

ACCESS TO CLEAN DRINKING WATER

Accomplishments

- Establishment of project sites and identification of groundwater problems
- Interlaboratory comparison exercises for isotopes and chemistry
- Geochemical and hydrogeological characterization of project sites with primary and secondary data
- 1st Scientific Assessment Workshop; Ho Chi Minh City; 27 Sept.-8 Oct. 1999
PHASE I – Project Assessment
PHASE II – Numerical Modelling

Major Activities

- Field investigation
- Sampling
- Physico-chemical & isotopic analyses
- Numerical modelling

Tentative Schedule of forthcoming regional events

- Group training course on numerical modelling; February 2000; Thailand
- Information dissemination seminar for water managers; April 2000; South Korea
- 2nd assessment meeting; October 2000; Philippines
- 3rd assessment meeting; October 2001; Pakistan

Success Criteria

1. Establishment of priority study areas and definition of hydrogeological problems which isotopes can investigate and provide mitigating measures. It includes a team of nuclear and end-user institutes responsible for carrying out field investigations, interpreting data, and generating reports.
2. Identification of RRU's which can provide isotope analytical services, expertise, and hosting of manpower activities either as individual or group training.
3. Establishment of quality assurance mechanisms for data generated and interpreted.

4. Manpower development in isotope applications and numerical flow & transport modelling.
5. Implementation of annual assessment meetings to evaluate the progress and outputs of the project.
6. Generation of scientific documents which are reference to decision-making for managing water resources and their development.

RRU's

KAERI, South Korea
PINSTECH, Pakistan
BARC, India

SUMMARY OF ACTIVITIES PLANNED AND COMPLETED TO December 1999

Output 1. 1 (Access to Clean Drinking Water)

Activities	Date/Duration	Status
<i>National</i>		
1. Project mobilization	Q2-Q3, 1998	Done
2. Collection of secondary data	Q2, 1998 – Q1, 1999	Done
3. Design of sampling programme	Q1, 1999	Done
4. Field investigation and analyses	Q1-Q4, 1999 and on-going	On-going
5. Data interpretation	Q1-Q4, 1999 and on-going	On-going
6. Numerical modelling	Q3, 1999 and on-going	On-going
<i>Regional</i>		
7. Field TC on application of isotopes and chemical techniques to groundwater problems	Q4, 1998	Done
8. Interlaboratory comparison For isotopes For chemistry	Q4, 1998 – Q2, 1999 Q2-Q3, 1999	Done Done
9. Group training course on numerical modelling	Q3, 1999, Q1, 2000	Done, on-going
10. Group assessment meeting	Q3, 1999	Done
11. Expert missions	Q4, 1998 to Q2, 1999	Done

APPENDIX 1

Hydrological problems and site conditions in respective countries:

Hydrological problem	Site conditions	Country
Fresh water supply and sustainability	<ul style="list-style-type: none"> • Volcanic rocks with interbedded • Alluvial • Coastal area 	Philippines Pakistan Indonesia
Groundwater salinisation	<ul style="list-style-type: none"> • Quaternary alluvial deposits • Quaternary sediments • Delta deposits • Alluvial • Coastal area 	Sri Lanka India Vietnam Pakistan Indonesia
Groundwater contamination <ul style="list-style-type: none"> • Nitrate • Arsenic 	<ul style="list-style-type: none"> • Quaternary deposits • Granitic terrain • Alluvial • Colluvial deposits • Alluvial • Alluvial 	China South Korea Pakistan Thailand Bangladesh India
Evaluation of groundwater system	<ul style="list-style-type: none"> • Quaternary deposits • Karst aquifer • Quaternary deposits • Alluvial • Volcanic rocks with interbedded sedimentary rocks • Granitic terrain 	Thailand India Malaysia Pakistan Philippines South Korea

APPENDIX 2

PROPOSED WORKPLAN INCORPORATING RECOMMENDED ADDITIONAL ACTIVITIES

Revised Work Plan:

Activities	1998	1999	2000	2001	2002
<i>National</i>					
1. Project mobilization	x				
2. Collection of secondary data	x				
3. Design of sampling program		x			
4. Field investigation & analysis		xxx	xxxx	xxxx	xxxx
5. Data interpretation		x	xx	xx	xx
6. Numerical Modelling		x	x		x
<i>Regional</i>					
7. Field training course on application of isotopes and chemical techniques to groundwater problems	x				
8. Interlab comparison					
For isotopes	x	x	x		
For chemistry		xx	xx		
9. Group training on numerical modelling		x			
10. Group training on geochemical modelling			x		
11. Project assessment meetings		x	x	x	x
12. Information dissemination					
National seminars			xx		
Regional seminars			x		
13. Expert missions		xx	xx	x	x