

Rock wool as water reservoir – it's magic

Tomatoes and other crops have been grown on rock wool for years in Dutch greenhouses. That same substrate can help solve a major problem in India: the high mortality rate, within a year, of newly planted mango trees. The same principle appears to work in Ethiopia, too, for olive trees. The TNO Development Cooperation Programme is, quite literally, bearing fruit.

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'We were looking for partners to establish innovation projects in developing countries and via ICCO came into contact with ADATS, an NGO active in the Indian state of Karnataka. We started off talking about *carbon credits*, but once they told us about their problems growing mango trees, my light-bulb lit up,' says Dr Ted Slaghek, member of the Flying Innovation Team of TNO. As product manager for Ingredients and Functionality, he knew about the use of rock wool in greenhouses and immediately saw the possibility of using it there. 'Rock wool is made by heating basalt that then becomes liquid and can be spun. It is 97 per cent air. Throw a bucket of water over it and not a drop seeps out. It's like magic! And the rock wool then *feeds* the water to the roots of the plant.'

Pilot studies were carried out in March and July of 2008, with 30 and 800 young mango trees being planted respectively. A rock wool block was placed in the hole dug for the plant along with a pitcher of water. The tree was then placed in the hole and the hole filled with earth and manure. March is not the ideal time to plant since it is so dry there, yet 80 to 90 per cent of the plants survived by the end of 2008. Slaghek: 'That's a really good result. ADATS is convinced that rock wool gives the newly planted mango trees a higher chance of survival. And that safeguards the incomes of families, which means that they can stay above the poverty line. We have already shipped thirteen containers of rock wool to India. We will use part of the new plantings – 8.5 hectares – for statistical research.'

FROM INDIA TO ETHIOPIA

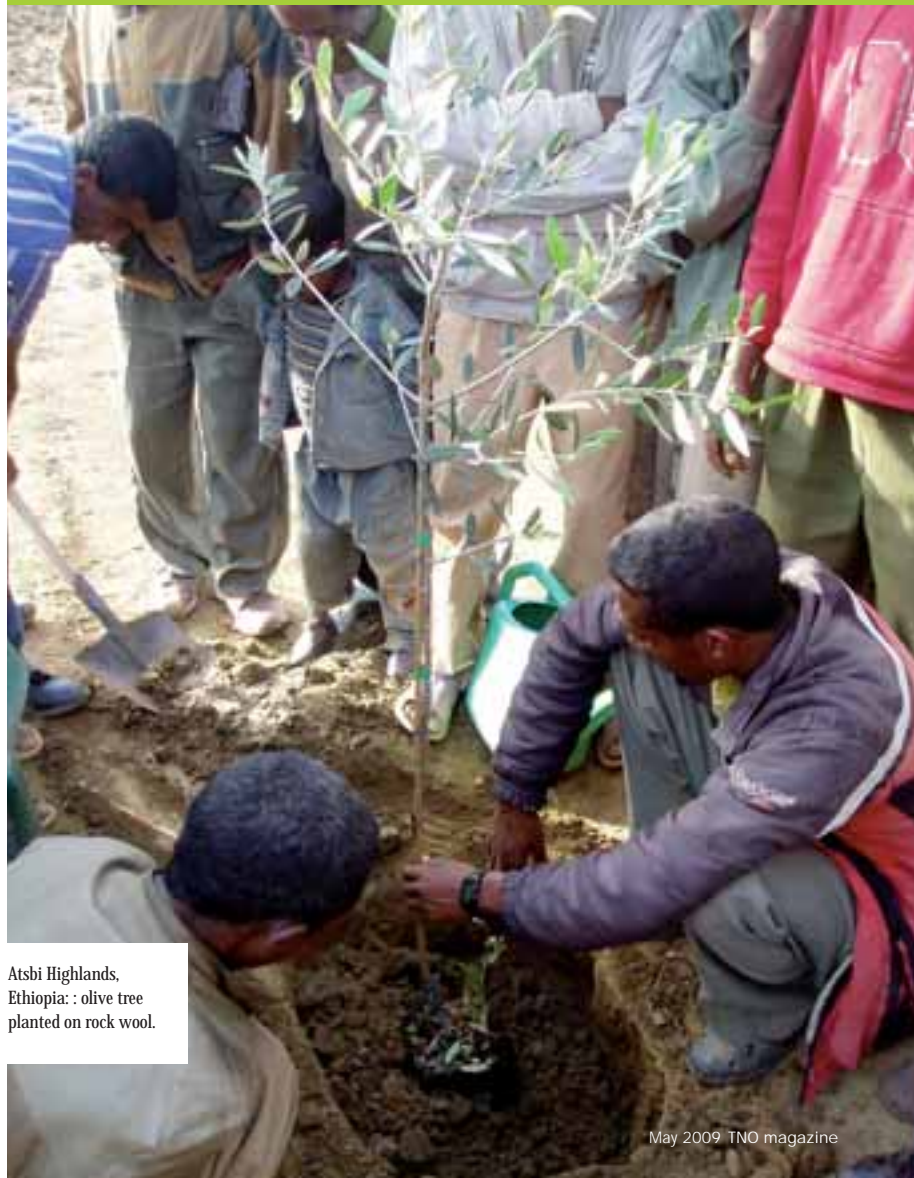
In December 2008 Paula van Hoorik, senior consultant for Innovation Management at TNO, reported on the project in India at an innovation session. 'Afterwards a Dutch entrepreneur came up to me and asked whether this could also be something for olive trees in Ethiopia. In September 2009 two hundred olive trees were planted at an altitude of 2900 metres on the Atsbi Highlands. Half of the trees have a rock wool water reservoir. Currently, all trees are doing well. The ultimate effect will only be known after a year or two, however, since these trees grow slowly. TNO helps to create a solution, lower the threshold and promote local companies to produce and commercialise the solution. The result is a sustainable solution.'

Info: paula.vanhoorik@tno.nl, ted.slaghek@tno.nl, chantal.stroek@tno.nl

DEVELOPMENT COOPERATION VISION

Technology and innovation foster regional economic growth along with the well-being of individuals. Poverty can be combated and well-being boosted only through the joint efforts of the private sector, local development organisations, local community leaders, authorities and knowledge institutions. TNO focuses on the themes of energy and climate, food and agriculture, ICT and monitoring.

Info: mathilde.miedema@tno.nl



Atsbi Highlands,
Ethiopia: olive tree
planted on rock wool.