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## *Pumps, people and payments*

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## WATER, SANITATION, ENVIRONMENT and DEVELOPMENT

### Pumps, people and payments

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#### Community water supply programme: a setting

Betul District is one of the forward-looking districts of Madhya Pradesh, where NGO innovations and Partnership programmes with the District administration have always been in the forefront of development actions. The District is the centre of Evangelical Lutheran Church activities like Hospital Care Schools and Water Development Activities. A Hand Pump demonstration project was initiated in late 1987 by Government of M.P and UNICEF to assess the reliability and maintainability of India Mark III (VLOM) and improved India Mark II. Twenty Five handpumps of each type were installed and monitored and was found that India Mark III (VLOM) has a meantime failure of 18 months and almost 90% of the repairs could be carried out by a village level mechanic. This was the prompting factor for taking up large scale awareness and training for VLOM and sanitation interventions with communities spearheading the programme since early 1992. Betul was one of the 10 development Blocks of Betul District which was selected for this experiment. "Successful Community Water Supply Programmes (CWS) involve a combination of hardware and software technology and institutional/ organizational support elements matched in such a way that each community recognizes the benefits of improved supply and can afford at least the costs of operating and maintaining it and has the skills, spare parts, materials and tools available to sustain it. To maximise health benefits, parallel investments in health education and sanitation programmes should be planned alongside CWS improvements" (World Bank, 1987). As one of the activities in support of International Drinking Water Supply and Sanitation decade, VLOM was promoted as means of overcoming some of the major obstacles to sustainable water supply systems. Many past failures of CWS systems can be blamed on the inadequacies of central maintenance in which a Water authority despatches teams of skilled mechanics with motor vehicles from a base camp, often serving a large District, to respond to requests.

#### Response to handpump breakdowns

At present in Betul District there are about 5000 India Mark II Handpumps and about 120 Mark III. Each Block level mechanic is servicing about 400 Handpumps and it is physically not possible to attend to their breakdowns. The present system of informing the breakdown by the villagers is also not efficient.

Any villager can inform the Block level mechanic by writing the complaint in the Register kept in the Block.

In some Districts of M.P. some villagers telephone the Executive Engineers about the breakdown. The Block level mechanic keep looking at the register of complaints and decide to "attend" to them. In some places the weekly markets are used by the villagers to inform the breakdowns, where complaints are collected by the PHED. Thus there are different ways of informing the breakdowns by the villagers. This haphazard information system does not ensure quick and efficient response.

Villagers who are ignorant of the nature of the breakdown simply magnify the breakdown, even if the breakdown is minor. This is where the peoples knowledge of the Hand-pump becomes important. Given this present situation of Hand Pump functioning in Betul the process of building community awareness on the entire range of Water and Sanitation issues assumed urgency. Thus emerged the WESA (Water and Environmental Sanitation Awareness) concept in this experiment.

#### Demand generation through WESA

WESA was spearheaded by the NGO in Betul with the objective of:

- Building community awareness on water and environmental sanitation.
- Forming WATSAN committees in each of the 160 Project villages, involving 120,000 population.
- Selecting by the people of the village their own Hand Pump User Representatives, who will select village handpump mechanic team with two women and a man.
- Train the selected Hand Pump Mechanics in the operation, repair and maintenance of India Mark II and III (VLOM) pumps and help the Public Health Engineering Department in the conversion of Mark II pumps to Mark III and their subsequent maintenance.
- Building the village WATSAN fund for upkeep of Pumps and sanitation facilities like toilets, soakage pits, drainage, cattle troughs etc.
- Ensure the safe custody of Handpump spares and tool kits.

WESA process has created in the past months a tremendous sense of community participation for WATSAN

programme. (Village WATSAN Committees formed - 172; Orientation of WATSAN Committee members - 1215; Orientation of HP Users Representatives - 536, Women mechanics trained - 116, men mechanics trained - 44). The process has helped to evolve women as the principal actors in this whole experiment. The Village elderly men have come to believe that Water and Women go together because women's life is linked to water lifting, hauling, storing and using efficiently or inefficiently. One Village head man described such women as "Chaturis" (Intelligent). On the other hand village youth, though smart, cannot stick on to the village and even if trained, they would demand service charges.

Hence the selection of married women of the village for Hand Pump training emerged, married because they do not leave the village and go away and are available all 24 hours and at least part of the whole year! This helps the repair and maintenance of VL0M pump better.

WESA process highlighted in their awareness camps, use of Water, better handling of Hand Pumps, better drainage around the pump and platform, use of soakage pits, cattle troughs, use of toilets, and better disposal of waste. In some Camps women asked questions on use of bio-gas, improved chulas (stoves). The training was participatory and village men sat behind and enjoyed their women folk asking questions. The whole village had a festival look and the fliriting banners on safe water, posters on Hand Pump, wall paintings, videos and audios - all contributed to the effective communication of WATSAN messages. The video -Stree Shakti - (Women power) depicting how women can repair Hand Pumps was screened and many women got inspired to try their hands.

### Focus on women as pump mechanics

Early experiments in India on selection of Hand Pump mistries (mostly young boys repairing cycles, electric motors etc) as Hand Pump repairers and mechanics did not involve women in the entire range of WATSAN activities but confined only to repair of hand pumps. "Tilonia started experimenting to find out if it was possible for semi literate boys to repair the 300 handpumps the SWRChad installed. We trained them initially for a month. We found it just required some manual labour and common sense (Sanjit Roy, 1989)".

WESA's approach has been therefore different and took into account the "parallel investments" in health education and sanitation programs along side CWS improvements. As the WESA covered more villages, more requests came in for providing help to build pour flush toilets and improve the village drains. They found just in \$ 80 dry pit pour flush latrines can be built and the repair of the pumps does not need 'secret knowledge' and the villagers who were exposed to WESA orientation came forward with money to demand more knowledge and action to build toilets. Some villagers collected anything between \$10 to \$ 412 from the interested villagers to defray the cost of building

individual toilets and the cost of repair to Hand Pumps. They were not clear about the cost but their 'enthusiasm' was reflected in their contribution. Some villagers did not keep the WATSAN fund in Banks but loaned the amount to the needy on interest but with the assurance that when the money is needed they will return it to the treasurer, who was in some villages, a barber! Why a Barber because the barber would always have cash and will not run away from the village.

### VL0M training

As the demand generation on WATSAN caught up there were more requests from Village WATSAN committees to organise the training on Hand Pumps. Each Village WATSAN Committee nominated two village women and a man to undergo VL0M Training. When this training was launched two problems were faced (a) The existing Block mechanics of the PHED were little sceptical of such a training for village women. How can these semi literate women handle such a pump? Without the cooperation of Block mechanics such a training cannot sustain because they have to cooperate with these women and the women have to cooperate with Block mechanics to ensure functioning of pumps in the villages. There was also the fear of the unknown -these women would replace us, where will we go? Hence joint consultations were held with the Block mechanics under the leadership of the dynamic Executive Engineer of PHED of Betul District.

The NGO had already surveyed the Mark II Pumps which were not functioning and the Mark III (VL0M) pumps which were to be installed (converted from Mark II). The PHED had furnished the list of both types of Pump. The plan is to convert all Mark II pumps into VL0M (MarkIII). The training was hands-on. As the training progressed the women demystified the English names of the parts of the pump. The following local names were given by these women to several parts of the Mark III pumps.

1. Plunger Rod = Chotu Chad.
2. Plunger Yoke body = Pinjara (Cage)
3. Upper Valve = Mendki (Frog)
4. Washer = Bucket
5. Spacer = Katori
6. Follower = Glassi (Like a glass)
7. Check Valve body = Badi Pinjara
8. Check Valve = Badi Mendki (Big Frog)
9. Push Rod = Choti kila kanta.
10. Cylinder Body = Pyle (measuring grain)
11. Inspection Cover bolt = Tala
12. Inspection Cover = Dhakan
13. Double end spanner = 19 & 17 Chawi
14. Head = Peti.

The aim of VLOM concept has been:

Pumps are easily maintained by a village care taker, requiring minimum skills and few tool.

- Manufactured in-country, primarily to ensure the availability of spare parts
- Community choice of when to service pumps.
- Community choice of who will service pumps
- Direct payment to the repairers by the community (World Bank, 1987, Page 13.)

In the extended VLOM concept M means management of maintenance.

The VLOM training in Betul recognised this M factor from the beginning and the training style was oriented to drive home the M factor all the time with the trainees. In Betul District the PHED through their Block Mechanics had adopted the breakdown repair as the most common form of maintenance. As a result of this training large number of Hand pump mechanics, nominated by the village WAT-SAN committees, came to know about the preventive maintenance, like simple greasing of the chain, tightening of nuts and bolts, which has helped to spot the problem in good time.

### Assessment of the VLOM training

How do we assess the knowledge of these women/men trainees in VLOM pump? The NGO in consultation with the PHED Executive Engineer decided to provide the Spares and tool boxes in joint custody of the village Panchayat and Village WATSAN Committee, and these were to be used by the trained mechanics of that village.

We adopted a simple test. We spread all the parts of India Mark III pump on a table. We called each of the trained team (Two women and a man). We picked some part of the VLOM and asked the women to join them in 3 minutes. They did it with perfection. On one occasion we mixed up the parts of Mark II and Mark III (VLOM) and asked them to join. They could tell us they are separate and cannot be joined! Such was their knowledge of VLOM parts and the whole.

### The future

There are some constraints in the whole experiment. The conversion of Mark II into Mark III cannot be done in all cases since the Inside Diameter of borewell/tubewell fitted with IM II pumps do not match with the Mark III pumps. Spare parts and tool kits have to be properly distributed to all the trainees so that they feel that they are "empowered". The partnership between State PHED, NGO and UNICEF has to be strengthened in order to sustain the future VLOM strategy in the remaining blocks of Betul District. Parallel investments in sanitation activities have to be stepped up to have better mileage for the communities in WATSAN tasks.

### Reference

- A) Charles Kerr, Community Water Development, Intermediate Technology Publications, 1989. See Sanjit Roy, Page 179
- B) Saul Arlosoroff et al, Community Water Supply, The Handpump Option, World Bank - 1987

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