

Water and community development: Rainwater harvesting and groundwater recharge

A sustainable approach to human development at the global level

Robert Davies, International Business Leaders Forum & **Bunker Roy**, The Barefoot College, Rajasthan, India

The following is based on a briefing paper prepared for a seminar hosted by The Prince of Wales International Business Leaders Forum (IBLF) in December 2004. The paper aims to present some ideas and practical applications with regards to rainwater harvesting in India and other countries as well as public-private partnerships that can make a critical difference to one of the greatest global challenges – access to safe drinking water.

New world economy

India is a fast growing market for consumer goods, technology and global investment. According to investment bank Morgan Stanley (in “New Tigers of Asia”) the rise of India is tipped to become one of the most important economic forces in the world and the world’s largest economy. According to research firm IDC (*India Brand Equity Foundation*), India will also be one of the three leading IT markets in the Asia Pacific. But at the same time it has a major social challenge of poverty, where business can play a key role in tackling this serious task along with community based partners. Increasingly business is looking for ways to develop their business relationships, reputation and community engagement, aligned to the social priorities of the new Indian Congress Government and their *Common Minimum Programme* where their commitment to rural development is one of their highest priorities.

Many national and international companies have both direct and indirect interests in, and impacts on, water in their products and processes water treatment, purification, products that require water, and water infrastructure and can benefit from practical, down to earth partnerships to channel resources, skills and goodwill to meet the development challenge.

Access to water for drinking and sanitation is a central target in the UN Millennium Development Goals (Target 10: to halve by 2015 the proportion of people without safe access to drinking water). The stark fact is that in India 80 per cent of the population simply lacks access to safe drinking water, but helping solve this problem may not be such an impossible task.



Figure 1. Lack of adequate management leads to poor allocation of resources.

Most Indians have extremely limited and unreliable access to what they need most. Around three-quarters of the population have no public sanitary facilities (such as toilets). They experience a daily crisis. Many even die from it: microbes in their drinking water kill every year more than one million Indian children. 700 million people still living in villages, and the 200 million or so who constitute the urban poor lack access to safe water and sanitation. The United Nations claims each person needs 30 to 50 litres a day for their needs.

It is our belief that something very practical and inexpensive can and should be done involving corporations and donors, where the impact is felt immediately on women and children with a high impact on life expectancy and health and where the partnership can be sustainable. They can enter community partnerships for water access, using time tested, low cost, decentralised methods for roof top

rainwater harvesting, ground-water recharge and small-scale urban sanitation.

There can also be a greater part for decentralised solar power to meet basic needs. According to the UK Financial Times *Supply and demands*, rainwater harvesting and community empowerment projects are one of the most hopeful and cost effective solutions to water crisis whose solutions have eluded Governments and development agencies for decades because they have not taken it seriously

Meeting needs with intelligent solutions

There are many approaches to water access but rural and remote areas have distinct challenges and opportunities. One solution already tested is Rooftop Rainwater harvesting, which is a well established traditional approach over hundreds of years, collecting natural rainfall and channelling it into underground tanks that can store and

provide safe water for daily needs for weeks and months.

The other low cost complementary solution is ground water recharge. By constructing small dams across dry tributaries and riverbeds and allowing the rainwater collected to percolate, it is possible to replenish wells and aquifers. By channelling surface rainwater into unused and dry open wells some several hundred feet deep, it is possible to revitalise the thousands of dry hand pumps and traditional open wells for irrigation. Local people can be trained to repair or maintain their own hand pumps.

With the onset of so-called modern and large, if expensive and often unreliable, public water infrastructure projects and technology, rainwater harvesting in the main became unfashionable in public policy. It is being reintroduced on a local scale across a wide area by the Barefoot College in Tilonia, Rajasthan, under the leadership of Bunker Roy where a model approach to roof top rainwater harvesting with community empowerment has been developed and is being replicated more widely. Roofs of schools and community buildings are adapted to catch the infrequent and precious rainwater and channel it to underground tanks built in the foundations. Traditional knowledge, local materials and community skills have been applied in the construction of these tanks by Barefoot architects and this has given the community a sense of ownership. In turn this brings a substantial community contribution in voluntary labour, supervision and raw

materials. The financial accounts for the projects are sometimes painted in large columns of figures on the school walls. This demonstrates transparently the costs, and where the money went to, thus tackling the notorious corruption that has come in the way of large public infrastructure projects.

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To date there are many projects starting up, offering water at a fraction of the cost of water sellers and out of scale water infrastructure projects. In addition to the pioneering work of the Barefoot College, the Jal Bhagirathi Foundation, Tarun Bharat Sangh, Wells for India and work of organisations such as WaterAid, together with the hygiene education work of organisations such as Arpana, are engaged in many projects.

What is needed to spread the vision, provide technical assistance and training for Barefoot engineers and builders, to provide low cost finance for projects and materials. A typical roof top rainwater-harvesting project in a remote rural school to collect 100,000 litres would cost a one-time investment of less than \$10,000. This would provide drinking water to about 40 children and functioning toilets in a school for more than five months in a drought region.

Why does business have an interest in access to water?

The answers are not complicated. Investors need to demonstrate practical concern with one of India's key problems. Companies cannot prosper in consumer markets that lack safe water and suffer from attendant health problems. Markets grow better in areas well served with water and with healthier consumers. Many companies have direct experience of water as a factor in production, and are major industrial users of precious water supplies that demand a sustainable approach. Some are in the water business and benefit from diverse approaches to meeting needs in poor urban and rural communities.

They can make a difference through entering practical partnerships offering a sustainable approach that is scalable. Philanthropic funds can be made more effective, bringing long-term returns to communities.

How can business help?

Business can contribute by partnering projects at the location or area of factories, plants and offices, as part of market entry or new investments in India, as part of community programmes, or as an extension of employee engagement or philanthropic programmes. The potential role for business and donors is on four levels:

- Entering partnerships with community organisations providing cost effective and high return donations to support the development of roof top rainwater harvesting;
- Providing project funds for rainwater harvesting projects at the village level;
- Providing funding to support training in hand-pump maintenance and technical assistance to spread the methods and techniques more widely;
- Supporting decentralised sanitation and drinking water projects.

Other areas of business involvement include companies engaging staff in direct support through fundraising, project visits and, where possible, technical support. Development funds can also be established to help channel resources for innovation and replication.

Summary of seminar conclusions

The International Business Leaders Forum workshop held at Clarence House in December 2004 which included participants from organisations



Figure 2. Shared water resources engage community participation.

as diverse as Alcan, Shell International, Coca-Cola, WaterAid, GlaxoSmithKline and Wells for India and community leaders from Rajasthan UNDP and UNICEF. Each made a variety of commitments to help and agreed with the following conclusions:

- **Community-based solutions** to water challenges, which draw upon local knowledge and skills and utilise traditional, low-cost and low-technology techniques;
- **Local ownership** over projects, facilitated by consultation with local communities to give them an emotional and where possible, financial stake in project success;
- **Reducing local dependency** by involving local authorities and villages at 'planning' as well as doing stages of project and programme development, and empowering local people by providing them with the skills required to sustain projects over the long term;
- **Integrating issues** by merging the concept of rainwater harvesting with broader issue of watershed management and, similarly, analysing water access and sanitation issues in terms of wider implications for health, education and energy (for example);
- **Training and capacity building** need to be delivered at the community level using organisations with grass roots credibility to facilitate replication of projects;
- **Multilateral partnerships** that draw upon the core competencies of all partners involved, and include mechanisms for monitoring successes/failures, managing conflicts and maintaining relationships in the long term;
- **The private sector** to be part of the solution rather than the problem bringing core competences, contributing funding mechanisms and adopting projects within the areas of their facilities and operations;
- **Using schools**, which provide both a symbolic starting point (because they are public buildings) and an environment for pushing concepts and technologies as an integrated part of learning in the curricula, as the focus for projects;
- **Funding mechanisms** need to be explored that enable projects to be scaled, with more precise financial costings and specifications and a variety of approaches to pay back including micro-credit, community contributions etc.



Figure 3. HRH, The Prince of Wales with Robert Davies and Bunker Roy.

Participants also identified a need for:

- **Good examples of projects and partnerships**, as well as opportunities to see these examples in practice and to learn from, evaluate and understand the business model that drives them;
- **Strong policy and regulatory frameworks** that recognise the interests of everyone involved (such as control of excess groundwater use of deep well digging) and take into account the views and needs of civil society;
- **Analysis of finance implications.** How do you access funding for a project? What role should village and municipal finances play?

- **Promotion of the business case** for why companies should get involved in the water issue.

Our view is simple, the above makes clear that there is much that business and donors can do and by choosing to accept the challenge facing them, a solution to the provision of clean water for India and other countries could be close at hand. Following the workshop, the feasibility of these ideas will be explored further, and IBLF will facilitate greater business engagement in solutions and partnerships.

ABOUT THE AUTHORS

Robert Davies is the founder Chief Executive Officer of The Prince of Wales International Business Leaders Forum, and has lead its activities since 1990 with global corporations promoting responsible business practices globally to benefit business and society. In turn this is helping to achieve social, economic and environmentally sustainable development, particularly in new and emerging market economies. The IBLF currently has over 80 corporate members and is active in partnerships for development in over 50 countries.

Bunker Roy has been living and working in the small village of Tilonia for the last 34 years. The Barefoot College which he started is the only College in India built by the rural poor for the rural poor. The idea was to identify the poorest of the poor unemployed and unemployable youth from remote villages who are drop outs, wash outs and drop outs and train them to be competent and confident "barefoot" water and solarengineers, teachers, doctors, communicators, architects and computer programmers. The barefoot approach has been replicated in 13 States of India.

ENQUIRIES

International Business Leaders Forum
Tel: +44 (0)20 7467 3600
E-mail: robert.davies@iblf.org
Web site: www.iblf.org

Global Rainwater Harvesting Collective
E-mail: bunker@vsnl.com
Web site: www.globalrainwaterharvesting.org

For more information on rainwater harvesting and how to help through funding or direct involvement see www.globalrainwaterharvesting.org or www.iblf.org/water.