so they could continue to care for their animals. Some were a little over-enthusiastic, insisting that their goats were coughing even though they appeared healthy, so the veterinarians gave the animals a multi-vitamin injection to reassured the owners.

Shelter materials were the most urgent priority in the heavy rains that followed the earthquake. HSI imported 4000 tarps from India, with 50% of the production cost borne by IFAW, and distribution carried out by AWNN.
Working with the DLSO in Lalitpur to help villagers construct shelter for livestock.

Only a small amount of human aid had reached these villagers and people were badly in need of tents or tarpaulins to provide cover from the rain and sun. The entire population of one village was trying to shelter under a single tent. With the priority on saving what they could from the rubble of their homes and constructing shelter for their families, some owners had been unable to provide shelter for their animals. However in many cases we found owners sleeping together with their animals.

This village in Sindhapalchowk was almost completely destroyed but the villagers had created temporary sheds for livestock.

As access to more remote districts opened up our first veterinary response team went to Sindhapalchowk, the district most badly affected, and it was during this mission the major aftershock or “second earthquake” occurred on 12 May. The devastation was immense and a decision was made at this point to pool all resources of the various groups to respond to this and other districts which had yet to receive animal relief. Teams were then dispatched to the districts of Dolakha (the epicenter of the second earthquake), eastern Sindhapalchowk, Rasiwa (where villages had been literally wiped off the map by landslides), Khabrepalanchok, Dhading and Nuwakot.
During the second mission to Sindhapalchowk a baby goat was rescued after spending 15 days in the rubble.

Each mission followed the same protocol, with two teams in two SUVs, establishing a base in open ground to camp (staying inside buildings was too risky and in many locations there are no buildings still standing). The teams split during the day to reach as many villages as possible, and reconvened at the base in the evening to camp. Each team was led by an experienced large animal veterinarian, with two other veterinarians/paraveterinarians and two animal handlers. The personnel were assembled from HSI, World Vets, and AWNN member organizations - KAT Centre, HART, SPCAN, SAWM and Animals Nepal.

We always sent two vehicles (two teams) on each mission in case of any problems. At night, the teams camped under a tarpaulin placed between the two vehicles. They had to camp in open ground as most buildings were unsafe.

A total of 64 missions were completed between 30th April and 2nd June. The teams treated a total of 9390 animals (predominantly cows, buffaloes and goats, but also dogs and chickens) owned by 1011 families.
This dog emerged from the rubble seven days after the earthquake – the owners thought it was dead. We treated it for skin abrasions but it was otherwise fine.

The veterinary response teams encountered many challenges, from negotiating active landslides with rocks still falling, treacherous roads where the vehicles became stuck on the edge of a cliff, to sitting through hours of blockades as people protested against uneven aid distribution. On many days there were in excess of five aftershocks measuring above 5.0 Mw.

This landslide was still active in Sindhupalchowk – the team had to wait for a break in the falling rocks before they could pass.
Some villages were completely buried by landslides when the earthquake stuck. Many more, such as this village in Dhading, are now under threat of landslides as the monsoon approaches.

We could only reach Kapurgaon, near the remote Tibetan border, by helicopter. The village lost 7 out of its 87 members when the earthquake triggered massive landslides. The whole village now needs to be relocated before the monsoon.

A large proportion of the treatments, especially castings, required follow up, and the teams returned to these villages as necessary, whilst also trying to reach as many new villages as possible where animals needed urgent attention. In some villages we found the villagers fighting amongst themselves or stopping and surrounding vehicles bringing aid
material. There were some heated situations but generally our teams were very well received. Eighty percent (80%) of rural households rely heavily on livestock and communities were extremely thankful for our assistance. For many people who had lost family members and/or property to the earthquake – their cow, buffalo or goat was all they had left.

This woman walked for over an hour to find our team and bring them to check on her cow, which had not been eating since the earthquake.

Once word had spread that our teams were in the area, people walked for hours to come and ask advice or to get medicine for their animals. In Dolakha, one woman walked over an hour to find the team so she could get a simple worming tablet for her cow. In another village an elderly man led the teams to his hut where his goat was coughing with a high temperature. The team gave anti-inflammatory agents and antibiotics and in return the man gave the team all the donated water he had been given.
In some villages our teams conducted no treatments because they found complete devastation – all the animals had been buried alive and perished. The teams worked with the local government to disinfect areas (using Virkon and Phenyl sprayers) where animal and human carcasses were buried.

In gratitude, people offered the rescue teams food and shelter from what little they had left. In Talamarang village in Sindhupalchowk, the entire community shifted elsewhere and insisted the team sleep in their communal shelter. In another village, an 80 year old woman invited us into her broken house to have tea. Her three grandchildren were inside – they had lost their parents during the earthquake so she is now looking after them. Even though we were there to help her, she wanted to help us.

This family were boiling water when the earthquake hit, and the fire tipped over and caught the shed alight. Their cow was severely burned in the fire. We showed the owner how to clean the wound and give antibiotics. “These people have lost everything but still want to give us something. All the time I feel like crying but I am learning to channel that feeling into empowering these people to recover. I feel like I have mastered the skill of empathy.” Cherise Schutt, on relief mission to Dolakha.
Due to their robustness cows and buffaloes survived for many weeks after the earthquake without veterinary care – this kept the window of possible rescue and successful treatments open. However as time went by, our teams found more cases, especially downed cows, where there was no hope of recovery. Euthanasia of cows is illegal in Nepal, which was emotionally difficult for our teams when in several cases they had to walk away from an animal they knew would die a painful death. As time passed, the teams found more animals with rotting legs and maggot-infested wounds, and many cases where local people had attempted to bandage the fractures with dirty material, but the bones had already fused together in the wrong position. Some owners chose to sell their animals (other than cows) for meat rather than continue to watch them suffer.

a. We had to leave because a storm was approaching and this cow’s shed looked unstable. Sure enough, it collapsed overnight and we returned the next day to find her surrounded by a pile of rubble.

b. This cow’s shed in Bhaktapur had collapsed on top of her in the earthquake, and she had calved since then. She was lying in her own faeces, fighting to get up despite a large wound above her hock and pressure sores full of maggots. 13 people came from the village to help us try and lift her – everyone wanted to help. The owner listened attentively to our advice and agreed to keep her clean, and we provided a tarp for her to lie on.

During every treatment, the teams aimed to educate the owners on long-term care, e.g. on how to keep the shed ventilated and clean, or how to give antibiotics, or even how to do physiotherapy. Owners were prepared to invest
the time and effort into the nursing care of individual animals to a level that would never be seen in typical “western” farming practices. On seeing the teams take such care for their animals, owners were given fresh hope and a boost of motivation to look after them. In Bhaktapur, the teams treated many downer cows. For one cow that had fractured its tibia, they made a splint using steel rods found in the rubble and bamboo to make a frame. The team returned to check on cases every day, and would often find the owners making little improvements each time, e.g. covering the animal with a fly sheet, or bringing it fresh water.

This cow in Chapalgaon had a severe fracture – the bone was exposed with severe deep infection. The owner had been going without food for 2 weeks because he was so worried about the cow. In more developed country farming systems, we would not usually even attempt to treat this kind of injury, but this cow was still standing on its twisted leg and still determined to live. She meant so much to the family. The team completed a partial amputation of her limb, removed the necrotic tissue, and realigned the bone, and placed Dynocast (fibre glass) and a splint. With antibiotics and attentive care, her prognosis is good.

One team stayed with this family in the village of Thulopacker. The father worked multiple jobs to try and support family and children’s education. Their cow was pregnant and they were worried she might abort due to the stress of the earthquake. “They had already rebuilt her shelter before the monsoon – not waiting around for help, just getting on with things. I found it amazing how proactive they were being in the wake of such tragedy. They were so welcoming and grateful to us. They told us we were angels sent from heaven. The odd thing is, I thought the same about them, and very little about me”.
The table below summarizes the immediate outcomes of responses by all animal welfare NGOs, including HSI.

<table>
<thead>
<tr>
<th>District</th>
<th>Number of missions</th>
<th>Organization(s)</th>
<th>Villages reached</th>
<th>Number of families helped</th>
<th>Total number of animals treated</th>
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<td>Lamjung</td>
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<td>HART</td>
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<td>HART</td>
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<td>Dhunche, Laharopauwa</td>
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<td>Nuwakot</td>
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<td>SPCAN HART Animal Nepal</td>
<td>Pipalta, Tofan, Tupche, Batrawati, Jiling, Rani Pauwa, Kaule, Okhar Pauwa, Devighat, Falate, Bidur, Srikhali, Khadkabhanijang, Taruka, Tarukaghat Kumaltar, Majhgau, Khadga Bhayang</td>
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<td>Lalitpur*</td>
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<td>HSI JGI Nepal World Vets SPCAN</td>
<td>Bungamati, Lele, Pahade Tole, Sengden, Tika Bhairar, Lamatar, Lakuri Vanjyang Harisiddhi, Babiya Gaun, Gotikhel, Debichaur, Chobar, Jorpati, Sundarijal, Ghusel, Chapagaun, Juvarwarasi, Sunakothei, Dolahiti, Godawari, Jhangalkot</td>
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<td>World Vets SAWM Melamchi Municipality, Sangle Bhangyang, Talamarang, Buspark, Phatkeswar Chautara, Jalbire, Phulping Danda and Pangretar</td>
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<td>Kabrepanchok</td>
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<td>64</td>
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</table>

| Total          | 64                 |                                | 1011                                | 9390                       |
URBAN RESPONSE

Initial assessment within urban Kathmandu revealed relatively little animal welfare concerns, with the major issues limited to:

- Injury caused by collapsed buildings mainly to cows and poultry, and some dogs.
- Abandonment of pet dogs as an estimated 400,000 people had fled Kathmandu.
- Some damage to animal shelters and overstretched resources of local NGOs.
- Street dogs no longer receiving food from people who usually fed them.

This dog’s foot was caught under a stone when the building collapsed. The team treated the laceration which was becoming infected.

HSI visited each of the shelters in Kathmandu to assess need and identify areas for assistance, as summarized below.

**Kathmandu Animal Treatment Centre:** Some increase in uptake responding to calls for injured or dogs abandoned by owners but in most cases the local community was asked to provide care until their return. HSI authorized and paid for ten kennels to be constructed, which can be shifted if necessary, as KAT is possibly facing eviction from its current premises.

**Animal Nepal:** Dog shelter ("Chobar") with 15 kennels. No earthquake damage but would benefit from improvements in kennelling (e.g. bedding, recovery kennels, other). A relatively low number of deaths and injuries were found among stray dogs – Animal Nepal treated twenty injury cases but there was an increase in intake due to abandonment. Treated 500 working equines in the brick kilns of Lalitpur with support from the Donkey Sanctuary.

**Society for Prevention of Cruelty to Animals Nepal:** Kennels destroyed by earthquake. Dogs are being group-housed. Many animals including cows are dumped on site or picked up by the ambulance. Would benefit from new kennels and assistance with protocols.

**Community Dog Welfare:** Dogs are healthy and well cared for, as part of a comprehensive dog population management program integrated into the community of the village of Kopan, just outside Kathmandu and run by an Australian couple, Kate and Doug Clendon.

**Street Dog Care:** Shelter for needy dogs located at the largest Buddhist temple, Boudhanath. “No kill” shelter with several disabled dogs, but well cared for with a good adoption rate (overseas). Would benefit from a regular veterinarian and improvement in the quarantine facility.
**HSI Asia Director with abandoned puppy**

**Bhaktapur Animal Welfare Society:** Attempted to visit the clinic but the team was diverted to a chicken farm. HSI has offered a grant of $2000 for the construction of a prototype animal carcass incinerator.

HSI distributed dog food to the local NGOs and others in the community who were feeding street dogs. The team conducted an assessment of the relief camps in and around Kathmandu but found the pets to be generally well cared for and few reports of abandonment, although we assisted in rehoming some puppies and injured dogs. The team also attended a ceremony organised by Gyani Deula, a homeless lady known as the “Dog Mother” of Kathmandu, to remember the animals that lost their lives during the earthquake. Sadly, the Dog Mother passed away at the Ganesh Temple on 7 June.

**SUPPLIES**

HSI arranged for 3000kg of human and animal supplies (veterinary medical) to be sent from India via air. After several days’ delay by customs the supplies were cleared and received at AWNN. All AWNN members received a list of supplies and were able to pick up what they needed to supplement their relief efforts. Additionally 4000 tarpaulins were transported by truck from India to Nepal. The shipment was commandeered by the Nepal government but an agreement was made with Bhaktapur DLSO to enable us to distribute the tarpaulins among affected districts. A truck full of donated dog food was also shipped from India and distributed among the AWNN members. Visiting veterinarians brought over 400kg of veterinary medicine. All materials and medicine that remained unused following completion of Phase 1 was distributed in packages to affected DLSOs.

Pedigree generously donated dog food and IndiGo Airlines transported many of the supplies at their own expense.

**NEXT STEPS**

**LIVESTOCK RECOVERY**

The earthquake struck at the worst possible time for Nepal's farmers, who were just about to plant their staple rice crops, which must be in the ground before the monsoon (mid-June). According to the FAO, half of all farming households in the six most affected districts lost nearly all their stored crops and seeds of rice, maize, wheat and millet beneath collapsed buildings. Those that were able to save or replenish seed stock were told not to plant rice and other water-hungry crops due to the risk of triggering landslides in the highly unstable post-earthquake landscape. Hence, livestock remains the only lifeline for many rural communities.
HSI remains committed to helping the villagers and their animals recover and our long-term post-earthquake recovery plan will include providing continued support to DLSOs so they can be brought back to a functional level and re-assume their responsibility to protect animal health and welfare.

HSI, through AWNN, is distributing packages of supplies to eight DLSOs (veterinary medications, animal food, supplements, tarps, others) and working with three DLSOs to create comprehensive action plans for recovery. Our support is based around the “Five Freedoms” framework for animal welfare, and includes ensuring the surviving animals are well fed with access to grazing and nutritional supplements, providing shelter from the elements, reducing conflict with wildlife, and continuing to address disease and injury whilst enabling people to take care of their animals' health. We are working closely with Bhaktapur and Lalitpur DLSOs and local community volunteers to create communal earthquake-resistant holding pens which we can replicate in other districts.

In Ghusel village, Lalitpur, few buildings remained standing after the earthquake. HSI has provided tarps to every household and continues to support the local DLSO with medicine and training.

AWNN is also planning to hold workshops and training exercises for the Department of Livestock Services and Nepal Veterinary Council in order to increase large animal veterinary expertise and create basic livestock husbandry guidelines.

**ANIMAL WELFARE INFRASTRUCTURE**

Prior to the earthquake, HSI had identified a number of potential areas to support animal welfare development in Nepal, including legislation, dog population management, mitigating human-wildlife conflict, and phasing out wildlife trade and cruel farming practices. Post-earthquake, whilst much of our focus will be on recovery, new windows of opportunity for animal welfare development have opened up particularly relating to the level of collaboration between stakeholders. A long-term post-earthquake strategy will be developed for organizing animal welfare infrastructure in the Kathmandu valley.

Several urgent needs have been identified related to development and cohesion of the local animal welfare organizations, including:

- Assisting KAT Centre to find a donor(s) to buy land
- Organizing a shelter workshop to address issues encountered by the shelters in Kathmandu (e.g. shelter management fundraising, DPM, compassion fatigue, community engagement).

- Donations of Kuranda beds and other materials.

**EXPENDITURE**

Phase I of HSI's response to the Nepal earthquake involved a total expenditure of 1,357,812 NPR (approximately US$13,450).

*Please note this illustrates only the costs borne by AWNN / HSI Nepal - it does not include the costs incurred by HSI India.*
LESSONS LEARNED

PREPAREDNESS

Although earthquakes are relatively common in Nepal and surrounding countries, the severity of this earthquake, and the devastation it caused was shocking. Fortunately, the HSI India team (under RS) was nearby, as were two experienced responders, one from the US (AP) and the other from the Philippines (RdN). This team was on the ground in Nepal within 5 days of the occurrence of the first earthquake, an unusually fast response compared with the 1-2 weeks that are the norm for most disasters. Other international NGOs poured into Nepal, unhindered by the usual political conflicts that accompany other major disasters.

The fact that AWNN has nurtured long-standing relationships with many small local animal welfare organizations, serves as an umbrella organization for its members, and is run by a Nepalese (MG) with the assistance of an HSI consultant (SV) was most fortunate. This arrangement contributed a great deal to the relative ease with which local supplies could be procured, bureaucratic issues could be addressed, and aid could be delivered to people and animals in need. AWNN coordinated response efforts among a number of iNGOs; iNGO teams were directed to specific affected areas, resulting in little (if any) duplication of effort and efficient delivery of assistance.

It was difficult to assess the scope of the disaster, particularly its impact on animals and in rural areas, because disaster teams were unable to access some of the more remote but severely affected areas. However, many humanitarian organizations, including USAID and others, do provide up-to-date information on the scope of disasters and their impact on human populations, and it should be possible to use these resources to establish better ways of assessing the impact of disasters on animals, especially livestock. Helicopters were used to bring supplies to some of the more remote areas but this was done relatively late in the response period.

Had the team been better able to assess the immediate needs of animal populations (and those of remote agricultural communities), it would have been possible to develop objectives for the response efforts and to use those to define and justify an exit point.