

Rural water supply for all, for ever

Can Nicaragua become an example?

By Henk Holtslag, March 2013

Of the 780 million people worldwide who are still without an improved water source some 80% live in rural areas. In sub-Saharan countries some 35% of the rural water points are not functioning. A country with a remarkable and sustainable increase in rural water supply is Nicaragua. This country has 6 million people of which some 43% live in rural areas. With development aid an innovative low cost hand pump was introduced in 1987. By 1995 this pump became an integral part of rural water programmes of NGOs and government agencies. Rural water supply coverage between 1987 and 1995 doubled from approximately 27.5% to 54.8%. Of this 27.3%, rope pumps account for 23.6% (86% of the total increase). *

Now, 25 years later the situation is:

1. Over 70.000 rope pumps on boreholes and hand dug wells. Cost /pump 70-150 US\$
2. Besides handpowered, also pedal, horse, engine and wind powered models developed
3. Some 10 workshops produce the pumps and another 8 outlets sell the pump
4. 10 to 20% of the pumps are used for communal supply, the rest for self supply
5. Even pumps that are given away in general remain working
6. The scaling up is also thanks to the government who made it a national standard pump
7. Most pumps are funded by Government or NGOs, some 30% is paid by private families
8. Over 90% of all pumps are working (Evaluation of IRC) ** This high % is explained by its **repairability**. (Simplicity, Low cost, decentralised production, spares available)
9. The maintenance consist of replacement of the rope and pistons and oiling bushings
10. The shift from imported piston pumps like Indian Mark 2 to locally produced rope pumps increased the rural water supply 3 x faster than countries without the ropepump
11. The number of imported piston pumps has reduced to less than 2% of all hand pumps
12. The rope pump is now by far the most used technology for rural water supply
13. In some areas families now get piped systems or get electricity and buy an electric pump but most families will still use the rope pump for cattle watering or irrigation
14. A market for 200.000 more handpumps (study Water & Sanitation Program, Worldbank)
15. Even 8.000 \$ boreholes of 70 meters deep are equipped with 140 \$ rope pumps!
16. All this goes on since 1998 without any NGO or external advisors involved
17. A study of effects of water for rural families (5015 families studied) concluded:
 - a well increases incomes of small farmers with 30%
 - a rope pump on that well increases again average incomes with 220\$/year **

The total investment in these pumps was 1 mln \$ in training etc and some 8mln \$ in pumps. The result is an **increase of the GNP of 100 mln \$ since 1990** due to family rope pumps.

There is much to improve on both pump quality and installation and some workshops make bad pumps but.....the pumps work and generate income for producers and users.

The development in the rural area is notable and rope pumps are a step on the water ladder Nicaragua is an example that, where water levels are less than 50 meters and low cost wells can be made, the rural water supply can increase drastically at investment costs of 5 to 15US\$/capita. What is possible in Nicaragua seems possible in many other countries.



Rope pump for Self supply used for domestic use, cattle watering and garden irrigation



Rope pump for Communal supply on 60 mtr deep borehole of 8000US\$. Used by 20 families



This rope pump for communal supply was installed near San Isidro in 1998.



*It is repaired with basic tools and materials like rubber strips but **after 15 years of communal use it still works fine.***



A pole model rope pump installed in 1998. This family now has piped water but still uses the rope pump for cattle watering etc.



Taller Modesto in Somotillo. One of the 10 workshops in Nicaragua. They sold 600 pumps Workshops EM and AMEC sold some 20.000 pumps and the workshop Bomesa some 40.000



There is much difference in quality. Pumps with black steel pipes are corroded within 10 years. Models with galvanised pipes last 20 years or more



Where water quality is a problem people use a ceramic pot filter called Filtron. The Filtron factory in Nicaragua has produced over 100.000 filters

References

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