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Effective Household Water Treatment and Roles of Women in Flood Emergency

**Bilqis Amin Hoque, Sufia Khanam, Richard Johnston, A Salam,
Abu Zahid Shipon and Md. Abubakkor Siddik**

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Introduction

- Frequency of extreme floods and cyclones are increasing
- When the existing drinking water systems are damaged/affected; risks for exposure to drinking microbiologically contaminated water increases significantly in rural areas of developing countries.
- Post flood/cyclone epidemics of water-borne diseases have been common and contributing significantly to the health burdens
- Point-of-use device (POU) has been a key relief item over ages



Key Issues and Challenges

- The investment needs will increase with the increase in frequency of disasters.
- The length of emergency water period and its complexities can vary with the impacts of disaster (local contexts, types of disaster, etc)
- Emergency is a managerial term, demanding decision and follow-up in terms of extra-ordinary measures
- Usually household POU is regarded as a simple approach. It is rarely followed
- But POU is a technology; local contexts will determine its performance.



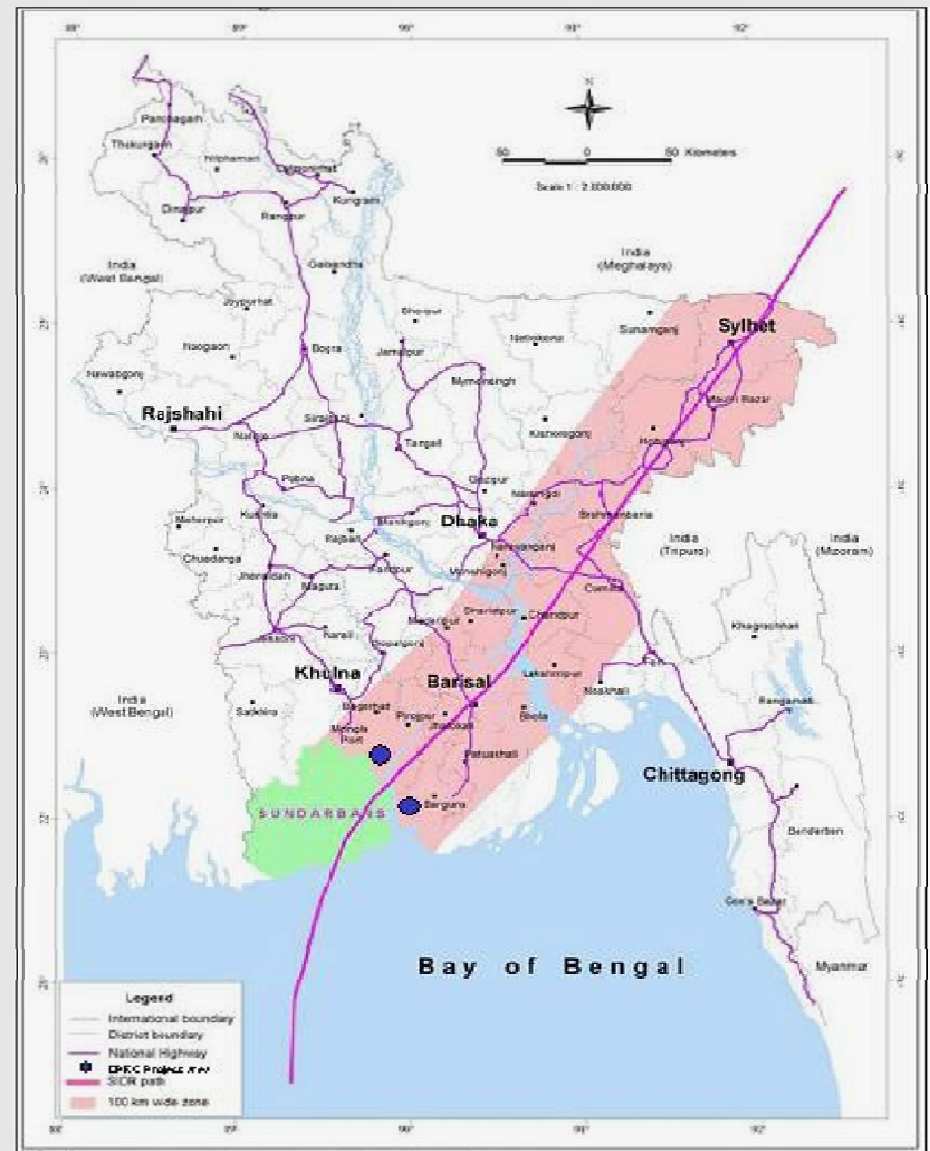
Research objective

- Revisit scopes for POU methods used in Bangladesh

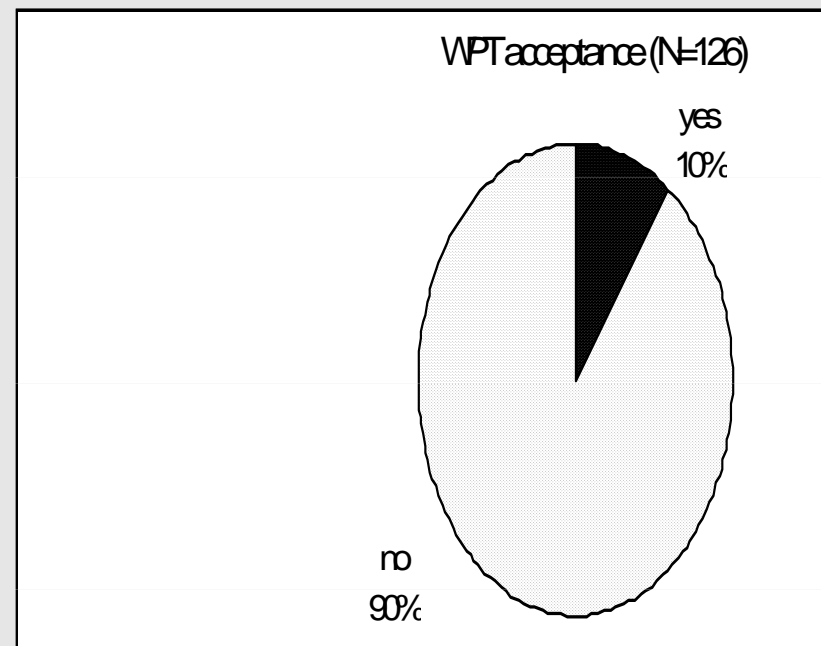
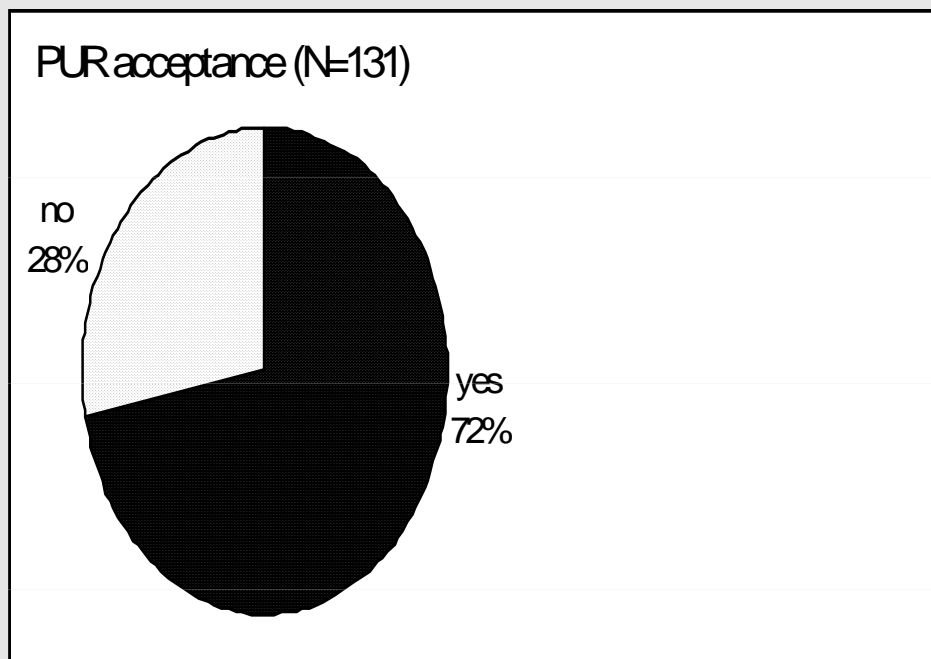


Methodology

- Cyclone Sidr (category 5) hit Bangladesh on November 15 2007, causing a storm surge of up to 5m
- Two kinds of POU's ; PUR (new) and WPT (commonly distributed)
- Housewives of PUR recipients were provided with training
- Data collected by: (i) interviewing about use, knowledge, acceptance (ii) water quality: physical, RCL and TTC and (iii) diarr. prevalence among PUR, WPT and Comparison children

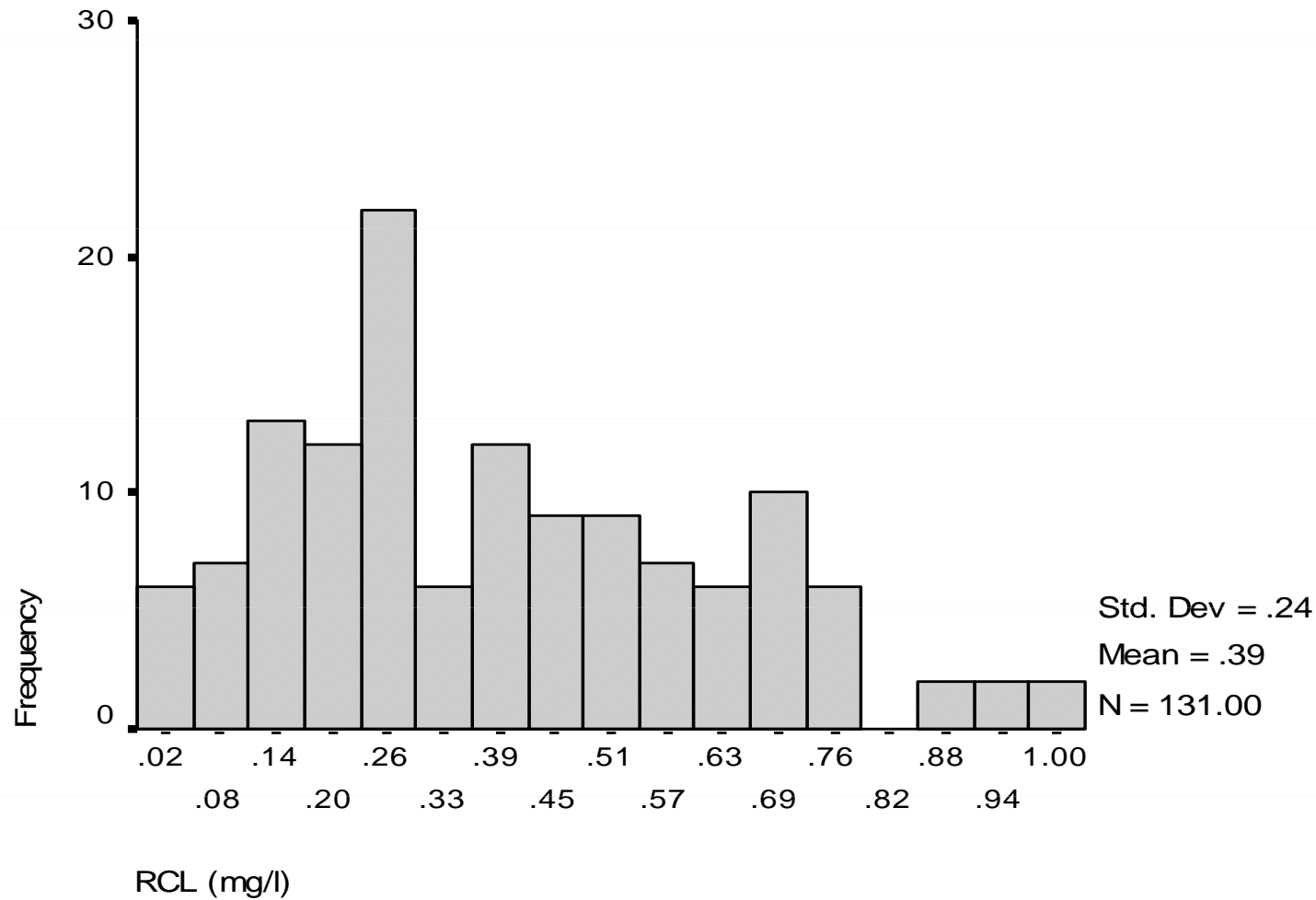


Acceptance of POUs

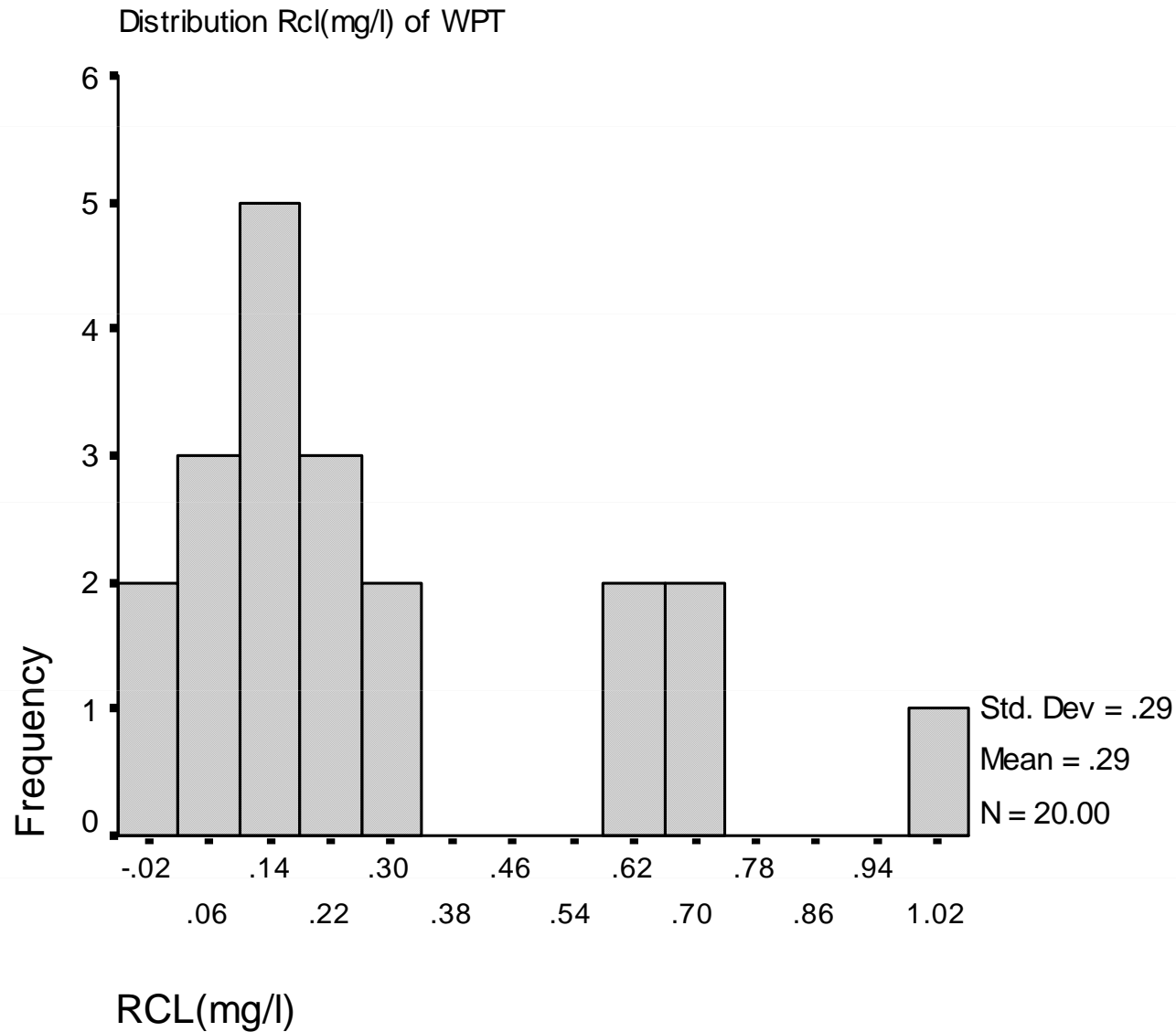


Concentration of residual chlorine (RCL) in PUR treated stored water samples

Distribution RCL (mg/l) of PUR Treated Water



Concentration of residual chlorine (RCL) in WPT treated stored water samples



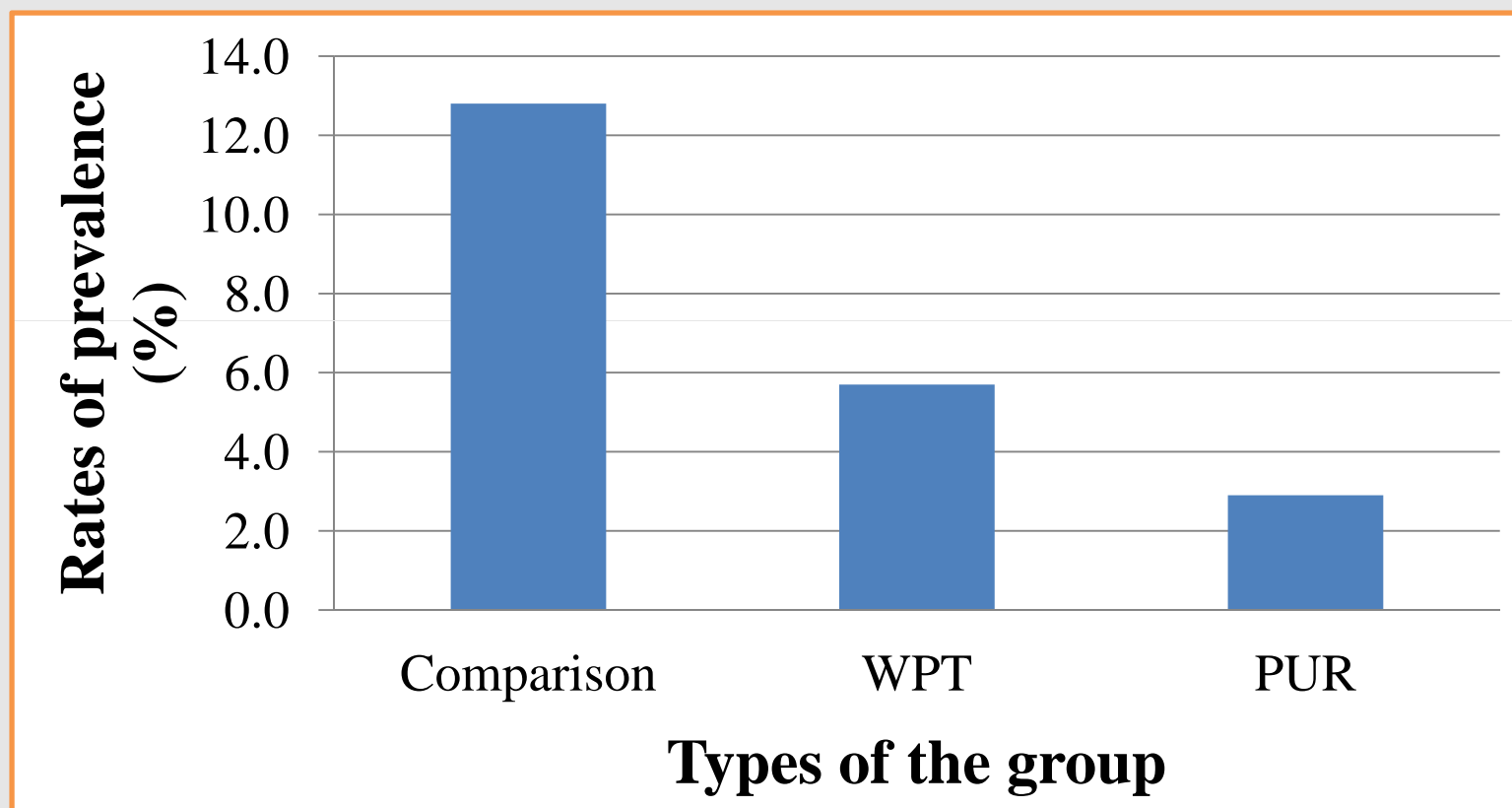
Level of Schooling of Housewives (recipients) and presence of POU treated water

Variable	PUR (%)		WPT (%)	
	Present	Absent	Present	Absent
Households with samples (N)	131	51	20	173
<i>Education:</i>				
No Schooling	19	11	5	15
Primary (1-5 yrs)	43	57	10	54
> Primary	38	32	85	31

There were statistically significant differences between the proportions of schoolings in both WPT present and WPT absent groups



Rates of 24 Hour Prevalence of Diarrhea Among Children in POU and Comparison Groups



RR of PUR= 0.23; 0.07-0.73

RR of WPT= 0.45; 0.19-1.03



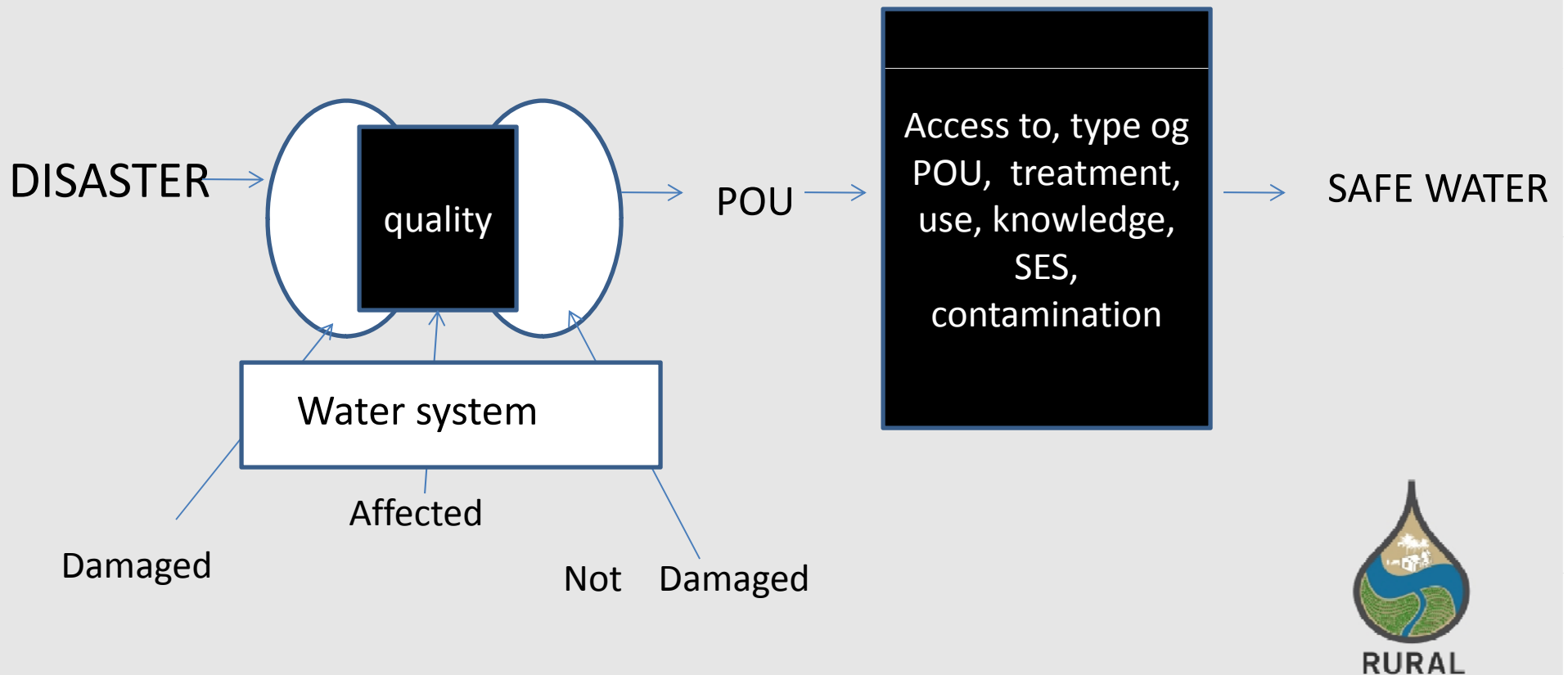
Conclusions

- Reconfirmed household POU device as an effective emergency water approach, provided it is used properly
- PUR was a new method and required more work than the WPT; rate of use of PUR was higher than WPT.
- Housewives /women managed the POUs
- Training on use of POU was rare
- Level of correct knowledge about use of POU was higher among PUR than among WPT users.
- Probably training on PUR contributed to its higher rate of use compared to that of WPT
- POUs were not adequately distributed
- Overall; management of POU was weak



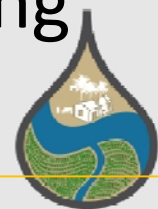
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Conceptual Framework



Recommendations

- Further develop POU devices (various kinds of appropriate devices and not only low-cost) and its management system (needs, promotion, access to/distribution/stock piling, monitoring, upgrading , etc. in line with comprehensive disaster management)
- Build capacity of women about household management of POUs for emergency drinking water based on local contexts



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Thank You

