Rain Water Harvesting as part of Arsenic Mitigation

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HISTORY of ARSENIC IN MYANMAR

- 2000 SC (UK) found Arsenic in STWs, Thabaung
- 2000 March. Dr. Khin Maung Lwin (CHEB), Dr. Deepak (UNICEF) and Mr. John Collett (SC/ UK) organize a team to mitigate As.
- Dr. KML and Mr. Guy Scandlan visited Talokhtaw
- A Water Quality Task Force was formed with the guidance of U Aung Gywe (WHO) and U Saw Christopher Maung (YIT)
Arsenic in STW of Maryland RHC
ACTIVITIES IN 2000

- WQTF decided to check 11 parameters
- Portalab was imported by UNICEF
- DDA, WRUD tested As in Delta of Ayeyarwaddy, Kaladan, Sittaung and Mandalay Division and found As. and colored red to the >50 ppb on the Map
- MOH stop KML to communicate about As
- SC/ UK blamed JC who went beyond MOU
ACTIVITIES IN 2000 AND 2001

• WQTF decided to continue
• Support in developing Arsenator test kit
• Prof. Cosmos from UK corrected the Kit
• Blanket testing started by DOH/ OH
• Sanitation formats also used for testing
• CHEB/ DHP, OH/ DOH, DDA, WRUD and UNICEF visited Kyonpyaw with high As.
Arsenicosis in Bangladesh
FIRST ARSENICOSIS CASE

- Daw Sein Toke from Thaung gyi village
- KML and Dr. Khin Myat Htun from DMR brought the nail samples and tested in Kholcutta through Dhaka Civil Hospital
- Nail As. +ve, Skin changes, drinks STW water >50 ppb for more than 6 months
- No history of taking traditional medicines
- DMR joined for surveying As. (7) cases
First Case in Kyonpyaw
Rain Drops Skin Changes at The Back
MITIGATION TEAM FORMED 2001

- OH/ DOH for As. tests with KITS + GPS
- DMR for detecting As. cases
- ESD/ DOH for As. reduction techniques
- DDA for deeper tube wells and protected ponds and rain water harvesting (Pots)
- WRUD for DATA control
- CHEB/ DHP for CBAM, Bact. Test Kits applied
- UNICEF for Logistic Support
PRESENTING CASES IN CONGRESS

SYMPOSIUM ON DETERMINATION AND ANALYSIS OF ARSENIC & ENVIRONMENTAL HEALTH

SPONSORED BY AMT&T
3 KOLSHI TECHNIQUE BY ESD
INTRODUCING GPS BY UNICEF
ARSENIC IN WATER

- 4823 ppb – Magyithon – Padaung
- 3558 ppb – Oakshitpin – Padaung
- 2195 ppb – Dalapan – Pantanaw
- 2123 ppb – Pado – Kyauktaga
- 2094 ppb – Shwe Indon – Daik Oo
- 2015 ppb – Gyochaung – Pantanaw
- Mmr (50 ppb), WHO (10 ppb), Jap (7 ppb)
MEASURES TAKEN IN 2002

• Go to the villages with high arsenic in new townships
• Go deeper to the community members introducing SODIS/ WATER GUARD/ Arsenic Reduction techniques + 4 CLEANS
• Facilitate better control over deeper tube well provisions
• Promote cleaner rain water harvesting
MARKETING TOOL (2002)
THE FIRST CBAM VILLAGE

- Aung Thabyay village of Zawgyikwin VT, Zalun. Ayeyarwaddy Division
- More than 90% of STW contains >50 ppb
- The highest is 564 ppb out of 25 STW
- Ponds and Rain Water harvesting were the choices for immediate solution
- Sedimentation overnight is the alternative for some TW water just above 50 ppb As.
What is CBAM

- Formulated in year 2000
- Started in 2002
- Community-based health promotion
- Under the umbrella of 4 cleans
- It is a holistic approach
- Based on existing water utilization patterns
Process of Community-based Arsenic Mitigation Project

- Formative study to diagnose behaviors
- Advocacy and planning at township level
- Community self-surveys
- Diagnosing water utilization patterns
- Awareness on arsenic content >50ppb
- Selecting safe water options & act
- Household disinfections if needed
- In the context of 4 cleans
COVERAGE

• All arsenic contaminated areas >50ppb in Ayeyarwaddy and Bago Didisions

• Priority given to villages with >50% of water sources with >50ppb

• About 300 villages (2002-2010)

• Prefer local media and print media

• Still facing with challenging counteractions
Education Materials

- Pamphlet
- Poster
- Booklets
- 4 Cleans videos/cartoons
- Others
Review meetings (Central, local)
ADVOCATE FOR

• Township support for CBAM
• Networking/ monitoring and supervision
• Arsenic and Arsenicosis awareness for community-based diagnosis and treatment
• Successful CBAM
• Mobilizing resources for safe water options
• Collaboration with UNICEF/ MOH/ DDA/etc
Training to get local experts
ACT ON

• Community control over water sources
• Community-based arsenic mitigation
• Safe Water Options
• Community actions to get safer options
• Improved water utilization patterns
• Safe and hygienic food, personal hygiene and better environment with clean latrines
Household Disinfection
CONSTRAINTS

* Water Quality Standards not yet established
* No Comprehensive Legal support
  • Support given is not attractive
  • There are counter-communications
  • Problem added to food safety issues
  • Solution should be holistic
  • Add more problem by traditional medicine
  • Mass media usage has limits
  • Deeper tube wells tested As. due to seepage?
  • Some Partners add more problem than solution
CONCLUSION

- Harvesting Rain is the key solution for Community-based Arsenic Mitigation
- Keeping Rain Water safely is more important
- Protecting germs and breeding of mosquitoes is the most important