

**Authors:** Stella Joy and Tara Joy, Directors of Active Remedy Ltd, U.K, Reg. No. 5474724  
16 Selwood Rd, Glastonbury BA6 8HN, U.K  
**Email:** enquiries@activeremedy.org.uk  
**Website:** www.activeremedy.org.uk

## **Payment for Environmental Services**

'Payments for Environmental Services' (PES) is not a new idea and has been found to be very beneficial, rewarding and cost effective as in the cases of the FONAFIFO program in Costa Rica which compensates upstream landowners for the protection of biodiversity and scenic beauty; or as in the case of New York City, USA which in 1992 entered into a PES agreement with the farmers and forestry landowners of the Catskill/ Delaware watershed for its clean water supplies.(Bishkek Global Mountain Summit 2002)

Mountains are not just some arbitrary system to be considered purely of value because of their particular beauty and biodiversity or for their recreational resources. Earths' mountain Systems should be considered as the 'Roof of the World' and as any householder knows; if the roof becomes unstable the whole house is in danger of collapse. Unfortunately, due to the massive deforestation of the indigenous forests of Earths' mountain regions within an extremely short span of time the roof has become destabilised and all of life on Earth is at risk.

*"Despite all of the great benefits that mountain forests provide they have been disappearing at a startling rate in the last decade."* (Bishkek, Global Mountain Summit, 2002).

If we were merely talking of our house we would not hesitate or spare any expense to have the roof repaired, understanding the dangers and losses which would naturally occur should we do otherwise. Regardless of our personal homes and economies, Earth is our one fundamental home and the source of all economies. We should and must attend to the instability occurring in this roof with far greater urgency than with our personal homes. The mountain regions are of utmost value to us all because within them lies the sources of all of Earths' rivers and all of its inhabitants' fresh water supply. The lives of all beings on Earth are dependent upon them.

*"The Commission stresses that the fragility of mountain ecosystems and the adverse impact of the degradation of those systems on highland and lowland populations have not been fully appreciated. The Commission recognizes the importance of mountains as the predominant and most dependable source of freshwater currently used by humanity, and therefore stresses the importance of providing adequate protection for both quality and quantity of water resources from mountainous regions. The Commission recognizes the vital protective function of a stable forest cover for the safeguarding of mountainous settlements and infrastructure. It also urges expanding the network of protected mountain areas to cover all types of mountain ecosystems,*

*strengthening existing management capabilities for conserving mountain ecosystems, species and genetic diversity and promoting local and non-governmental organizations' participation in the management of these areas". ( United Nations Commission on Sustainable Development, 3rd Session New York, 11-28 April 1995)*

Reforestation of Earth's mountain regions and the stopping of all mountain region deforestation is of critical and vital importance in the restabilisation of the roof and global fresh water system. Intact forest ecosystems buffer intense rainfall with their canopy and under story, regulate overland flows to streams with their humus-covered floors and hold shallow mountain soils in place (Hamilton, L.S.1996). Without these forests there is nothing to protect the mountain slopes from erosion, hence causing great devastation as the streams and rivers fill with rocks and silt and flood the lands lower below (Bishkek, Global Mountain Summit. 2002). Because of the complex root system of forests, they help to channel the fresh waters, high up in the mountain areas into the underground aquifers and underground rivers which then feed into all of Earth's water tables (Hamilton, LS. 1996). When these forests are extensively cut, massive problems occur and the water tables diminish. Precipitation at high altitudes turns water to snow, so covering our mountains and playing a major part in Earth's cooling system. Without adequate mountain region forests we are seeing an enormous reduction in mountain snows and the retreat of many major glaciers. This plays a major factor in 'Climate Change'

*"The world needs to keep paying attention to the environment of mountainous regions especially to keep the water clean and environmentally safe."*  
(Shafqat Kakakhel, United Nations Environment Program Deputy Executive Director"

Because all of life on Earth is threatened by this situation, it is imperative to try and remedy the problem. It would seem that the way to potentially do this lies in the reforestation of high altitude regions promptly. Unless a substantial percentage of mountain forests can be restored globally, fresh waters could become so scarce, as to make life on Earth almost impossible. By using a combination of methods, ranging from local traditional knowledge, companion planting, forest garden and permaculture techniques it is still potentially possible to establish indigenous, mixed, high altitude forests fast. Poor mountainous countries need the help of richer nations for their rehabilitation and survival and richer nations need the mountain region environments to be rehabilitated and regenerated for their own survival and well being. Mountain communities are amongst the poorest on Earth and cannot afford to do the work needed to maintain Earth's biosphere and environments without the financial support of richer lowland communities. Earth's nature is an interdependent system and we are all dependent upon it's health for our own.

*"Many of the world's most impoverished and food insecure people live in mountain regions. Consequently, there is a need to ensure the ecological health and the economic and social improvement of mountain areas, for the sake of both mountain inhabitants themselves, whose livelihood and overall well-being are at stake, and of people living in lowland areas."*  
(0547510\*Sixtieth session 58/216 of 9 February 2004, Item 54 (e))

Therefore when it comes to mountain regions it is essential that some sort of PES scheme is put into action fast as they hold the key to the survival of humanity and all life on Earth. In this respect it would be of benefit for downstream communities to invest in mountain region rehabilitation, as, through watershed protection, they provide direct economic benefits and ensure necessary environmental services such as protecting fresh water supplies (Bishkek, Global Mountain Summit, 2002).

*“Food security and alleviation of poverty in mountain livelihoods based on agriculture can only be achieved if the natural resource base is preserved and the services of mountain ecosystems are ensured in the long term. This also calls for a reevaluation of natural resources by society. Recognizing the multiple functions of natural resources, and compensating mountain dwellers for their endeavors to ensure the services of mountain ecosystems by managing the land in a sustainable manner, is a first step.”* (The Millennium Development Goals Report, 2008)

Regardless of how much a project like this might cost, it is nothing compared to how much it might save. It is important that we at least try.

*“Where there are threats of serious or irreversible damage; lack of full scientific certainty shall not be used as a reason for postponing cost-effective measures to prevent environmental degradation.”* (UNCED, 1992 .Principle 15)