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**JOEP VERHAGEN**, SENIOR SANITATION SPECIALIST AT THE IRC INTERNATIONAL WATER AND SANITATION CENTRE, EXPLAINS HOW SANITATION EFFORTS NEED TO BEGIN TO INCREASE THEIR FOCUS ON SUSTAINABILITY

# Sustaining sanitation

The IRC International Water and Sanitation Centre is an independent non-profit organisation based in the Netherlands. It is a knowledge broker, innovator and enabler of change within the Water Sanitation and Hygiene (WASH) sector, internationally and in selected focus countries and regions. IRC's vision is that water, sanitation and hygiene services are extended to the poor and are better attuned to their needs while being more sustainable and equitable, better managed and governed.

While EU aid for water and sanitation hit a record €1.6bn in 2009, in March 2012 the EU announced plans to redirect development to 'the world's neediest nations' with fears that this could harm sanitation efforts in Latin America, Asia and possibly some sub-Saharan African countries. In an interview with Pan European Networks, Joep Verhagen, senior sanitation specialist and manager of the IRC's South Asia and Latin America team, brings his considerable experience in supporting large scale rural sanitation programmes and issues such as adaptive management, monitoring, productive use of faecal sludge, sanitation marketing, social mobilisation and social marketing to explain how European, and indeed global, sanitation efforts need to begin to increase their focus on sustainability.



Joep Verhagen

**What are your thoughts on EU plans to redirect development and the possible effects this could have on sanitation efforts?**

Many countries in both Africa and Asia are experiencing quite rapid economic growth, and I think that this necessitates a shift in the nature of the relationship which they have with the EU. When Ghana and India are compared, a large part of the finance for the Ghanaian water sector comes from donor countries, whereas in India, in terms of money influx, the aid is very low. The EU may therefore need to establish a different kind of relationship with India and, indeed, with other Asian countries. This new relationship should be tailored towards looking more for partnerships which foster the exchange of knowledge, learning, and mutual co-operation and collaboration.

**Does this need to be at the policy or scientific research level?**

I think it is both. Science is often seen as a very technical issue, but in some cases, and this is



**The water and sanitation sector needs to be approached in a sustainable way**

certainly true of the sanitation sector, the real issues are not that technical; they are more institutional and political. As such, the EU could focus on that and work with India or other Asian countries, or the more developed countries in Africa, towards improving the enabling environments, which are fundamental to improving sector performance.

In short, the EU needs to look for different types of relationship where the focus is not on money flows, but on the exchange of knowledge, innovation and learning. It is also important to understand that some Asian and Latin American countries are still desperately poor, such as Nepal and Bolivia, and that they require sustained financial support.

### **How does the IRC help to co-ordinate European efforts to improve sanitation in such developing countries?**

Our main contribution to this sector has been a focus on sustainability, to move away from infrastructure projects towards the delivery of sustainable WASH services. This is incredibly important, especially when it is considered that one out of every three water supply systems in the developing world is not functioning. The IRC has thus argued that it is necessary to move from an infrastructure project approach to a service delivery approach in order to address the sustainability issue.

An infrastructure project approach with a beginning and an end is not going to be sustainable, and so it is essential to look at the entire life cycle of a service or an infrastructure; ensure that water and sanitation services are monitored and repaired; and it is essential to look at the costing of the entire life cycle of those infrastructures and services. For instance, our five-year action research programme,

### **An unfortunate truth**

Between 2004 and 2009, over 32 million people gained access to improved water supply, and nine million to sanitation facilities, thanks to support from the European Commission.

Indeed, according to the Commission's 'EuropeAid' website, financing for water and sanitation programmes amounts to almost €400m per year, and programmes are implemented in over 30 countries. Projects target the most vulnerable and needy groups in rural and peri-urban areas, and each project ensures active participation of local partners such as NGOs or local government.

Today, the EU provides close to €1.5bn each year for water and sanitation programmes in developing countries – making it the biggest contributor.

However, in May 2012, in comments carried by theparliament.com, European Commissioner for the Environment, Janez Potočnik, highlighted: "Water is as vital as the air we breathe, yet roughly one sixth of the world's population doesn't have access to safe water. For them, drinking water is a luxury. They collect water from ponds, muddy rivers, dry river beds and puddles in the ground, despite the fact that 70.9% of the Earth's surface is covered with water. The unfortunate truth is that if we were to collect all of the planet's water in a glass, only the equivalent of a few droplets would be drinkable."

Despite this evocative image of the developing world, water is also a major concern for Europe, as the Commissioner pointed out: "While Europe is considered as having adequate water resources, many of its regions, in particular in the south, suffer from low availability of water and water scarcity."

In discussing possible solutions to this problem, Potočnik said: "Economic instruments, water loss controls, water reuse and recycling, increased efficiency in domestic, agricultural and industrial water use appear to be obvious solutions. Yet alone they are not sufficient. Europe's water use cannot continue to increase; we must reduce demand and ensure a more sustainable use of our waters."

Given the aggravating factor of climate change on the water cycle, and the fact that population growth and changing lifestyles, rapid urbanisation and economic development are dramatically increasing the demand for the limited water resources in developing countries, the global sanitation crisis could worsen if further attention is not paid to it. As such, the Commission's focus on this area is, undoubtedly, welcome, and will serve to foster additional scrutiny on how Europe develops its future sanitation and water policies.

WASHCost, found that it might take five to 20 times more funding to maintain a latrine over a period of 20 years than to construct it. At the moment, however, most projects focus on the initial investment, and do not budget for operation maintenance, replacements or expansion, and that is something that needs to change.

Monitoring must also be improved, because if you monitor for sustainability, you will discover issues of significance such as people that



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have started defecating in the open. There are some extremely exciting new technologies now coming onto the market to help in this area – it is now possible to combine mobile phone technology with GIS systems, for instance, which is a very promising new area that is now making monitoring much easier to implement.

In addition to this, of course, it is also necessary to foster an increased co-ordination and harmonisation between different donors (different government agencies).

**Do you think that gaining this cohesion will continue to be something of a challenge?**

Yes, I do, and the lack of cohesion can be exemplified through the well-known pictures of African villages, where a number of different latrines have been built next to each other all by different donors using different technologies and providing different subsidies to the users. This is certainly an area where the EU could come to play an important role through increasing the harmonisation of efforts between donors.

Learning and the sharing of knowledge is also fundamental to the future success of global sanitation efforts, in that it is extremely important for a country to have the capacity to learn from the things they are doing and the things they are experiencing, as this will help them to become better able to make future decisions on their own on where they want to head in the sector.

**How would you like to see R&D evolving in the field of water and sanitation, what are your hopes for the future, and how will you respond to them?**

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urbanising world. Solutions for rural sanitation problems are emerging, and we are now getting a better grip on how these problems can be solved. However, strategies for tackling urban sanitation are struggling because this is a much more complex area.

The large scale system that has worked, water-borne sewage, is not applicable to many developing countries, and there is currently a big effort needed to create new innovative solutions for urban sanitation. Another emerging area that is linked to this concerns human waste in that it is a resource which is currently not being utilised. It is seen purely as waste, and not as a source of energy and nutrients.

Much more work needs to be done on this, despite the fact that there are a lot of very exciting things happening at the moment. Indeed, in the renewable energy sector there are very promising efforts taking place on recycling agricultural waste into energy and fertiliser, and we now need to find ways to add human waste to that equation. In Sweden and Germany, the bio-digesters are being piloted that are linked to CNG (compressed natural gas) stations for cars, for instance, and we need to find ways to add human waste into the process.

There are also efforts happening in Africa, where, in one example, bacteria are added to algae that are grown in nutrient-rich waste water. The bacteria consequently break down the algae and release the oil within them, which can be used as biofuel. Turning waste into a resource is an incredibly fascinating area, and will come to be of tremendous importance to both the developed and developing worlds. Nevertheless, this is an area where much more research and development and pilot projects are needed.

It must also not be forgotten that, even for basic sanitation, there are many areas which require improvement through research and new technologies. At the moment, for example, we still do not have a low cost sanitation solution for areas with high water tables, and, while some solutions have been posited, they are simply too costly to be implemented. There is still an issue of low cost treatment technologies for the faecal sludge from single pit latrines, for instance.

### Is research actually happening in these areas?

There is some research happening in some places, but it is very fragmented, and the issue is that these problems are quite new and are only just coming to be recognised.

A lot of work is being conducted into eco-sanitation, for example, but this requires a different type of latrine to the single pit latrines that exist in most developing countries. Indeed, in areas which are densely populated, such as Bangladesh (where there are more than a thousand people per km<sup>2</sup>), people empty single pit latrines and throw the waste in the canal or simply at the side of the road, creating what is essentially postponed open defecation. This is something that needs to be addressed at governmental level, because, for the moment at least, this is hardly ever a part of sanitation projects.

### Could this problem not be solved through the integration of a modern sewer infrastructure?

It could in some places, but, to return to Bangladesh and its huge population, the country simply does not have the means to build a sewage network that can cover the entire country. It is also important to note that water-borne sewage is a very costly and



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inefficient solution. That is, the more concentrated the waste is, the easier it is to treat, yet water-borne sewage systems require the raw waste to be diluted by a factor of 200 in order for it to be transported (fresh rainwater is added) before energy intensive treatment technologies remove the waste once more.

Another major issue that is now beginning to emerge is water scarcity, yet water is still being wasted at a very high level within the developing world through industry and agriculture. What is more, water for agriculture and water for industrial purposes are still being treated in isolation.

The production processes of a lot of these industries can be made much more efficient, and so the International Finance Corporation is arguing that, if you become more efficient in your production processes, then you will reduce your costs and, simultaneously, reduce your waste output. This is an approach that warrants more research and attention.

This demonstrates that the argument for sustainability is not only about improved treatment technologies, but also about looking at the entire production process of an industry in order to perceive where the gains can be made, and to therefore realise that if you have less water as an input, you will create less waste and therefore save money.

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