



# The Ericsson Technology Challenge 2002

Welcome



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Southern Ethiopia can be a difficult place to live. Collecting water is hard work which has to be done every day and sometimes twice a day.

In the dry season there is too little water. In the wet season there is so much that streams swell to rivers and rivers swell to torrents which can sweep away all before them.

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The images in this brief show you a location at Taza in southern Ethiopia. The stream shown passes through a deep gorge which is 10 metres deep and has sheer sides. People, like the ones shown in the images, have to clamber down by means of narrow paths and steps hacked into the mud walls. They must then climb back out with a container full of water.

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Your brief is to design and make (on the computer) a system for drawing water from the bottom of the gorge. In developing your design you should take the following considerations into account:

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- ◆ *The gorge is 10 metres deep and has sheer mud sides*
- ◆ *The gorge will flood during the rainy season so you cannot build a permanent structure on the river bed.*
- ◆ *The system will need to be maintained by local people who do not have access to sophisticated tools, equipment or machinery.*

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*Dirty or contaminated water is another problem. This small river is used for everything. People wash in it, do laundry in it, wash and water animals in it. In your research you are also asked to identify some problems that will occur for users of this water. Make suggestions for how the water should be treated before use.*

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These web references may be useful to you in your initial research  
(you can copy and paste these URLs onto the address bar of your browser)

How Stuff Works at	<a href="http://www.howstuffworks.com/">http://www.howstuffworks.com/</a>
Concern at	<a href="http://www.concern.ie/home.htm">http://www.concern.ie/home.htm</a>
Trócaire at	<a href="http://www.trocaire.ie/">http://www.trocaire.ie/</a>
Action Aid at	<a href="http://www.actionaid.org/resources/resources.shtml">http://www.actionaid.org/resources/resources.shtml</a>
News issues and water	<a href="http://news.bbc.co.uk/hi/english/sci/tech/newsid_1234000/1234244.stm">http://news.bbc.co.uk/hi/english/sci/tech/newsid_1234000/1234244.stm</a>
Ideas for moving water	<a href="http://www.consallen.com/">http://www.consallen.com/</a>
Scientific American	<a href="http://www.sciam.com/2001/0201issue/0201intro.html">www.sciam.com/2001/0201issue/0201intro.html</a>
More water issues	<a href="http://www.nytimes.com/learning/general/specials/water/">http://www.nytimes.com/learning/general/specials/water/</a>
One way of purifying water	<a href="http://www.lbl.gov/Science-Articles/Archive/water-disinfection.html">http://www.lbl.gov/Science-Articles/Archive/water-disinfection.html</a>
Issues in water management	<a href="http://www.jhuccp.org/pr/m14edsum.stm">http://www.jhuccp.org/pr/m14edsum.stm</a>
How gears work	<a href="http://www.howstuffworks.com/gear1.htm">http://www.howstuffworks.com/gear1.htm</a>
Search engines	<a href="http://www.google.com">www.google.com</a> <a href="http://www.askjeeves.co.uk">www.askjeeves.co.uk</a>

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Good luck with your assignment

Your project should be completed and ready for presentation  
by 16.00 today.