



Feasibility Study-Applying a Method for Rebalancing Earth's Fresh Water and Reducing Glacial Retreat

Mountains: As a major ecosystem representing the complex and interrelated ecology of our planet, mountain systems are essential to the survival of the entire global ecosystem. Mountain regions cover approximately 25% of the Earth's land surface and are the 'Water Towers' of Earth. They source most of the Earth's fresh water repositories, as all rivers originate in them and flow to the oceans. This sustains the life of all beings and all ways of life. It has finally been proven that the ice and snows in the high Himalayas affect the Climate of the entire Northern Hemisphere.

Indigenous Mountain Forests: In mountain regions cloud forests are particularly valuable for the capture of water that is combed from mists and moving clouds. They are also of immense importance in maintaining a steady supply of fresh water to all the lowlands and downstream areas. Because of their complex root systems, they channel the fresh waters, into the underground aquifers and underground rivers which then feed into all of Earth's water tables. When these forests are extensively cut, massive problems occur and the water tables diminish.

In relation to their part in precipitation and ice nucleating, these indigenous high altitude forests play a major role in the making of mountain snows. Linked with the removal of around 70% of indigenous mountain forest globally, we are seeing enormous reductions in mountain snow and ice, along with the melting of glaciers. This is detrimentally affecting all watersheds and river sources. These snows and glaciers would normally act like a mirror reflecting a high percentage of solar radiation.

As they melt solar radiation escalates, increasing the temperatures on Earth. Also, when this ice melts it increases the quantity of water vapour in the atmosphere. Water vapour (H²O) is a very powerful natural greenhouse gas. High altitude mountain forests would normally capture this water vapour through precipitation and bring it back to Earth within 10 days. However when they are removed H²O stays in the atmosphere and significantly increases the problems of global warming.

In consideration of the important role that mountain forests play in maintaining and regulating the global climate and fresh water systems, the prompt regeneration of these forests is of critical and paramount importance. In order for these forests to be successful and effective in stabilising and regenerating Earth's Fresh Water Systems and Climate they need to be mixed indigenous mountain forests, rich in biodiversity. From our research we have come to understand that these forests have been removed on a momentous scale worldwide and that mountain areas are still being deforested.

With this in mind and after a great deal of research over many years, we have designed a potential restoration method, which could be used throughout mountain regions worldwide. We believe that if Earth's mountain regions were reforested by 25% globally within 30 years, that the natural balance of these systems could be restored. Due to rapidly deteriorating environmental conditions on Earth, and due to the fragility of mountain regions, it is urgent that a globally interconnected method is applied as soon as possible. This complies with the concepts of long-term environmental sustainability and hence sustainability for all life on Earth. It would be beneficial if a Feasibility Study, showing the effectiveness of this method could be conducted without delay.

Overall Objectives:

- To implement the method through developing a Feasibility Study.
- To show a fast way to restore indigenous forests and biodiversity, throughout denuded mountain regions (above 2,500ft), for long-term sustainability.
- To raise awareness and innovate an interconnected environmental action involving governments, the United Nations, environmental groups and local communities in the protection and regeneration of indigenous mountain forests worldwide.
- To reforest Earth's mountain regions by 25% globally within 30 years.

The Method: The method that we propose has been formulated considering the integration of modern and traditional conservation methods.

Because the Himalayas and the Andes are the two major mountain chains on Earth, regulating the Climates of both the Northern and Southern Hemispheres, it is important that this Feasibility Study should be primarily conducted in either or both of these regions.

Collaboration with Mountain Communities: It is important to recognize that the collaboration with mountain communities is essential for the effectiveness of any environmental mountain restoration program. It is only by involving and supporting them that an endeavour of this magnitude can be successfully achieved and prove to be long-term sustainable.

It is also important to note that generally it has not been the grass-root communities that have caused the majority of the environmental degradation that has taken place in these areas. It has always been in the interest of these communities to protect the natural resources, which supported their livelihoods. However now that these natural resources have become so scarce, the daily necessities of the local rural communities also threatens them. Therefore the methods that we are proposing have been created specifically to fit with the requirements and traditions of the different social groups throughout mountain regions worldwide.

Supporting and educating rural mountain communities is a fundamental part of the method that we are proposing. Mountain communities are the natural stewards of the water sources and natural mountain resources essential for all the lower lands of Earth. Therefore they should be encouraged and supported for their services in regenerating and protecting the environment. Without the recognition of the vital part that they play in being the natural caretakers of the mountain forests, they will be forced by poverty to either degrade these resources even further or to migrate. However if these communities are supported, they can provide the very important service of regenerating, safeguarding and preserving the natural ecologies.

It is important to remember that supporting these mountain communities is not simply an act of charity. It is a means by which all lowland communities, industries etc. can safeguard their own long term interests.

When searching through the traditional methods that the mountain communities have applied to preserve the environment, we came across the tradition of Sacred Groves. This method has been effective in the past and is still so in present times, in safeguarding environments. It is an ancient conservation method that many mountain communities are familiar with. Hence it could be very useful in helping to regenerate and preserve mountain forests.

Sacred Groves: These are small, forested areas conserved by the local people, which are intertwined with their traditional, cultural and religious practices. Well preserved Groves, prove to be storehouses of valuable medicinal and other plants, which have many land and water preserving properties. These Groves enhance local environmental and cultural wealth and are also ideal for practical environmental educational activities.

They are similar to temples but with the main emphasis being on the biodiversity in the Grove and not on a building. They do not necessarily need to be of a religious nature, they could be designed as community 'Peace Gardens'.

Another very effective method of spreading biodiversity over large areas that has been successful in recent years is that of creating green corridors/green belts. These help the fast spread of biodiversity over great distances.

Green Corridors: These are corridors of biodiversity that stretch across open land. It is a very effective way of spreading and linking biodiversity over large areas of land while focusing on relatively small areas. Mixed indigenous plant species will be selected for their environmental restorative and useful properties.

Local communities can cultivate plants that provide medicines, fodder, foods and fibre within these green corridors. These can become a local resource that supports the needs of the communities, brings more immediate employment and can help to secure their support for the project.

We have integrated the methods of Sacred Groves and Green Corridors along with Permaculture, forest gardening, companion planting and cottage industry scale cultivation of medicinal plants to create a model that could have the potential to cover all the requirements for the difficult task of Global mountain reforestation. We have termed this method ‘The Sacred Grove and Green Corridor Method’.

Specifications of Feasibility Study: In order for this Feasibility Study to demonstrate fast growth of indigenous forest over mixed and varied terrain, it needs to take place over a substantially large area (approximately 100kilometers or larger). Because it would be virtually impossible to make one single plantation over such a large area, the ‘Sacred Grove and Green Corridor Method’ involves the creation of many small plantations (Groves) throughout the area and linking them together with green corridors.

Scale of Feasibility Study: Throughout any given 100 Kilometre area of land in mountain regions, we foresee working together with approximately 20 local mountain communities.

A Sacred Grove (approximately 5 acres and above) would be created in close proximity to each of these communities. These Sacred Groves will be areas of mixed forest, consisting of local indigenous species, many of these having medicinal and environmentally beneficial properties. Some of these communities might already have a Sacred Grove local to them, which can be supported and protected through this method. By linking new Groves with existing Groves (the latter already being of significant importance for local communities), these communities would feel more devoted and dedicated towards generating and protecting the new ones.

We have approached mountain communities in the Himalayan regions of India and Nepal and have had favourable responses.

The Terrain: This study should take place in mountain regions from approximately 2,5000ft altitude, in an area that is already suffering from erosion and degraded soil cover, due to shortage of biodiversity.

Because this will be quite difficult terrain to reforest there will need to be a cohesive order by which the species of plants are introduced. This will entail using Permaculture methods and utilizing the properties of particular plants in order to create the right conditions to grow mixed forest (e.g. a strong root system that holds soil and moisture, creates biomass and a leaf canopy to protect saplings from excessive sunlight and weather conditions).

Predicted Time Duration: We believe that it will take between five and ten years, for this Feasibility Study to give a clear demonstration of the restorative impact that this method has on erosion, local ecology and the prosperity of local communities.

We also hope that throughout this duration, others will be inspired and copy this example and that it will spread rapidly.