



TARAGram
YATRA 2013

inspiring sustainability

"Safe Water for All and Always"

Science - Policy - Markets

Proceeding

22-24 October 2013

Development Alternatives World Headquarters
New Delhi

and

TARAGram Orchha, Madhya Pradesh

Organised by



Supported by



Table of Contents

| | | |
|-----|------------------------------------------------------------------------------|----|
| 1 | EXECUTIVE SUMMERY..... | 3 |
| 2 | INTRODUCTION..... | 4 |
| 3 | OBJECTIVE OF THE YATRA | 5 |
| 4 | THE INAUGURAL SESSION | 6 |
| 5 | TECHNICAL SESSION..... | 8 |
| 5.1 | SAFE WATER FOR ALL - IMPERATIVES FOR SCALE (SCIENCE – POLICY - MARKET) | 8 |
| 5.2 | SAFE WATER FOR THE LAST MILE - TECHNOLOGY SOLUTIONS..... | 9 |
| 5.3 | REACHING THE LAST MILE – MODELS FOR SERVICE DELIVERY | 11 |
| 5.4 | EXPERIENCE IN SUSTAINABILITY | 13 |
| 5.5 | ACCESS TO SAFE WATER BY THE POOR - INFLUENCING CHANGE..... | 15 |
| 5.6 | SAFE WATER FOR ALL- ENABLING POLICY ENVIRONMENT..... | 16 |
| 6 | VALEDICTORY SESSION..... | 17 |

Annexure

| | |
|---------------------------------------|----|
| Annexure 1: LIST OF PARTICIPANTS..... | 19 |
| Annexure 2: AGENDA | 23 |

1. EXECUTIVE SUMMARY

To fulfill our mission to secure the future of our children and life on planet earth we need to cut to the heart of contemporary dialogue and advocate examples of proven practice in sustainable development. This must then lead to policies that respond urgently to the current social and environmental crises.

The theme for TARAGram Yatra 2013 was “Access to Safe Water for All and Always: Science-Policy-Markets”. This year, TARAGram Yatra 2013, scheduled from 22nd to 24th October 2013 focused on designing strategies for enabling access to safe drinking water for all. The Yatra provided a forum for stimulating debate, exchanging ideas, experiences and learning of professionals working in this sector.

The launch event for this programme was scheduled at Development Alternatives World Headquarters in New Delhi on the 22nd October 2013. The second and third day of the event were held in TARAGram Orchha, Madhya Pradesh. The three-day event included technical sessions, sustainability experiences and a Developmental ‘Mela’ built around the theme. The technical sessions at the Yatra initiated discussions on technical research, processes for taking technologies from laboratories to people, ingredients for successfully marketing the technologies on ground and the policy regulations for scaling these up.

Discussions were focused on new and emerging technologies and barriers faced by research institutes while bringing products from lab to the ground. Successful service delivery models were shared by professionals and organizations working in this area, to help identify triggers for scale. Dialogues focusing on behavior change interventions brought out tools and models for awareness generation and demand creation. *Yatris* experienced firsthand sustainable water management solutions, which could help in solving the current water crisis. It oriented policy makers and practitioners with emerging concepts and models for sustainable development emphasizing on access to water in South Asia.

“Science is known but the technology is yet to be packaged.” Though culture and government systems exist but they are not easy to manage. Key issues that need to be addressed include awareness, accountability, pricing policy, infrastructure (distribution to decentralized locations) and the disposal facility of filters. Thus, water quantity and quality need to be addressed together. There is a need for collaborative actions and partnerships to address the complex, aspirational, water supply, access and affordability issues. And we have to work at faster pace to achieve the MDGs in real terms.

Opinion leaders in the community play a major role in affecting behavioural change. Gradually, people’s perceptions are changing and there was increasing awareness on chemical and physical contamination. School children can play a major role as a change maker and hence there is a dire need of WASH education in schools. Continuous triggers are required to integrated approaches on sanitation, hygiene, waste-management and hand-washing.

While technology and awareness plays a pivotal role we need to also develop policies so that people can afford purification measures. Hence a technological solution’s design must be made easy for the layman to understand to the benefits of science can reach the poorest of poor.

2. INTRODUCTION

Access to water is a basic human right and it is required to sustain a reasonable life and health. Across the globe, 780 million people lack access to an improved water source; that is approximately one in nine of the world population (WHO/UNICEF, 2012)¹. In South Asia, only 24 per cent of the population has access to piped water supply as compared to a world figure of 55 per cent. The South Asian region is water stressed and the situation will aggravate further in the future as it strives to cater to the domestic, agriculture and industrial needs of 1.4 billion people i.e. half of the world's poor population.

Other than the availability of water, which is central to growth of the economy, quality of the water available is also crucial. Consumption of contaminated water is the major cause of diarrheal diseases and over 1.6 million people die every year from diarrheal diseases caused due to lack of access to safe drinking water and basic sanitation. Over 90 per cent of these are children under the age of 5. Africa and South Asia are home to more than 80 per cent of child deaths due to diarrhea.

Currently the most affected population facing the brunt of consuming contaminated water is the bottom rung of the society i.e., bottom of pyramid (BoP) population. One of the largest barriers for the same is lack of awareness about the need for safe water among the BoP. The end users look for instant gratification and water is a sector where providing instant gratification is often tough since health benefits are often seen in the long term. Apart from this where there is awareness; there is lack of affordable and appropriate technology options to deal with the contamination. While there is a lot of funding support available for the technology research, very little of it translates into products that can be used especially by the BoP populations. Most of the research remain as papers and publications and don't reach the people who could benefit from it. There is a need for translational research to create an ecosystem of both supply and demand; encompassing technology supply systems, delivery models and enabling policy environment to bridge this gap.

For the few technologies that have reached the market, a lack of appropriate delivery channels prevents their mainstreaming. Logistics of supply are a challenge due to the lack of adequate civic infrastructure. Water purification products can be classified as push-products that require intense efforts to promote and scale demand. The delivery models used in pushing these products are very important especially since the target market is socio-economically and culturally diverse and complex. The lack of ability and / or the willingness to pay for these products and services further retards access. Markets need to develop a better understanding of the target audience to be able to service them.

Policy in the water sector by respective South Asian Governments focuses on water availability with limited emphasis on the quality of water supplied. There is no regulation on water purification solutions available in the market or on new technologies being introduced. Currently there are no norms on disclosure of information for this sector. Often it is seen that information on shelf life, service life, precautions, safety issues, replacement of filters, end of life indication and disposal ethics not explicitly mentioned. Quality, safety, health and environment concerns of new technologies need to be scrutinized far more closely. Thus there is an urgent need to address these issues of Science, Markets and Policy for ensuring access to safe drinking water to all.

¹ Estimated with data from WHO/UNICEF Joint Monitoring Programme (JMP) for Water Supply and Sanitation (2012). Progress on Sanitation and Drinking Water, 2012 update

3. OBJECTIVE OF THE YATRA

The objective of the Yatra was to provide a forum for stimulating debate, exchanging ideas, experiences and learning of professionals working in this sector. The technical session at the Yatra initiated discussions on technical research and processes for taking technologies from laboratories to people, ingredients for successfully marketing the technologies on ground and the policy regulations for scaling these up.

The three-day event included technical sessions, sustainability experiences and a Developmental 'Mela' built around the theme. Discussions were focused on new and emerging technologies and barriers faced by research institutes while bringing products from lab to the ground. Successful service delivery models were shared by professionals and organizations working in this area, to help identify triggers for scale. Dialogues focusing on behaviour change interventions were brought out tools and models for awareness generation and demand creation.

The deliberation over three days lead to the design of a roadmap on interventions needed to scale up technology access for safe water to communities through markets. It oriented policy makers and practitioners with emerging concepts and models for sustainable development emphasizing on access to water in South Asia.

4. THE INAUGURAL SESSION

The inaugural session was flagged off with the introduction of the esteemed guests. **Mr. George C Varughese, President, Development Alternatives** welcomed everyone to the TARAGram Yatra 2013, an annual flagship event initiated by Development Alternatives 4 years back. He expressed that the focus of this event lies in bringing the practice to policy connect with focus on South Asian and South East Asian countries and bringing our findings to the rest of the world. While explaining the significance of the Yatra he took everyone through the design of the sessions and through examples, cited how these Yatras have provided inputs to the regional and global summits. He concluded that since the focus is on water and especially two words 'All and Always', the Yatra would focus on following areas:



Mr. Varughese giving the welcome note

- Technology solutions for access to safe drinking water
- How to bring a science to policy connect
- How to influence change
- Focus on Delivery models and markets



Dr. Khosla giving the inaugural address

The inaugural address by **Dr. Ashok Khosla, Chairman, Development Alternatives**, he discussed the complexity related to water and the lack of understanding among the economists on this. He not only emphasised the importance of water for the ecosystem but also highlighted the increasing rate of demand in the face of issues such as climate change. Thus, water as a resource is getting scarce and problems related to it will prevail. He also referred to a "24 x 7" water supply as not only a safer but also the cheapest alternative. He concluded by stating that TARAGram Yatra is a way to look at how we can improve our lives.

Dr. T. Ramasami, Secretary, Department of Science and Technology, GoI, in his key note address for the Yatra mentioned that when we discuss about safe water we need to look at it in totality; where quality is a key element. He emphasised on the traditional and conventional ways of conserving, storing and treating water. He stated that currently there is a huge market flooded with various brands competing with one another while there is no bench mark for testing efficiency. He also highlighted that while the science is known, the



Dr. Ramasami giving the key note address

technology is yet to be packaged. The markets today are not people centric. They are still profit centric. Along with these issues we also need to develop policies, which will empower people and the community to access safe water in an affordable manner. He wrapped up his brief address by further emphasising on designing the solutions and technologies which a layman can understand and use. Thus the highest science is required for poorest of poor.

Dr. K. Vijaya Lakshmi, Vice President, Development Alternatives shared her views through a presentation where she emphasised the need to work for safe water. Only 4 % of Indians have access to household water. Currently there are new and emerging technologies in the market such as nano-technology however its effect on health is not yet studied properly.

The key issues that need to be addressed are awareness, accountability, pricing policy, infrastructure (distribution to decentralized locations) and the disposal facility of rejects and used filters. Water quantity and quality also need to be addressed together. There is a need for collaborative actions and partnerships to address the complex, aspirational, water supply, access and affordability issues and to achieve the MDGs we need to do this in real terms. Barriers to access to safe water for all and always which needs to be addressed are:

- User-not aware
- Technology-affordability
- Market-not able to reach the last mile
- Finance-Management of the system

And while wrapping up also touched upon some of the key concerns related to the risk management studies and management of logistic, infrastructure and the lack of regulations for the technologies.



Dr. Vijaya Lakshmi
giving the thematic
presentation

5. TECHNICAL SESSION

5.1 SAFE WATER FOR ALL - IMPERATIVES FOR SCALE (SCIENCE – POLICY - MARKET)

The first technical session “Safe water for all- Imperatives for scale” was chaired by **Mr. Shrashtant Patara, Senior Vice President, TARA** and the panel composed of Dr. Sanjay Bajpai, DST, Ms. Nalini Andrade, femS3 and Mr. Anuj Sharma, Piramal Water Pvt Ltd.

Dr. Sanjay Bajpai, DST touched upon the science spectrum of the session. He emphasized that while there is a huge water deficit in the agriculture sector, the primary focus will be on drinking water. He stated that science can provide tools and technology to meet the net demand and supply of water. Science can aid in policy formulation by proving inputs. He also emphasised that awareness is still a challenge and science & technology can play a major role. While highlighting some of the initiatives by DST, he referred to the WASH programme under DST. Capacity building in the community is also done so that they can understand and absorb solutions. He firmly believes that once awareness is created and capacity is built an appropriate technology should be selected to address the issue. Given the disparities and complexities in the society a generic solution will not work. He appreciated the initiatives taken up by DA in Bundelkhand and mentioned that solutions needs customization. Solution design is the key to the success of water interventions and while designing solutions its technical viability from user’s point of view, economical viability, and social and environment viability has to be kept in mind.



Mr. Patara, chairing the session on Science-Policy-Market



Dr. Bajpai emphasizing on the collaborative action

While touching upon the various aspects to be kept in mind looking at the system, he emphasised that water purification systems also need to be standardised. There should be some standard methods for testing, disposing the waste etc. While there are already technologies available that need to be customized simultaneously there is a need for development research to find new technologies and solutions. Thus science needs both action and development research. While concluding his presentation, he reiterated what Dr. Vijay Lakshmi had mentioned that single entity approach is not going to work and there is need for collaborative actions for the same.

Ms. Nalini Andrade, FemS3, shared her key learning from a successful market based solution in Agra. The pilot followed a multi-stakeholder approach through the involvement of an Implementation partner, technology partner, Self Help Group of women who implement and the Government. She emphasized about market challenges, last miles challenge, ownership and self-sustenance and operational and logistic issues related to market



Ms. Nalini sharing her views on the service delivery model implemented by femS3

based models. She also communicated key drivers and barriers for the same and the focus of the pilot was on the recovery first and then on profit making. Highlights of the Presentation include:

- Collaboration is very important
- Contextualize the solution- Emphasis on solution design based on the needs of the community which does not mean getting a fancy new product.
- Behavior change is a critical component

Mr. Anuj Sharma, Piramal Water Pvt. Ltd. shared his experiences with Sarvajal model. Positioning from health perspective he quoted that around 1.5 million children die because of diarrhea alone and around 600 million USD corresponds to the economic burden for the same. He believes that one of the major challenges is lack of appropriate technologies, and unwillingness to pay. While putting his views across he also mentioned that while technology is available, the cost of purification has to be made affordable to the community. Piramal started with a franchisee model where technology is customized to local context and business is set to serve every household on a daily basis at a rate of 30 paise per litre. In the last 3 years, in Gujarat, 600 purification units have been installed. All the units have sensors, which can be remotely monitored to check whether they are working properly and running daily, or is there any trouble shooting needed. The remote sensing system is solar powered to address the power issues in remote villages. He also mentioned that the three units in schools which provide free water to students but after school hours. An ATM is also available to community with some minimal fee. The water problems are local and hence the solutions also need to be localised.



Mr. Anuj sharing his experience on the model adopted by Piramal

The presentation highlighted the:

- Need to learn from different sectors.
- Shift from technology → Model designed around service.
- Emphasis on the solution is local by clustering units to result in a sizeable number.
- Fundamental design around services

Mr. Patara, session chair, concluded the session by discussing some of key drivers and barriers for growth/scaling up of market models.

5.2 SAFE WATER FOR THE LAST MILE - TECHNOLOGY SOLUTIONS

The technical session on "Safe water for the last mile- Technology solutions" was chaired by Dr. Thuppil Venkatesh, Quality Council of India and the panel members were Dr. Abhay Kumar, Eureka Forbes, Dr. Debabrata Rautaray, Tata Chemicals Innovations Centre, Dr. S Khuntia, EX CSIR-IMMT and Ms. Kriti Nagrath, Development Alternatives.

Dr. Venkatesh opened the session by touching upon how research that is done should be translated so that it reaches the ground. Three things to be kept in mind so that research or technology developed reaches the ground



Dr. Venkatesh during the session

are Quality, Affordability and Accessibility. While identifying an appropriate technology is important at the same its affordability and economic viability cannot be overlooked.



Dr. Kumar, sharing his view on appropriate technologies

Dr. Abhay Kumar, Eureka Forbes put the focus on technology solutions for providing safe water that can reach the last mile. He also highlighted that we need to be clear on the definition of safe water. I.e. it should be free from diseases causing microorganisms like bacteria, virus and protozoa. Citing the example of Orcha where he saw the water contamination is due to coliform and not much of fluoride and iron. He highlighted the importance of selection of appropriate technology. An appropriate technology selection depends on clear objectives, setting the performance benchmark, affordability, service life and sustainability.

He also placed his take on community or cluster based models which are easy to maintain and managed as compared to big community systems. Hence it is also important to have a service friendly system. While selecting a system for rural areas more focus should be on non-electrical development or combination of technologies like solar pumps for lifting water, etc. He concluded his presentation by highlighting the need for validation of the technology in context to performance and at the same time certification and health safety requirements.

Dr. Debabrata Rautaray, Tata Chemicals Innovation Centre placed the focus on solving social issues of water and at the same time also looking at business as that is the only way to attain sustainability. He further mentioned that clean technology in context to water is of utmost importance. While talking about the newer technologies in the market, Dr. Rautaray emphasised on the uses and functions of nano technology. One of the new opportunities in water purification is biometric membrane technology.



Dr. Rautaray listening to other speakers during the session

He further added that the problem in rural and urban India remains the same. Packaging the technology is important. He concluded his presentation with various new emerging technologies such as membrane based on which if explored are effective as well as affordable to solve the water quality issue.



Dr. Kuntia during the first session at TARAGram Orcha

Dr. S. Khuntia, Ex-CSIR-IMMT, Bhubaneswar began his presentation by opening a discussion to use traditional knowledge to develop technology and transfer it to people/community to create businesses so that the benefits of science and technology could reach people. He also emphasized on pricing as a very sensitive issue and hence costs should be low which can be affordable by poorest of poor.

Dr. Khuntia presented the Terafill water purification system- a low cost and sustainable solution for domestic and community level application. The technology is appropriate for a country like India and is stressed on the fact that technologies must be produced locally, so

that the low cost can be maintained. The way to make a technology affordable is by using indigenous technology produced by local material and local skill, waste management & maintenance free, low cost and durable and above all people participation.

Ms. Kriti Nagrath, Development Alternatives focused on how the technology can be developed in house and sourced /adapted. She also emphasized on the prior to market launch, each technology package should undergo rigorous check on key sustainability parameters to assess Financial, Economical, Environmental, Social and Technological (FEEST) feasibility and viability. Thus, appropriate technology should be looked from different angles like financial, economic, environmental, social and technological for the product to be sustainable.

She emphasized on the current gaps between the research and market and lack of clear standards. Also there is a lacuna within the incubation system, collaboration system and collaborative effort. She concluded her presentation by stating there is no clear cut standard and regulation related to technology.

Summarizing the session Dr. Venkatesh highlighted some key points:

- Technology development, transfer of technology, combination of various technology and economics of all need to be considered
- Develop a white paper on Safe Water for the Last Mile - Technology Solutions and submit it to regulatory authority soon after the yatra
- Today after exposing people to knowledge on water contamination there is now fear to drink water
- Data need to be collected on number of water borne diseases and the reduction in the water diseases due to use of water purification technologies and also on the health cost reduced
- Water must be treated and respected. Water is life-giver if that water is ill-treated it becomes poison.

Water is Mantra

Water is everything

Water gives energy

Without water there is no knowledge

Without water there is no life

5.3 REACHING THE LAST MILE – MODELS FOR SERVICE DELIVERY

The next technical session on “Reaching the last mile- Models for service delivery” was chaired by Ms. Renu Khosla, CURE, and the panel members were Mr. Siddharth Bountra, TARA, Mr. Dayanand Tandon, CREATE, Mr. Sambit Lenka, Bottoms Up Consulting and Mr. Saroj Mohanta, MART.

Ms. Renu Khosla, CURE emphasized that “Water for All” is all about equity. We have to address the issues and challenges that make the delivery to the last mile always a reality.



Ms. Khosla chairing the session

Mr. Siddhartha Bountra highlighted that purification solution for BoP is a hard nut to crack and available solutions in the market are not affordable including the low cost water filters. The available affordable solutions are also not reliable hence the uptake is very low. One of the solutions developed by TARA is Aqua+, a liquid hypo chlorite solution is not only easy to use but also affordable and can treat water in 30 minutes (bacteria free). Mr. Siddhartha highlighted the twin fold distribution channel used for the last mile delivery (existing distribution networks and social enterprises).



Mr. Bountra sharing Aqua + experience

Mr. Dayanand Tandon, highlighted challenges like access to hand pump water which is not pure, storage is done in unhygienic condition, contamination is unchecked by family members as the awareness rate is very poor among the people.



Mr. Tandon, talking about issues related to safe water

He emphasized that it is very important to educate the community on supplying water purification solutions. Hence it is important to demonstrate why there is a need to have safe drinking water for people, create awareness on the benefits of safe water vis-a-vis expense on medical care and impact on health. He cited some of the examples of workable models such as the Safe Water, Aqua +, aqua tab etc which can reach the last mile with other grocery items. Apart from the large networks, local part time entrepreneurs can also help in taking up the distribution at local level. Influence of SHG members, ASHA workers can also help strengthen the model. He concluded his presentation by stating that there are many other successful models running which can be scaled up such as the possibility of exploring the easy EMIS from MFIs.

Mr. Sambit Lenka, Bottoms up Consulting brought out that a capital based model delivered through a focus on profit connected to the concept of value, is more lasting and sustainable. He also highlighted that business is not antagonistic to social change. Mr. Lenka also discussed some three ways of structuring business models

- Profit maximizing model - someone has to be benefitted with profit
- Patient capital
- Grant

All these three will have to deliver value (something that people value such as colour, taste, smell etc). Else it will be just delivering 'PUSH' models and the only way to develop sustainable solutions is through a 'PULL' model.

Mr. Lenka also highlighted two broad service delivery models and three types of delivery models: Service delivery models like Upfront model – pay upfront and Pay per use along with Delivery models like localized context, economic model and new together complement.



Mr. Lenka talking about how to develop sustainable solutions



Mr. Monhanta
expressing his views
during the session

Mr. Saroj Mohanta, MART, stated that the social sector and corporate sectors are not two entities. He also emphasized on the fact the people should not get things for free, but they should pay. He raised key question on who will subsidize products once they are sold in the market, ease of access, regular adoption etc. He also highlighted the issue of increasing the margin for the intermediaries selling the product in the market. Mr. Mohanta also stated that we really have to understand the amount of money that BoP thinks is “less” and he also highlighted that all the pioneers in market will have to put lot of more money into the system.

This session was followed by a group work where four groups were formed and each group was asked to pose as various stakeholders such as: Piped water supply, water tankers, retailer/distributor, and water kiosk and government distribution system. After the respective groups selected their role they were asked to put the challenges, barriers, triggers to scale as a group exercise.



Group activity during the session on models for service delivery

5.4 EXPERIENCE IN SUSTAINABILITY

Till two years back, this tribal village was severely water stressed with the only wellbeing situated 2-3 km away, resulting in the women having to walk long distances every day to fetch water. A complete transformation has taken place with the establishment of a solar power based piped drinking water system that supplies water to households and community water-posts. The infrastructure is owned and managed by the community through a Pani Panchayat, and households pay a nominal fee for the service. Today, the village enjoys round the year access to water. Another one was TARAGram Pahuj established in 2007 in Ambabai village of Jhansi is named after the famous river Pahuj. It demonstrates the models of water conservation and resource efficient agricultural practices. The sustainability resource centre covering 7.5 acres of area, functions as an innovation, action and outreach platform for efficient irrigation, water conservation and harvesting techniques. A roof-top rainwater harvesting system helps reduce the water stress during the lean period. The centre is supplied with pure and safe drinking water through the Jal-TARA filter installed.

Visit to Govind nagar of Bajni panchayat, Datia

- 62 HHs, 672 population; total area of the village 248 ha, forest area 652 ha, area under watershed 9 ha, 4-5 check dams; major livestock – goat, hens, poultry
- Previously migration to Gwalior & Ahmedabad was high. Women to travel 1-2 km to fetch water in summer. There was only a hand pump to serve the purpose of drinking water.
- Focus was on farm pond based livelihoods e.g. chestnut (singhada). Farm ponds are of size 40 x 20 x 3 m³
- Monsoon – 2 months of 80% & 2 months of 20% intensity. Kharif crop is wheat and rabi crops are mustard & gram
- Pukka houses are made in collaboration with govt. through IAY jointly with Sanitation & TSC
- Issue of malnutrition was there. Kitchen gardening demonstrated to have knowledge on nutrient value

Conversation with Ganpat, a farmer:

- Land of kitchen garden is a patta land
- A/C in SBI, Datia which is 10 km away; no Adhar card; one ration shop in Bajni, the nearby village
- MGNREGA work like road repairing, digging well etc.
- 45 children of the village including girls are going to school. One hand pump & tap in the school for d/w
- Solar pumped water supply system – roof top solar panels each with capacity of 110 W, 54 taps in the village, 5 hr/ day of water supply, source is ground water, 120 ft deep bore well, nearby hand pump is of 190 ft depth; water level found at 45 ft; 16 parameters of water are tested in every three months as per PHE guidelines; max height to have pumped water is 3.5 m. Panipanchayat – meeting in every 15 day.
- Direct impact of watershed was found in the water level of wells. In rain, as energy is lowered, supply in only nearby 4-5 taps. Pump is used for 10 months.
- Soft copy of water map of the village is available, community is well known about the pipeline system.

- Women are mainly engaged in firewood collection and household works.
- The difference – not to go outside, cleaner water, tastes better, iron level lowered, now 10 buckets of water are used per day as compared to 5 buckets earlier.
- No storage tanks, no toilets, no electricity
- Health issues of fever, cold, diarrhea, jaundice – now decreased



Conversation with women during field visit

Dr. Management, augmentation, water based livelihoods, structures of water harvesting. Highlighted on:

- Farm ponds – beside agriculture also used for fish farming
- In Bundelkhand, previously >2000 taps were constructed by Chandellas
- Check dams to reduce the soil erosion & the increase the water level
- Pahuj – demonstration centre of different water efficient technologies – solar pumped irrigation system, farm pond, sprinkler irrigation - farmer's resource centre – social laboratory.



Dr. Pandey, during the experience sharing session

Mr. A. R. Shiva Kumar, Karnataka State Council for Science and Technology focused on rain water harvesting as a simple traditional method which can be used for sustainable water quantity. He mentioned that RWH is one of the best techniques for sustainable model.

- RWH – collecting roof top water
- Pop up filter – separates dust, re filter, recharging to ground water

He said in 2009 they made a regulation to create rainwater harvesting systems in Bangalore. After that around 23680 rural schools have established the system.

- RWH helpdesk - training programs, awareness camps; installation in rural schools, public places (parks); institutions and residential areas; collaboration with BWSSB & KSCST
- 4 lakhs bore well in Bangalore are dead
- Chennai has done excellent work on RWH, model is different. 36 varieties of RWH have demonstrated



Mr. Kumar, sharing his experience related to RWH

5.5 ACCESS TO SAFE WATER BY THE POOR - INFLUENCING CHANGE

Technical session - von "Access to safe water by the poor-Influencing change" chaired by **Dr. D.K. Bose Behavior Change Communication Strategist** and the panel members were Mr. Ram Prasad, Final Mile, Dr. Anil Gautam, People's Science Institute and Mr. Binaya Raj Shrestha, Practical Action- Nepal.

Dr. Bose opened his session by asking the audience and the panelist to critically ponder on three words:

- Access (It is very problematic and access to what kind of water are talking as access to safe water varies from geography),
- Influence and
- Change



Dr. Bose, chairing the session on influencing change



Mr. Shrestha emphasizing on tools for behavior change

He also stirred discussion over what is called safe water, he expressed that in some parts of India water has arsenic, some part has fluoride similarly there are issues related to safe water in different parts of the country. Hence, what is safe water and for whom. He further added that human-beings are not interested in science but access to safe water.

Mr. Binaya Raj Shrestha, Practical Action- Nepal stated that if we look at the characteristic of water then it is a good solvent but water can be contaminated and de-contaminated. Hence, technology can remove contamination but due to lack of awareness water can get contaminated again. Low-income communities have different perception and for them they judge quality of water by turbidity, colour and smell. They do not consider physical and chemical contamination and only 21 % of them only adopt any kind of filter or treatment methodology.

While highlighting some of the tools for behaviour change he mentioned that opinion leaders in the community play a major role. Apart from them, school children also play a role of local change makers in the family and the society. He also emphasized that continuous triggering media is very important and along with it, it is very important to look at integrated approaches on sanitation, hygiene, waste management and hand washing. He further added that reaching from 1000-10,000 is easy but to scale and reach the last mile government interventions is necessary.

Mr. Anil Gautam who emphasized the need for capacity building of the community based organization that in turn over a period of time can influence some sort of change in the community through behaviour change communication. Behaviour change does not happen when the community is aware, It happens when the benefit offered to them is greater than the current ones.



Mr. Gautam talking about need for capacity building

5.6 SAFE WATER FOR ALL- ENABLING POLICY ENVIRONMENT

After a brief tea break the fine technical session started with "Safe water for all- Enabling policy environment". Some key points highlighted by **Ms. Kriti Nagrath** and it was furthered by the discussants Dr. Amit Nair, World Bank, Dr. Lam Dorji, Royal Society for Protection of Nature (RSPN), Bhutan and Mr. S Mohanabavan, District Secretariat, Sri Lanka.

Some of the key points highlighted by Ms. Kriti Nagrath for enabling policy environment were:

- Standardization of technologies before their market launch
- No policy framework drafted to assess appropriate technologies
- Technology should be localized –local contextualization
- Quality Control mechanism should be in place to ensure each batch meets standards
- Quality Assessment for delivery of safe water – norms for unpackaged water, periodic random checks by 3rd party validation
- Disclosure norms and guidelines for consumers
 - Efficiency and appropriateness of the product
 - End of life (disposal) and service requirement



Ms. Nagrath presenting key policy discussion

Some of the key point raised for service delivery and the role of government for the same were:

- Should govt. be a complete service provider and what is the mechanisms for implementation and accountability
- There could be complete Market based approach
- Need to Create conducive environment for investment
- Quality control and assurance
- Point of Use is an interim solution hence what is the timeline for the final solution and accountability

She also raised a valid point as to how can government schemes integrate behaviour change and not just awareness into their programmes.

Dr. Amit Nair emphasized that we need to look at government perspective which is quite difficult. Till the time government provides safe water to all we should look at household water treatment solutions. Technologies (PoU) are all fine but household do not know how to use technology and they re-contaminate water in the process. Hygiene and behaviour are also very important aspects and take time. We cannot have safe water without proper sanitation. Regarding testing and validation protocols he emphasised that currently these systems are present but not rigid. Hence it needs to be implemented in a better manner. There is need to have a regulatory body (board) to check the safety of water provided by different players. Dr. Nair firmly believed that some amount of water should be given free to the lower strata and over a limit it should be charged.



Dr. Nair talking about household treatment solutions



Mr. Lam Dorji talking about PPP models

While discussing the points from the input presentation **Mr. Lam Dorji** presented his views by stating that the government has a big role to play and market cannot solve the problem alone. He also emphasised on collaborations and partnerships like public-private model should be followed by the government to create space for the private players to create sustainable solutions.

Mr. Mohanabavan also placed his view and stated that majority of people are living in an unorganized way and hence the government should provide piped water which should be safe. After the discussants had put their views forward the forum was let open for discussion



Mr. Mohanabavan during his presentation

Some of the key discussion points that emerged during this session were that there should be incentives given to plumbers and others in this business so that they can also be trained for servicing the water systems. There is a need to give an initial push and then the market will take over and evolve. There are plenty of technologies and successful models and the government should push certain models. For example: De centralization. Also, there is a great need to work together to move forward.

6. VALEDICTORY SESSION

In her valedictory address Dr. K VijayaLakshmi, expressed her gratitude to the *Yatris* "As *Yatris* and now part of DAs extended family you have walked with us in sharing the same concerns that DA has been working on". She also raised the question on how we can work together so that people should not drink unsafe water. In the process we are looking at technologies, but we need to also look at traditional practices that can solve the problems.

Secondly we also need to look at policies, how we govern safe and sustainable water systems.

Thirdly finding market for scale, by making profits in a way resources are conserved and service of clean and safe water is provided to the community. What are the ways and mean through which community can be empowered. We need to start thinking on the lines as to what kinds of incentives mechanisms are needed to provide an enabling environment for entrepreneurship to flourish.

A vote of thanks was given by **Dr. Alka Srivastava** who thanked all the *Yatris* for spending their valuable time and being part of the Yatra 2013. It was an enriching experience and their valuable inputs were appreciated. She also thanked the international delegates to make it to the event on a very short notice.



Vote of thanks by Dr. Alka

Annexure – 1

LIST OF SPEAKERS AND PARTICIPANTS

| S. No. | Name | Organisation |
|-----------------|-------------------------|----------------------------------------------------|
| SPEAKERS | | |
| 1 | Mr. Shrashtant Patara | TARA |
| 2 | Mr. Anuj Sharma | Piramal Water |
| 3 | Dr. Sanjay Bajpai | Department of Science and Technology |
| 4 | Dr. T. Ramasami | Secretary, DST |
| 5 | Dr. Ashok Khosla | Development Alternatives |
| 6 | Mr. Ram Prasad | Final Mile |
| 7 | Mr. A R Shiva Kumar | Karnataka State Council for Science and Technology |
| 8 | Mr. George C Varughese | Development Alternatives |
| 9 | Dr. S. Khuntia | Chief Scientist (Rtd) Ex-CSIR-IMMT, Bhubaneswar |
| 10 | Dr. K Vijayalakshmi | Development Alternatives |
| 11 | Dr. Amit Nair | WSP, World Bank |
| 12 | Ms. Nalini Andrade | FemS3 |
| 13 | Dr. Abhay Kumar | Eureka Forbes |
| 14 | Dr. Debabrata Rautaray | Tata Chemicals Innovation Centre |
| 15 | Mr. Dayanand Tandon | CREATE |
| 16 | Mr. SambitLenka | Bottoms up Consulting |
| 17 | Dr. D.K Bose | BCC Strategist |
| 18 | Ms. Renu Khosla | CURE |
| 19 | Dr. Thuppil Venkatesh | Quality Council of India |
| 20 | Mr. Binaya Raj Shrestha | UWASH, Kathmandu |
| 21 | Mr. S. Mohanabavan | UNHABITAT, Sri Lanka |

| | | |
|---------------------|------------------------|----------------------------------------------------------------------|
| 22 | Mr. Lam Dorji | RSPN, Bhutan |
| 23 | Mr. Saroj Mohanta | MART |
| 24 | Dr. Anil Gautam | PSI |
| 25 | Mr. Siddhartha Bountra | TARA |
| 26 | Dr. S.N.Pandey | Development Alternatives |
| 27 | Ms. Kriti Nagrath | Development Alternatives |
| PARTICIPANTS | | |
| 28 | Dr. Lakshman Prasad | Consultant |
| 29 | Ms. Suparna Majumdar | Student |
| 30 | Ms. Aparna | IRRAD |
| 31 | Ms. Vrinda Gupta | Student |
| 32 | Ms. Babina | Student |
| 33 | Mr. Midewal Weyezer | German Embassy |
| 34 | Dr. Alka Srivastava | Development Alternatives |
| 35 | Mr. Rajat Batra | Chief Executive Officer, STENUM Asia Sustainable Development Society |
| 36 | Mr. Vikram Saini | Jamia Millia Islamia University |
| 37 | Dr. Tarun Dwivedi | Society for Social Action & Research |
| 38 | Ms. Archana Vaidhya | Indian Environment Law Office |
| 39 | AVM S. Sahni | Development Alternatives |
| 40 | Ms. Arundhati Das | Development Alternatives |
| 41 | Ms. Sutul | Development Alternatives |
| 42 | Mr. Binu K George | Development Alternatives |
| 43 | Mr. Anand Rudra | USAID |
| 44 | Mr. Solomon Mangam | World Vision India, Faridabad ADP |
| 45 | Mr. Sanjay Vashisht | HBF |
| 46 | Ms, Sanghamitra | Development Alternatives |
| 47 | Ms. Gazala Shaikh | Development Alternatives |

| | | |
|----|------------------------|---------------------------|
| 48 | Ms. Deepti Roy | Development Alternatives |
| 49 | Dr. Veena Khanduri | India Water Partnership |
| 50 | Er. Ravindra Kumar | SWaRA, Lucknow |
| 51 | Mr. Praveen Pillay | Water Maker |
| 52 | Mr. D.S.C Lahary | Consultant |
| 53 | Mr. Thomas Hilkar | Student |
| 54 | Mr. Nitin Sharma | Reliance Foundation |
| 55 | Mr. Dinesh Yadav | Reliance Foundation |
| 56 | Mr. Sam Kapoor | IRRAD |
| 57 | Ms. Sachi Singh | Development Alternatives |
| 58 | Mr. Sanjay Khazanchi | Traunz Water Systems |
| 59 | Mr. A.K. Jain | Consultant |
| 60 | Mr. Zuhair J Kariapper | UNHABITAT, Sri Lanka |
| 61 | Mr. Raman Kant | NEER Foundation |
| 62 | Ms. Ginni Gold | Student |
| 63 | Ms. Surbhi Bhagat | Student |
| 64 | Mr. Nilesh Jain | Shubhashray Housing India |
| 65 | Mr. Shashank Mittal | Shubhashray Housing India |
| 66 | Mr. Furkan Ali | Student |
| 67 | Mr. Bijoy | IIMC |
| 68 | Ms. Venetia | Development Alternatives |
| 69 | Ms. Shambhavi | Development Alternative |
| 70 | Mr. Rakesh Khanna | TARA |
| 71 | Mr. Vijay Chaturvedi | TARA |
| 72 | Mr. Olaf Lohman | Consultant |
| 73 | Ms. Harshita | Development Alternatives |
| 74 | Ms. D Varsha | Development Alternatives |
| 75 | Ms. Shweta Banga | Development Alternatives |
| 76 | Mr. Siddharth Jain | TARA |

| | | |
|----|--------------------|--------------------------|
| 77 | Ms. Zeenat Niazi | Development Alternatives |
| 78 | Mr. Rajeev Pandey | Development Alternatives |
| 79 | Ms. Ranjeeta Ghose | Development Alternatives |
| 80 | Ms. Saumya Kumar | Development Alternatives |
| 81 | Ms. Payal Mittal | TARA |
| 82 | Ms Kavneet Kaur | Development Alternatives |
| 83 | Ms Deepti Roy | Development Alternatives |
| 84 | Ms Gitanjali Kumar | Development Alternatives |
| 85 | Mr. Jay Vikas | Development Alternatives |
| 86 | Ms. Kanika Kalia | TARA |
| 87 | Ms. Nidhi Naorem | Student |

Annexure-2

AGENDA

| 22 nd October 2013 (New Delhi) | |
|--------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------|
| 13.00 – 14.30 | Registration and Networking Lunch |
| 14.30 – 15.30 | Inaugural Session |
| 14.30 – 14.40 | Welcome Note - Mr. George C Varughese, President, Development Alternatives Group |
| 14.40 – 15.00 | Inaugural Address - Dr. Ashok Khosla, Chairman, Development Alternatives Group |
| 15.00– 15.10 | Key Note Address – Dr. Thirumalachari Ramasami, Secretary to the Government of India, Department of Science and Technology |
| 15.10 – 15.20 | Thematic Address on Safe Water for All and Always- Dr. K Vijay Lakshmi, Vice President, Development Alternatives Group |
| 15.20– 15:40 | Youth Perspective on access and sustainability – Film Screening |
| 15.40 – 16.00 | Tea Break |
| 16.00 – 17.30 | Technical Session I : Safe Water for All - Imperatives for Scale Science - Policy - Markets |
| | Chair: Mr. ShrashtantPatara, Senior Vice President, TARA |
| | Panelists: Dr Sanjay Bajpai, Department of Science & Technology Ms. Nalini Andrade, FemS3 Mr. Anuj Sharma, Piramal Water Pvt. Ltd |
| 17.30-17.40 | Vote of Thanks |
| 17.40 onwards | Tea accompanied by Exhibition |
| 23 rd October 2013 (TARAGram, Orchha) | |
| 11.00 | Arrival at TARAGram Orchha |
| 11.00 – 13.00 | TARAGram Mela (Platform to showcase water related efforts and initiatives) |

| | |
|------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 13.00 – 14.00 | Lunch |
| 14.00 – 15.30 | Technical Session II: Safe Water for the Last Mile - Technology Solutions |
| | Chair: Dr. ThuppilVenkatesh, Quality Council of India |
| | Panelists: Dr. Abhay Kumar, Eureka Forbes Dr. Debabrata Rautaray, Tata Chemicals Innovation Centre Dr. S. Khuntia, Ex-CSIR-IMMT, Bhubaneswar Ms. Kriti Nagrath, Development Alternatives |
| 15.30 – 15.50 | Tea Break |
| 15.50 – 17.15 | Technical Session III: Reaching the Last Mile - Models for Service Delivery |
| | Chair: Ms. Renu Khosla, CURE |
| | Panelists: Mr. Saroj Mohanta, MART Mr. Siddharth Bountra, TARA Mr. Dayanand Tandon, CREATE Mr. Sambit Lenka, Bottoms Up Consulting |
| 24thOctober 2013 (TARAGram Orchha) | |
| 07.00 – 12.00 | Technical Session IV: Experiences in Sustainability - Field Visit |
| | Mr. A.R. Shivakumar, Karnataka State Council for Science and Technology |
| | Dr. Shailendra Nath Pandey, Development Alternatives |
| 12.00 – 13.00 | Lunch Break |
| 13.00 – 14.30 | Technical Session V: Access to Safe Water by the Poor - Influencing Change |
| | Chair: Mr. Dwipal Kumar Bose, Behavior Change Communication Strategist |
| | Panelists: Mr. Ram Prasad, Final Mile Dr. Anil Gautam, People's Science Institute (PSI) Mr. Binaya Raj Shrestha, Practical Action - Nepal |

| | |
|---------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 14.30 – 14.50 | Tea Break |
| 14.50 – 15.30 | Technical Session VI: Safe Water for All - Enabling Policy Environment |
| | Input Presentation: Policy Imperative for Scale- Ms Krti Nagrath, Development Alternatives |
| | Discussants: Dr. Amit Nair, Consultant, World Bank Dr. Lam Dorji, Royal Society for Protection of Nature (RSPN), Bhutan Mr. S. Mohanabavan, District Secretariat, Sri Lanka |
| 15:50 – 16:00 | Vote of Thanks- Dr. Alka Srivastava, Development Alternatives |
| 16.00- 16:10 | Closing Remarks – Dr. K. Vijayalakshmi, Development Alternatives Group |
| 16.10 – 16.40 | High Tea |
| 16.40- 17:00 | Departure |



For further information please contact:

Development Alternatives

B-32, TARA Crescent, Qutub Institutional Area, New Delhi 110016, India

Tel: 91 11 2656 4444 / 2654 4100 / 2654 4200, Fax: 91 11 2613 0817

Email: taragramyatra2012@devalt.org

Website: www.taragramyatra.org, www.devalt.org