

Date: Fri, 13 Apr 2007 19:59:01 +0200
To: water@ohchr.org
From: Arnold Groh <arnold.groh@tu-berlin.de>
Subject: Decision 2/104 UN Human Rights Council
Bcc: pjones@uusc.org,waterjustice@tni.org,info@ecehbonn.euro.who.int,

Dear Sir or Madam,

In reply to Decision 2/104 on Human Rights and Access to Water of the UN Human Rights Council, the research unit Structural Analysis of Cultural Systems (S.A.C.S.) of the Technical University of Berlin would like to make the following suggestions, particularly with regard to items d), e), f), and g):

In many areas of the world, the supply of drinking water is very problematic due to aridity. However, in a number of those areas, although it does not rain, there is atmospheric humidity \Rightarrow fog, seamist, or nightly dew. In recent years, there have been several projects of trapping this moisture with large nets (cf. <FogQuest.org>). The results have been very promising. If there is moisture that evaporates from the sea, villages and even small towns can be supplied with drinking water.

But those nets require constant manpower in terms of maintainance. Also, those nets are made of artificial material, and they do not really fit into the natural environment. They are, by far, not as effective as plants that are specialised for catching humidity from the air.

The probably most effective plant to serve this purpose is *Pinus canariensis*, a tree native to the Canary Islands. It is well-known for its capability of collecting air moisture, and has already been used for many centuries for this purpose. This tree would allow a much more effective and environmentally friendly way of supplying arid regions with drinking water than with fog-catching nets. Moreover, it would also help to establish or re-establish vegetation in a natural way. Agriculture would profit from it, too, because vegetables could be produced, watered with the help of *P. canariensis*.

In those places, where the net-projects are currently running, it is the right time now to plant *P. canariensis* seedlings underneath the nets, as long as there is constant watering to allow them to grow. They will soon replace the nets; the surface of the trees is much larger than the surface of the nets, thus enabling the moisture to condensate. Within a few years, a population of *P. canariensis* will be established that collects many times more water than the nets. With regard to ecological aspects, the introduction of *P. canariensis* into the environments concerned do not cause a problem, since in those desert areas, there are no native trees that could be superseded, and the *P. canariensis* trees are easy to control. They are a natural alternative to the unnatural plastic nets, and can even help to enhance any local flora.

The functions of trees within different ecosystems with regard to collecting fogwater have been studied intensively during the past years, both in general (Burkard et al., 2002; Hughes & Brimblecombe, 1994; Jauregui, 1991; Neal et al., 1993), and especially with regard to *P. canariensis* (Aboal et al., 2000; Grill et al., 2004; Morales et al., 1999; Page, 1974; Luis et al., 2004; Tausz, 1998). The tree grows in a wide range of climatic conditions, it can survive drought, heat, and some frost, it can live in areas from sea-level up to more than 2.000 m above sea-level. When a population of trees has been established, it additionally produces timber and fuel wood.

Areas, in which *Pinus canariensis* could be used for obtaining drinking water, include:

- Chile
- Dominican Republic
- Ecuador
- Eritrea
- Guatemala
- Haiti
- Israel
- Namibia
- Nepal
- Peru
- The Sultanate of Oman
- Venezuela
- Yemen

Generally, these are areas where there is air moisture, but the climatic conditions do not allow for a condensation of the humidity in the air, which is necessary for rainfall.

S.A.C.S. would be very pleased to coordinate projects of implementing *Pinus canariensis* for the production of drinking water in such areas. There has already been a preparatory meeting with the scientists of the Universidad de la Laguna (ULL), Tenerife, who are specialised in *P. canariensis* research. At the ULL, there are enough seedlings available to start such a project. Also, preparatory correspondence has been made with research scientists in several other countries, as well as with project partners in Namibia and Peru. The Technical University of Berlin is in touch with scientists in most of the countries concerned, so that the number of project locations could easily be expanded.

We would be very grateful if you would let us know your point of view as how such an initiative that is targeted at serving the access to drinking water as a Human Right can be translated into action.

Yours truly,

Dr. Arnold Groh

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