

A Study of Climate Change Crisis and the Hardships of Khembalung Survival in Kim Stanley Robinson's Forty Signs of Rain and Fifty Degrees Below

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ABSTRACT

The island nation of Khembalung is a victim of global sea level rise in Kim Stanley Robinson's Forty Signs of Rain and Fifty Degrees Below. Deeply rooted in the Tibetan Buddhist culture and eco-centric lifestyle, it is under the threat of submersion. This study explores the historical roots of Tibetan monks, Tibetan Buddhist traditions, lifestyle of Tibetan monks, unique Himalayan architectural buildings and the constructed landscape of Khembalung. The role of dykes in protecting the island nation is tremendous and it is in the state of destruction. The global sea level rise increases the maximum water level limit on the dyke. In order to protect the island nation from flooding, the khembal is seeks the support and guidance of America. This study mainly focuses on a ten member's crew to understand the life threatening survival in Khembalung.

Keywords: Tibetan, monks, dykes, flooding, survival, sea level rise..

INTRODUCTION

Khembalung is an island nation in the Bay of Bengal. It is a sacred place of refuge for the Buddhist monks during invasion times. Robinson's Forty Signs of Rain and Fifty Degrees Below realistically present the climate change disasters encountered by the Tibetan monks in Khembalung. To save their nation from the threats of global sea level rise, the Tibetan monks decides to seek the assistance of America. A group of Tibetan monks from the embassy of Khembalung in their unique Tibetan costumes approaches the National Science Foundation building of the United States government. In order to have an official conversation with the Tibetan monks, Anna Quibler, Director of the Bioinformatics division at the National Science Foundation invites the khembalis for a lunch date in Pizzeria Uno. She begins the

conversation by asking about the nativity and the diet variety of the khembalis. Drepung, the young monk from the Tibetan group answers to all the queries of Anna. Due to the scarcity of vegetables in Tibet, the Tibetan Buddhists opt for a non-herbivorous diet. When enquired by Anna about the historical roots of the Khembalis, Drepung briefly narrates of the Tibetan Buddhists life. He introduces Gyatso Sonam Rudra Cakrin, the old monk in the group as the rimpoché and their ambassador to America. Rudra Cakrin is the native of Tibet and the other monks are born in either India or Khembalung.

The history of the Tibetan monks is traced back to the time when China invaded Tibet in 1950. Dalai Lama, the head of Tibetan Buddhism escapes to India after the Tibetan invasion. Along with Dalai Lama, many Tibetans too have accompanied him. India treats the Tibetan refugees cordially. Under the leadership of Dalai Lama, the Tibetan government-in-exile is formed in Mussoorie on 29th April 1959. The border dispute between India and China in 1960 pushes the Indian government to shift the Tibetan community to Dharamshala, the Indian state of

Himachal Pradesh in May 1960. As years passed, the disagreements within the exiled Tibetan community gets deeper and many Tibetans are migrated to other places in India. A division of Tibetan monks belonging to the Yellow Hat School accepts the offer of Khembalung by the Indian government and are migrated from the Dalai Lama's government in Dharamsala to Khembalung.

Khembalung serves as a protectorate of India. After hearing the migration story of the Tibetan monks, Anna asks Drepung when the island nation is named as Khembalung. As per Drepung's prediction, it is named after the migration of the khembalis. He further explains how a Khembalung town is constructed by the Tibetan monks. A town with basic facilities like schools, hospital and houses is built under the supervision of the Dutch advisors. Khembalung nation is completely surrounded by dykes. It is the Dutch advisors who suggest the Khembalis to establish their embassy in America to exchange views on issues related to global warming disasters. Drepung adds that the Pew Center on Global Climate Change introduces the khembalis to the Dutch, Fiji and Tuvalu nations. Like Khembalung, Tuvalu too is a victim of global sea level rise. After hearing the historical background of the Tibetan monks, Anna arranges a meeting of the khembalis with her husband Charlie Quibler who works as an environmental policy advisor for Senator Phil Chase.

In order to inspect the impacts of climate change disasters in the island nation of Khembalis, a team of ten members flies to Khembalung. Accompanied by the Tibetan monks, the Quiblers and Frank make their visit to Khembalung. After a long journey of two days, the team arrives at Calcutta airport. As per the directions of khembali legation members in Calcutta airport, they are carried to Khembalung in a sixteen-seater flight. On seeing the aerial view of the combined delta of the Ganges and the Brahmaputra; Charlie exclaims thus, "I'll never call Washington D.C. a swamp again! Green-brown islands in a brown-green sea" (FDB 145). Many islands are half-submerged in the delta. Traces of drowned coastlines are visible in the depthless water of the delta. In this context Anny Cazenave and Goneri Le Cozannet says, "the unexpected acceleration of sea level rise in response to continuing global warming will exacerbate the vulnerability of many low-lying, densely populated coastal regions of the world, and very likely will become a major threat in the near future for a significant fraction of human beings" (15). A shoreline surrounded by a dike catches the attention of the crew. Anna Quibler notices that the coastline inside the dike is low-lying than the ocean around it.

At Khembalung airport, a large group of people in their distinctive Tibetan clothing welcomes the crew by blowing long brass horns. As an act of reverence, the monks bowed down. Anna notices the presence of two women from the Khembalung Institute of Higher Learning with whom she already corresponds through email. The crew is taken to the government house in a van. On the way to the government house, the sight of dehydrated palm trees catches their attention. The Khembalis are betrayed by three consecutive monsoons. One of the guides informs them about an extreme drought which has ravaged the nation of Khembalung. Anna Quibler is already aware of this intense South Asian drought through the Asian Brown Cloud study. The study researches about the accumulation of particulates in the South Asian air and its link to the current drought. This accumulation of particles is due to the industrialization and deforestation projects.

The guide explains about the history of the constructed landscape of Khembalung. As per the guidelines of the Dutch engineers, the land is elevated by dumping deposits from the nearby islands. The trees in the land too are not native to the Khembalung nation. The protective Khembalung dike looks majestic in the glimpses of harsh sunlight. Flower beds with Tibetan colours of maroon and saffron are planted in the inner wall of the dike. The intense Khembalung drought erases these colourful flower beds. After hearing the landscape history of Khembalung, the guides direct them to the Government House. The architectural style of the government building is Himalayan and its rustic pillars are crowded with demon masks. Finally, they are directed to the Khembalung Institute of Higher Learning where the scientists of the institute talked about their collaborations with the National Science Foundation and their construction of new labs.

The crew visits the dike which has been constructed to prevent khembalung from flooding. The inner wall of the dike is a tilted lawn. Large stone steps are constructed to reach the top of the dike. Frank, Anna and Nick have reached the top of the dike, followed by the footsteps of the guides. Anna staggers by the intense blow of the shore wind while standing on the dike top. The view of lengthy white clouds in the sea is a feast for the spectators. A hand stretched Buddha statue is on the top of the dike. The team notices that the land inside the dike is lower than the sea level and the polders inside the dike are lower than the North Sea. Frank says that some places in Holland are similar to that of the low lying areas in Khembalung. The crew is allowed by the guides to walk along the dike. On seeing the moving clouds from the southwest, the guides predict the upcoming monsoon.

The dike is too old to prevent the flooding of Khembalung. A bar mesh at the waterline is rusted. The boulders inside the rusted bar mesh have collapsed and fallen in some places. Lack of manpower and machinery is a hindrance for the dike maintenance. Structural damages of the dike are too expensive for the Khembalis to rectify. After their dike visit, the monsoon arrives in its full speed. Rain cools down the nation of Khembalung, followed by a prolonged drought. The crew witnesses an entirely nourished island in the second day morning. The author describes the scene thus, "they found the island transformed; everything was drenched, with standing water everywhere" (FDB 154). During the second day, the team visits a school, Khembalung Institute of Higher Learning and a zoo. The animals and birds in the zoo are native Sundarbans species. The Sundarbans tigers in the

zoo are under the threat of flooding. Many tigers have been washed away by the flood to sea. By the efforts of Khembali patrol boats, the tigers are rescued. Vineeth Radhakrishnan describes the act of rescue by the khembalis thus, "In doing so they also reveal their ecomasculinity – being adventurous to save the lives of other species" (k694). The tigers in the zoo pond are described thus, "Their abrupt foursquare dives and subsequent splayed strokes turned feline grace unexpectedly aquatic, and underwater their fur streamed like seaweed" (FDB 155). Monsoon rain sounds louder when it hits hard on the roof of the government building.

The second night in Khembalung is a disaster for the visitors. An hour before dawn, Drepung informs them of an emergent situation to evacuate the island. He explains the arrival of monsoon thus, "This is a good thing, but unfortunately it has come at a time of especially high tides, and together with the storm surge, and the low air pressure, sea level is extremely high" (FDB 156). The sea level on the dike is higher than the maximum limit. Due to global warming, the Himalayan glaciers are melting faster. In addition to the intense rainfall, many ice dams which held big glacial lakes in the path of Brahmaputra too gets broken and sweeps away by the heavy water current. Like Khembalung, Bangladesh too is flooded by the overflowing of Brahmaputra. Drepung warns the crew of the dike impermanence thus, "If the dike fails, the result can be severe. So we must leave the island" (FDB 157). Nobuo Mimura rightly opines,

Sea-level rise is one of the most significant effects of climate change. High projected rates of future sea-level rise have captured the attention of the world. Particularly, countries which are located in low-lying areas as well as small islands are concerned that their land areas would be decreased due to inundation and coastal erosion and, at worst, a large proportion of their population may be forced to migrate to other countries. (281)

As the nation of Khembalung is prone to flooding, ferries are always ready for such emergency purpose. Wade, Charlie's friend in Antarctica conveys him about the reason behind the sudden sea level rise. A large piece of ice is detached from the West Antarctic Ice Sheet. This detached ice sheet displaces water and the sea level increases drastically. Usually at times of emergency, the guests of Khembalung are transferred to safer zones in helicopter. As the helicopter is out to Calcutta, they are in a situation to adopt the ferries. Twelve thousand people are in the island to evacuate. A separate boat is allotted for the zoo animals. People with circus experience are assigned to shift the zoo animals to the boat.

The monsoon rain gets intense as time passes. Drepung takes the crew in a van to the dock. Charlie enquires Wade about the size of the detached iceberg and how much water it has displaced. As per Wade's study, the iceberg is too big to raise sea level globally by one or two centimetres. The satellite images of the Bay of Bengal and the lower delta of the Ganges and Brahmaputra in Drepung's cell phone displays the land and water regions of the island in different colours. The right and left side of the delta are highlighted in red, orange and yellow respectively. The entire Bay of Bengal is featured in light orange. The blue dot in the screen represents the land which is lower than the dike. As the water in the dike is beyond the maximum water level, it is under the threat of collapse.

Drepung is informed of the helicopter's return to pick up the crew. The van is directed to the landing area of the helicopter in the airport. The satellite images of the deltas of the Ganges and Brahmaputra are suddenly highlighted in orange. Meanwhile, the blue dots representing the land are shrinking. Drepung says, "The Sundarbans...are really meant to be amphibious" (FDB 160). The helicopter lands down like a dragonfly through the clouds. Men in dark green uniforms from the helicopter help the crew to get inside. The short rows of seats are already occupied by some westerners, some Indians and school girls. The aerial view of Khembalung is a complete disaster. The island is submerged with all its greenery by the dark brown sea. The crew notices a crack in the southwest curve of the dike. Brown water rushes through the dike and flooded the fields. The author describes the flooded Khembalung thus, "it looked like a shallow green bowl, submerged in brown water until only an arc of the bowl's rim remained in air" (FDB 162). When Joe worries of the Khembalis, Charlie consoles him that they are safely loaded in the ferries. The helicopter flies away burying all the memories of the Sundarbans swamps. Robinson's description of survival in flooded Khembalung is a reminder of global warming and global sea level rise. This tale of the Tibetan monk's plea to save their island nation reflects the inevitable truth that destroying nature is a threat to the future generations.

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