

Training Needs Assessment in IWRM in the Water Sector in Sri Lanka

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Justification

To develop a long-term programme for capacity building in IWRM, a systematic study is required to assess the institutional training needs in the water sector

Methodology

- Review previous studies to design the methodology (UNESCO-IHE Study in UN-ESCWA, 2004)
- Develop the questionnaire
(Training needs assessment in irrigation sector, India)
- Send 350 to relevant organisations/individuals
- Received 149 (from all parts of the country including north and east)

Table 1. Nature of Organization

Organization	%
Central Government	66
Local Authority	7
Education	13
NGOs	12
Private	1

Table 2. Institutional Affiliation

Institution	%
National Water Supply and Drainage Board	15.1
Irrigation Department	19.2
Mahaweli Authority of Sri Lanka	17.1
Universities	13.0
Research Institutions	7.5
Non Governmental Organizations (NGOs)	12.3
Other Government Institutions	15.8

Table 3. Designation of respondents

Designation	Water Institutions¹	Other Institutions²	NGOs	Water Sector³
Administrator	24	17	17	21
Engineer	56	11	17	34
Technical Officer	11	9	-	9
Academics	-	34	-	13
Scientists/Researcher	4	19	6	9
Project Manager	5	8	61	13

1/ Water Institutions includes National Water Supply and Drainage Board, Irrigation Department and the Mahaweli Authority of Sri Lanka

2/ Other institutions includes all the government and semi-government institutions excluding Water Institutions defined above and NGOs

3/ Respondents in all institutions working in the water sector

Table 4. Academic Qualifications

Educational Level	Water Institutions	Other Government Institutions	NGOs	Water Sector
Secondary School	1	0	6	1
Diploma	16	8	0	11
Graduate	32	28	56	34
Postgraduate	48	62	44	53

Table 5. Age distribution

Age group	Water Institutions	Other Government Institutions	NGOs	Water Sector
< 30 years	0	13	39	10
30-40	32	26	50	32
40-50	52	30	6	38
> 50 years	20	28	6	21

Table 6. Gender Distribution

Male - 84%

Female – 16%

Table 7. Previous training in water management and Integrated Water Resources Management

Institutions	Water Management		Integrated Water Resources Management	
	Participated	Not Participated	Participated	Not Participated
Water Institutions	63	36	29	69
Other Government Institutions	50	50	25	75
NGOs	67	33	11	89
Water Sector	57	43	25	74

Table 8. Knowledge on the Concept of Intergraded Water Resources Management

Institutions	Description	Sufficient Knowledge	Not Sufficient Knowledge	None	Training Need (Col. 4 & 5)
Water Institutions	Water Management	37	61	1	62
	IWRM	13	72	15	87
	Benefits of IWRM	11	68	19	87
Other Government Institutions	Water Management	30	66	2	68
	IWRM	17	53	28	81
	Benefits of IWRM	17	51	30	81
NGOs	Water Management	17	67	17	84
	IWRM	17	50	33	83
	Benefits of IWRM	22	50	28	78
Water Sector	Water Management	32	64	3	67
	IWRM	15	62	22	86
	Benefits of IWRM	14	60	24	85

Table 9. Knowledge on Water and Agriculture

Institutions	Description	Sufficient Knowledge	Not Sufficient Knowledge	None	Training Need (Col. 4 & 5)
Water Institutions	Water requirements of crops	31	57	12	69
	Irrigation methods	28	63	9	72
	Rain water harvesting methods	23	69	8	77
Other Government Institutions	Water requirements of crops	25	47	26	73
	Irrigation methods	34	45	19	64
	Rain water harvesting methods	32	53	13	66
NGOs	Water requirements of crops	17	67	17	84
	Irrigation methods	17	50	33	88
	Rain water harvesting methods	22	50	28	78
Water Sector	Water requirements of crops	26	54	17	71
	Irrigation methods	29	56	13	69
	Rain water harvesting methods	27	62	11	73

Table 10 Knowledge on water pollution

Institutions	Description	Sufficient Knowledge	Not Sufficient Knowledge	None	Training Need (Col. 4 & 5)
Water Institutions	Methods of water pollution	32	60	8	68
	How to prevent water pollution	25	63	12	75
Other Government Institutions	Methods of water pollution	45	51	2	53
	How to prevent water pollution	32	62	4	66
NGOs	Methods of water pollution	44	50	6	56
	How to prevent water pollution	33	61	6	67
Water Sector	Methods of water pollution	39	55	5	61
	How to prevent water pollution	28	63	8	71

Table 11. Knowledge on waste water treatment

Institutions	Description	Sufficient Knowledge	Not Sufficient Knowledge	None	Training Need (Col. 4 & 5)
Water Institutions	Physical properties	16	59	25	75
	Chemical properties	13	56	31	87
	Biological properties	11	55	35	90
	Waste water treatment methods	19	59	21	80
	Indigenous knowledge of using waste water	4	64	32	86
Other Government Institutions	Physical properties	25	55	19	74
	Chemical properties	25	57	17	74
	Biological properties	15	64	19	83
	Waste water treatment methods	19	66	13	79
	Indigenous knowledge of using waste water	9	70	19	89

Table 11. Knowledge on waste water treatment Cont....

NGOs	Physical properties	44	50	6	56
	Chemical properties	33	61	6	67
	Biological properties	28	67	6	73
	Waste water treatment methods	28	67	6	73
	Indigenous knowledge of using waste water	11	78	11	99
Water Sector	Physical properties	22	57	20	77
	Chemical properties	20	57	20	81
	Biological properties	15	60	25	87
	Waste water treatment methods	19	63	17	81
	Indigenous knowledge of using waste water	7	67	25	93

Table 12 Knowledge on water supply, sanitation and health

Institutions	Description	Sufficient Knowledge	Not Sufficient Knowledge	None	Training Need (Col. 4 & 5)
Water Institutions	Relation between health and sanitation	31	63	7	70
	How to improve health and sanitation through water management	15	75	11	86
Other Government Institutions	Relation between health and sanitation	36	60	2	62
	How to improve health and sanitation through water management	19	72	8	80
NGOs	Relation between health and sanitation	56	44	0	44
	How to improve health and sanitation through water management	33	67	0	67
Water Sector	Relation between health and sanitation	35	60	5	65
	How to improve health and sanitation through water management	18	73	8	81

Table 13 Knowledge on water and ecosystem

Institutions	Description	Sufficient Knowledge	Not Sufficient Knowledge	None	Training Need (Col. 4 & 5)
Water Institutions	What is an ecosystem	17	67	16	83
	Importance of ecosystem	15	71	15	86
	Need for protection of ecosystem through water mgt	12	68	20	88
Other Government Institutions	What is an ecosystem	28	60	9	69
	Importance of ecosystem	40	51	8	59
	Need for protection of ecosystem through water mgt	25	62	11	73
NGOs	What is an ecosystem	33	50	17	67
	Importance of ecosystem	33	50	17	67
	Need for protection of ecosystem through water mgt	17	56	28	84
Water Sector	What is an ecosystem	23	62	14	76
	Importance of ecosystem	26	60	13	73
	Need for protection of ecosystem through water mgt	17	64	18	82

Table 14 Knowledge on water demand

Institutions	Description	Sufficient Knowledge	Not Sufficient Knowledge	None	Training Need (Col. 4 & 5)
Water Institutions	Estimation of water demand	55	41	4	45
	Balancing water supply and demand	52	40	8	48
Other Government Institutions	Estimation of water demand	19	70	9	79
	Balancing water supply and demand	15	68	15	83
NGOs	Estimation of water demand	22	67	11	78
	Balancing water supply and demand	22	67	11	78
Water Sector	Estimation of water demand	38	55	7	62
	Balancing water supply and demand	34	54	11	65

Table 15. Knowledge on Ground water management

Institutions	Description	Sufficient Knowledge	Not Sufficient Knowledge	None	Training Need (Col. 4 & 5)
Water Institutions	Determination of safe abstraction of ground water	17	63	20	83
	Factors affecting ground water quality	17	65	17	82
	Methods of ground water pollution	23	61	16	77
	Effects of over using ground water	28	55	17	72
Other Government Institutions	Determination of safe abstraction of ground water	17	62	19	81
	Factors affecting ground water quality	32	57	9	66
	Methods of ground water pollution	38	56	6	62
	Effects of over using ground water	32	60	6	66

Table 15. Knowledge on Ground water management Cont....

NGOs	Determination of safe abstraction of ground water	6	78	11	89
	Factors affecting ground water quality	28	61	11	72
	Methods of ground water pollution	22	67	6	73
	Effects of over using ground water	28	67	6	73
Water Sector	Determination of safe abstraction of ground water	15	64	19	83
	Factors affecting ground water quality	23	62	13	75
	Methods of ground water pollution	28	60	11	71
	Effects of over using ground water	30	58	11	69

Table 16. Responses on water and economy

Institutions	Description	Yes	No	Not certain
Water Institutions	Water has an economic value	95	3	3
	There is a relationship between economic growth and water management	44	11	44
	Lack of water is a reason for poverty	67	16	16
Other Government Institutions	Water has an economic value	91	2	6
	There is a relationship between economic growth and water management	42	13	42
	Lack of water is a reason for poverty	66	8	19
NGOs	Water has an economic value	94	0	6
	There is a relationship between economic growth and water management	61	6	33
	Lack of water is a reason for poverty	72	11	11
Water Sector	Water has an economic value	93	2	4
	There is a relationship between economic growth and water management	45	12	42
	Lack of water is a reason for poverty	66	13	17

Table 17 Responses on the willingness to introduce water charges for sectoral use

Institutions	Description	Agreed	Not agreed	Not answered
Water Institutions	Industrial water use	95	3	2
	Domestic water use	80	20	0
	Agricultural Water use	67	32	0
Other Government Institutions	Industrial water use	96	2	4
	Domestic water use	68	28	4
	Agricultural Water use	62	36	2
NGOs	Industrial water use	83	0	17
	Domestic water use	61	39	0
	Agricultural Water use	56	39	0
Water Sector	Industrial water use	93	2	5
	Domestic water use	74	25	1
	Agricultural Water use	64	34	2

Table 18. Institutional reforms and private sector participation

Institutions	Description	Yes	No
Water Institutions	Need for institutional reform	91	9
	Like to involve private sector	35	65
Other Government Institutions	Need for institutional reform	96	4
	Like to involve private sector	61	39
NGOs	Need for institutional reform	94	6
	Like to involve private sector	78	22
Water Sector	Need for institutional reform	93	7
	Like to involve private sector	50	50

Reasons for rejecting the private sector participation

- Profit motivated and less concern for welfare of the society
- Inability guarantee equity
- Less concern for ecosystem
- Water is a common property (belongs to humans as well as animal), and therefore need to be managed by the state
- Lead to exploitation of resources (less sustainability)
- Will not think about future generation
- Less importance for agricultural use which lead to unrest among farming community
- Water resources should be managed by local people

Table 19 Awareness on Water Policy

Institutions	Aware	Not aware	Not answered
Water Institutions	57	36	7
Other Government Institutions	49	43	8
NGOs	61	33	6
Water Sector	54	39	7

Table 20 Responses on the equal opportunity for women in Water Management

Institutions	Has equal opportunities	Has no equal opportunities
Water Institutions	88	9
Other Government Institutions	96	6
NGOs	89	11
Water Sector	89	9

Reasons for the presence of less number of women in the water sector

- There is a significant number of women professional in the water sector, but opportunities to participate in decision making is very limited
- Preferential treatment of men in recruitment
- Gender discrimination
- Less number of women (professionals?) are involved in rural agriculture
- Involvement of women in agriculture and industry are very limited

Table 21. Types of training programmes on IWRM

Institution	Like to be trained in IWRM	Level of training				
		Postgraduate	Diploma	Short courses	Workshop	Others
Water Institutions	100	45	20	60	3	3
Other Government Institutions	92	40	6	47	4	0
NGOs	100	22	33	67	6	6
Water Sector	97	40	16	56	3	2

Table 22. Preferred area of training in IWRM

Description	Water Institutions	Other Government Institutions	NGOs	Water sector	Overall ranking
Concept of IWRM	25	11	33	21	6
Enabling environment and institutional roles	19	17	11	17	7
Legislative and institutional framework	16	6	28	13	9
Economic dimensions of IWRM	15	11	11	13	9
Stakeholder participation	4	8	0	5	15
Water supply, sanitation and health	23	19	33	22	5
Environment and IWRM	17	34	22	25	2
Balancing water supply and demand	13	9	11	11	11
Water demand modeling and management	27	21	11	23	3
Cost and pricing of water	15	6	6	10	13
Public and private partnership in water management	12	8	17	11	11
Ground water and IWRM	21	43	22	30	1
Agriculture and IWRM	12	32	39	23	3
Management of shared water resources	12	11	0	10	13
Poverty reduction and IWRM	13	15	17	14	8
Other	0	4	0	1	16

Comparison with ESCWA study

Sri Lankan Study

- Ground water and IWRM
- Environment and IWRM (7)
- Agriculture and IWRM (11)
- Water demand modeling and management
- Water supply, sanitation and health (8)
- Concept of IWRM

ESCWA region study

- Ground water and IWRM
- Concept of IWRM
- Demand modeling and management
- Balancing supply and demand
- Enabling environment
- Shared water resources

Comparison with Farmers study

Professionals

- Ground water and IWRM
- Environment and IWRM
- **Agriculture and IWRM**
- Water demand modeling and management
- **Water supply, sanitation and health**
- **Concept of IWRM**

Farmers

- Poverty reduction and IWRM
- **Concept of IWRM**
- Legislative and institutional frame work
- Economic dimensions of IWRM
- **Agriculture and IWRM**
- **Water supply, sanitation and health**

Acknowledgement

CAPNET

Thank You