

Emerging issues in the implementation of Irrigation & Drainage sector reforms in Sindh, Pakistan

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Background and objectives

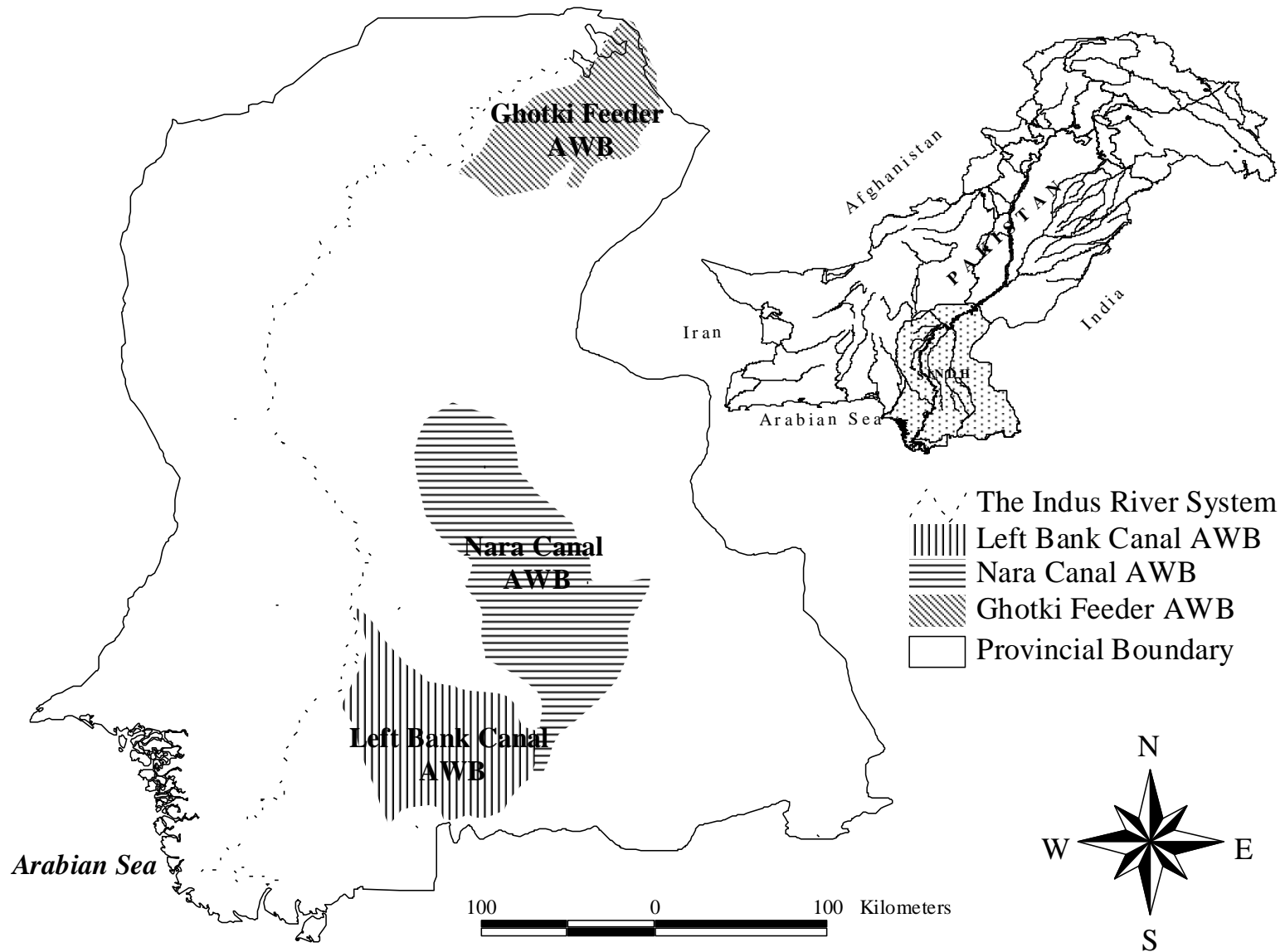
- Structural: Irrigation infrastructure 😊
- Non-structural:
 - Operation & Management ☹️
 - Equitable distribution of irrigation ☹️
- Institutional Reforms: a three tier system 😊
 - PIDA, AWBs and FOs & WUA
- Institutional Reforms in Sindh !

PIDA: Provincial Irrigation &
Drainage Authorities

AWB: Area Water Board

FO: Farmer Organizations

WUAs: Water User Associations



Irrigation Network of Sindh Province of Pakistan showing location of the studied AWB

Methodology

- Descriptive analysis of FO profiles
- Face-face and telephonic Interviews with SIDA and irrigation officials
- Informal discussion with FO Management Committees
- Literature Survey

Results: Overall Implementation

Overview of the implementation of Institutional Reforms in Sindh Province

Progress indicator	Target and achievements	Remarks on completion
Formulation of Provincial Irrigation & Drainage Authority	- Sindh Irrigation and Drainage Authority has already been formed at the provincial level.	Completed
Formulation of Regulatory Authority (RA)	- Appropriate formation is still awaited. Currently, SIDA is functioning as RA.	Not completed. RA is operational through ad hoc arrangements
Formulation of AWBs	- Out of 13 AWBs, only three (Figure 1) could be formed as of 2009. No progress has been made thereafter.	23 % completed
Formulation of FOs in AWBs	- Out of about 1,400 FOs, about 338 have been formed in the three AWBs. Some 16 FOs have also been formed on tertiary channels of non-AWB canals	25 % completed
Irrigation & Drainage Management Transfer (IDMT) to FOs	- Out of 359, about 259 FOs have assumed IDM responsibility. About 94% FOs of NC-AWB, 38% FOs of GC-AWB and 60% FOs of LBC-AWB had been transferred the I&D management responsibility.	For 3 AWBs, the target is 73 % completed. At the provincial level, only 18 % Completed

Notes: Calculations are based on FO Profile 2009. There is no substantial progress in FO formation thereafter

Results: Overall Implementation

AWB wise details of FO formation and IDMTs

Year	NC-AWB		GC-AWB		LBC-AWB		other AWBs	
	Formed	IDMT	Formed	IDMT	Formed	IDMT	Formed	IDMT
1998	2	-	-	-	-	-	-	-
1999	5	-	-	-	-	-	-	-
2000	17	-	-	-	-	-	3	-
2001	12	24	-	-	1	-	4	-
2002	94	54	5	-	5	-	2	-
2003	25	48	6	-	7	11	-	-
2004	5	16	-	11	-	2	-	-
2005	-	-	3		7	-	-	-
2006	-	-	18	-	27	14	1	-
2007	1	-	46	5	38	19	5	-
2008	-	18	6	12	4	15	1	1
2009	-	-	-	-	3	-	-	-
Total	161+1 ^a	160	84	28	92	61	16	1

Notes: Figures in the table are the numbers of FOs

a. Value for one case is missing

Results: Overall Implementation

Agencies involved in FO Formation during the years 1998-2009

FO forming agency	NC- AWB	GC-AWB	LBC-WB	Other AWBs	Total
SIDA	47	48	44	8	147
On-farm Water Management (OFWM)	79	36	48	5	168
SIDA and OFWM jointly	23	-	-	-	23
International Water Management Institute	11	-	-	1	12
Other NGOs such as OXFAM, SWAFCO	1	-	-	2	3
Total	161 ^a	84	92	16	353+1^a

Notes:

a. Value for one case is missing

Results: Composition of FOs

Characteristics of FO membership in three AWBs of Sindh Province

FOs membership aggregates	NC-AWB			GC-AWB			LBC-AWB		
	\bar{x}	S D	n*	\bar{x}	S D	n*	\bar{x}	S D	n*
Farmers/members (person)	280	231	161	347	400	72	347	383	78
Women farmers/members (person)	24	36	100	5	5	20	9	11	26
Land holding per farmer (ha)	13.0	10.7	159	9.4	7.5	70	11.9	7.4	77
Smallest land holder (ha)	2.8	2.5	160	2.5	2.7	84	4.7	22	91
Largest land holder (ha)	97.8	84.5	160	84.3	106	84	176	230	91

Notes:

- * Cases valid in the calculation of $\bar{x}(s)$; \bar{x} is the arithmetic mean and SD is standard deviation
- Calculations are based on FO Profile 2009. Thereafter no substantial progress in FO formation

Results: Institutional attributes of FOs

Organizational feature of FOs in three AWBs in Sindh Province

Organizational details	NC-AWB (n=162)	GC-AWB (n=84)	LBC-AWB (n=92)
FOs signed IDMT agreement	98.8	45.2	65.2
Tenure of FO management committees			
- 1 st tenure	-	79.8	75.0
- 2 nd tenure	92.6	19.0	10.9
- 3 rd tenure	0.6	-	-
- Status unknown	6.8	1.2	14.1
The largest landholder of a FO in MC	39.8	35.7	32.6
The Smallest landholder of a FO in MC	17.4	20.2	20.7
Women farmers in MC	1.8	1.2	-

Notes:

- Figures in the table are percentages
- Calculations are based on FO Profile 2009. Thereafter no substantial progress in FO formation

Results: Institutional attributes of FOs

Participation of different farmer groups in FO Management Committees

Farmer groups	Not participating	Participating in FO management committees				
		Chair	V. Chair	G. Sec	Treasurer	Members
NC-AWB (n=161)						
- Women	98.2	-	0.6	0.6	0.6	-
- Smallest	79.5	0.6	3.7	3.1	3.1	9.9
- Largest	57.8	23.0	8.1	4.3	3.1	3.7
GC-AWB (n=84)						
- Women	98.8	-	-	-	-	1.2
- Smallest	78.6	3.6	2.4	3.6	1.2	10.7
- Largest	64.3	22.6	6.0	1.2	1.2	4.8
LBC-AWB (n=92)						
- Women	100	-	-	-	-	-
- Smallest	79.3	1.1	4.3	3.3	2.2	9.8
- Largest	65.2	14.1	1.1	5.4	4.3	9.8

Notes: Figures in the table are percentages

- Calculations are based on FO Profile 2009. Thereafter no substantial progress in FO formation

Discussion

- Since the demand for reforms was not internally generated by its users and managers, the implementation remained halfhearted.
- Part of the problem rests with SIDA in following project approach to social mobilization and FO formation
- There has been a wholesale ignorance of drainage

Discussion

- Surprisingly some of the findings of earlier research were ignored .
 - rivalries of line hydraulic bureaucrats against institutional reforms,
 - the possibility of feudal capture and
 - chances of corruption among FO leaders.

Future research

- Determinant of equitable irrigation distribution, channel maintenance and cost recovery.
- Reevaluate the prospect of participatory irrigation management in the context of local power structure
- Determinants of the willingness of water bureaucracy in supporting the institutional reforms
- The capacity and willingness of farmers to manage the system.

Thanks