

## 86 centimetres

a documentary about Tashi and his fight against the threat of a glacial lake outburst flooding (GLOF) in Bhutan

**Documentary: 86 centimetres**

Bhutan/the Netherlands, 2012, 39 minutes

Film Directors: Peter Jan van der Burgh  
Tshering Gyeltshen  
Executive Producer: Henk de Jong  
Director Photography: Kinzang Namgay  
Camera: ChhoeKu Dorji  
Jamyang Thinley  
Kinley Penjor



*Of the natural hazards to which Bhutan is prone, none is more significant than that of climate change's effects on glaciers, in particular glacial lake outburst floods. When these floods occur, lives are lost, houses and other infrastructure are washed away, and agriculture and pastureland are damaged.*

*GEF, 2009*

*Bhutan is one of the hot spots of environmental preservation on earth; 70% of its surface is covered with forest and the country hardly contributes to CO2 emissions. Nevertheless: Bhutan is facing the indisputable effects of global warming: melting ice is weakening the walls of the Himalayan glacial lakes. An army of 370 farmers, students and workers went up in the Himalayan Mountains, so far the domicile of spirits, ghosts and animals, to turn faith and prevent the lakes from bursting.*

*86 centimetres shows men pitted against the might of nature and potential natural disaster lurking imminently in the rugged mountains of a tiny kingdom the rest of the world has largely heard of. Main character is Tashi, a young farmer from Paro who decided to join the excavation workforce to lower the water level at the glacial lakes and save his family from a disaster.*

## *Glacial lake outburst flooding (GLOF) - Bhutan*

Lake Thorthormi is situated up in the Himalayan Mountains close to the Chinese border. The walls of the lake are about to crack down. Geologists state that the natural dam walls between lake Thorthormi and lake Raphstreng are only 32.5 m thick at the crest and are getting thinner every year. The collapse of the walls separating both lakes will result in lake Thorthormi, flowing into lake Raphstreng. 53 million cubic metres of water will then flood the densely populated valleys of Central Bhutan. In 1994 a glacial lake outburst flooding of 18m cubic metres of water killed 22 people, destroyed harvests and washed away the Wangduephodrang Bridge. The famous Punakha Dzong remained undamaged by miracle. The only way preventing a tragedy is dispatching an expedition of 370 men to the Thorthomi glacial lake to build a drainage installation and lower the water level of the lake by six meters. July 2009 over 300 workers walked 10 days with heavy equipment on yaks and horses through unpaved trails. At an altitude of 4.300 meters they face nature as it comes, hail storms, blazing ice-cold wind and temperatures below zero. Draining the water is done manually. Sleeping, eating, working happens under extreme conditions. The expedition ended October 2009 after a three-months period of hard work, resulting in lowering the water by 80 centimeters, instead of the scheduled 1,5 meters. The expedition started again from July – October 2010 and will finish its work in 2012. Bhutan will only be save after five meters reduction of the water level at Thorthormi.

## *Tashi*

Main character in the documentary is Tashi Dorji, a young farmer, living with his wife, parents and sisters on a small piece of farmland in the Paro Valley. The threat of a possible GLOF shown on the television alerted Tashi. He decided to join the group of workers, leaving behind his pregnant wife and his family to work at the lake to prevent Bhutan and his family from a tragedy. However, the travel, work and living in the mountains make it difficult to predict any outcome, failure or success. The life, work, feelings of hope and doubt of Tashi are captured in a breathtaking environment covered by a glance of fear for an outbreak and the disaster that would follow. Tashi shares his thoughts and feelings in a natural, sympathetic manner.

## *The production team*

A Bhutanese film team of TGMI, led by Kinzang Namgay, followed Tashi and his mates on their journey to lake Thorthormi, The team stayed with Tashi for the entire period of three months (July – October 2009) and collected 73 hours of footage. Directors Peter Jan van der Burgh and Thsering Gyeltshen selected the first material with the TGMI team in Bhutan in 2009. Further editing in Bhutan and the Netherlands took another two years. The film is completed early 2012. Bhutan+partners produced and financed 86 centimetres.



*Director's Statement*

We tell Tashi's story because it is the story of humanity or should be!

Tashi's story in a way symbolizes the story of Bhutan – small, frail, uncertain and naïve – particularly in dealing with the impact and consequences of global climate change on its fragile mountains and yet fortified and emboldened by a deep sense of human goodness and conviction.

Even as the citizens of the world race against time to earn more and spend more we hope some will share a moment with Tashi.

The story told by Tashi, is simple, introvert, and impressive; as nature and people can be.

We hope that Tashi's efforts, faith and dreams may touch others.



**Filmography – Documentaries****Bhutan+Partners**

- 2002 The Other Final, the prizewinning film of the alternative football world cup final between Bhutan and Montserrat, made by Johan Kramer. Line production.
- 2004 The Female Archer of Bhutan, documentary about archery in Bhutan Arte, Germany. Line production
- 2006 Rocking the Himalayan Kingdom – Bløf in Bhutan. LLink Television. Executive production
- 2008 3op Reis, Floortje Dessing in Bhutan, Llink television. Line production
- 2010 86 centimetres, documentary on the threats of climate change in Bhutan. Executive production.
- 2010 Nazhoen Chharo, a feature film on urban youth gangs in the capital of Bhutan made by Dorji Wangchuck. Production for the European market.

**Tshering Gyeltshen - TGMI**

## Documentaries

- 2002 A Walk for Health, a documentary on the 516-kilometer cross-country walk by the former Health Minister, Lyonpo Sangay Ngedup. Script and narration.
- 2005 For Whom the Bell Tolls a 25-minute documentary on primary schools in rural Bhutan. Script, narration, production, executive director
- 2006 Democracy & Elections – the Bhutanese way elections and democracy. Script, narration, production, executive director
- 2007 25 Years of Service to Children in Bhutan, Save the Children's 25 years in Bhutan. Script, narration, production, executive director

## Feature Films

- 2001 Chepai Bu (The Beloved Son), Writer and Lead Actor, Pekhang Audio Visuals
- 2003; Hingtam, Writer, Lead Actor, Director, Pekhang Audio Visuals
- 2004; Wai Chharo! (Hey Friends!), Lead Actor and Writer, White Tara Productions
- 2005 The Perfect Girl, Lead Actor, Writer, Producer, Director, TGMI
- 2007 Nazhoen Chharo, Lead Actor, Chenzig Films
- 2008; Drowa Zangmo, , Supporting Actor

**Peterjan van der Burgh**

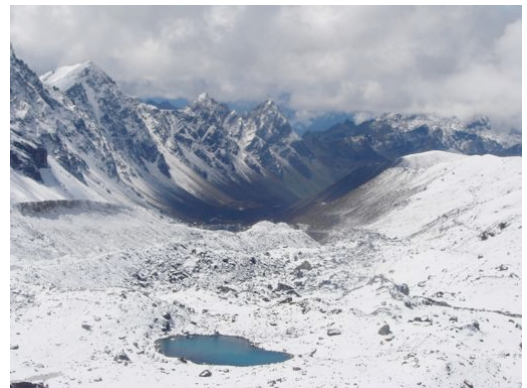
- 1990 Wasserschade, feature film, Germany
- 1992 Der Einbrecher, feature film, Germany
- 1994 - 1996 Music Video's, Bløf, Ilse de Lange
- 1999 De Afdaling, short feature
- 2001 World Exhibition Hannover 3D Film, Germany
- 2003 Fighting Fish, feature film, Netherlands
- 2004 Child Soldiers in Uganda, documentary, Netherlands
- 2004 Zero G, documentary, Netherlands
- 2006 Spoorweg, short feature, Netherlands
- 2008 American Dreams, short feature, Netherlands
- 2009 Rutger Hauer - Master Class, Netherlands

As Director of Photography:

Drama: Feature film: Unter den Palmen ,1999 (co,Dop)  
Feature film: Morlang,2000 (co,Dop)  
Feature film: Fighting Fish, 2003  
T.V. series: Luifel & luifel, 13 parts police series; S16  
2002 (budget: 2 million euro)  
T.V. series: Juliana,Queen of the Netherlands  
4 parts; HDCam 2006  
(budget : 1.8 million euro )  
T.V. series: Spoorloos Verdwenen,  
10 parts police series  
XD cam 2007  
(budget : 2.2 million euro)  
T.V. series: Juliana II, Queen of the Netherlands  
4 parts; HDcam 2008  
T.V. series: Sorry, minister (comedy)  
10 parts 2008/2009

Documentaries: Geörgy Sebok, Arte; ( France ) 1998  
Janos Stärker, Arte; ( France ) 2000  
Bløf Umoja DVD documentaire Kenia, 2006  
Nigeria,Cuba,Australië,India etc.2004/2005  
Zero-G, Arte (France 2004)  
Bløf in Bhutan; bhutan+partners, Llink 2006 (editing)  
86 centimetres, bhutan+partners, 2010,

Guest Teaching at the Filmwerkstatt Münster, Kunst Hochschule in Cologne and Filmhochschule in Dortmund and Ludwigsburg.  
Teaching at the Willem de Kooning Academie in Rotterdam since 2003  
Coach/Producer for the Ruger Hauer Master Class January 2007 and June 2009



bhutan+partners  
Erica Sluyters  
T + 31 (0)313 41 20 98  
E postmaster@bhutanandpartners.org  
W www.bhutanandpartners.org

***The threat from Lake Thorthormi, Bhutan*****Source: Kuensel Newspaper, January 27, 2009**

Of the 14 risky glacial lakes in Lunana, Lake Thorthormi is on the brink of breaching its walls. Geology department say they are working on it. Lake Thorthormi is the largest glacial lakes in Bhutan, with a size of 3.42 sq. km, and thrice the dimension of Lake Lugge that burst in 1994. Geologists say the massive ice surrounding Lake Thorthormi is melting fast at 30-35 metres a year, and is filling up the lake quick. The natural dam holding the lake can stand only so much volume of water, say geologist. Lake Thorthormi feeds Punakha Pho Chhu and if it bursts, geologist say, it could inflict enormous damage downstream. Lake Lugge when it ruptured flooded villages on the way including Punakha town killing 21 people and uncountable livestock. Lake Thorthormi is thrice the size of Lake Lugge. A glacial expert, Dr Yeshe Dorji, of the geology department, said that measures were being planned for this year and beyond to reduce the water level of Lake Thorthormi and establish early warning system for the communities downstream. UNDP and European commission funded the mitigation works at US\$ 7.8 million. "Excavation works on Lake Thorthormi will begin by June this year but before that necessary equipments and rations would be transported to the glacial site," he said. But it was going to be an uphill battle. Pumps, to siphon off water from the lake, did not work properly and it was too heavy to transport machineries. It was also risky to utilize them as it could breach the glacial lake walls. All works had to be done manually with the help of tools such as spade, pickaxe and crowbars among others. Mitigation works had numerous problems such as sizes of boulders over 2m that could not be broken by sledgehammer or moved. There were also continuous seepages from the lakes, which compelled people to work in freezing cold water. Frequent rains accompanied by cold breeze aggravated the problem. "The work output is reduced drastically as the labourers have to work with knee-deep water," said Dr Yeshe Dorji. "The yearly work was also limited from June till September as during the other months the passes to Lunana got blocked." Tools and rations had to be transported to the glacial site took almost 12 days uphill on foot. "Other countries unlike us could save time using huge choppers but for us is expensive to hire and there is risk due to climate conditions," said Karma Toeb of the geology department. Choppers suitable for such terrain cost US\$ 200,000 for a trip. Geology officials present during the recent workshop on GLOF Risk Mitigation said that mitigation measures were challenging and proper assessment on the barrier characteristics had to be carried out in order to avoid mishaps. "We don't want to trigger a GLOF by ourselves," said a project official. Moreover, engineering designs have to be modified to suit the terrain while the excavation is in progress and the hazard zonation carried out should be implemented so that the development activities are not exposed to disaster, they said. Meanwhile, scientists say the temperature in the Himalayan region was rising twice as fast as the global average and that the glaciers were in rapid retreat. "Himalayan glaciers are retreating at rates ranging from 10 to 60 m per year with many small glaciers already disappeared," said the vice president of Disaster Management Centre of Nepal, Bishal N Upreti, The Department of Disaster Management under Home Ministry has also carried out few 'non structural' measures like spreading awareness on disasters, setting up response mechanisms and establishing relief funds for disaster mitigation. A community study carried out along the Pochu Basin stated that Samdingkha town under Toewang gewog would be the most effected in case of a glacial flood. The town was badly hit during the 1994 Lake Lugge outburst. It has 15 households of about 300 people.

