

# SMALL DAMS IN SINDH

By

**Sindh Irrigation Department\***

## INTRODUCTION

Flood irrigation is a system wherein the agricultural fields are fetched through rain water. This system is involved with extreme events of floods and droughts. In absence of proper hydraulic infrastructures, (Dam) this water not only causes damage to agricultural resources but also causes loss of water potential. Conversely, this potential can be diverted to enhance the agricultural productivity.

Kohistan Karoojhar have greater land-water potentials available for development of rain/flood irrigation system. Kohistan originating from Qambar-Shahdadkot to Thatta out skirts of Karachi District, hill torrent has a mean annual run off 518,582 ac-ft and can irrigate an area of 706,572 acres of barren land and Karoonjhar hill has a mean annual run-off 94,744 ac-ft which can irrigate an area of 70,00 acres land of Nagarparkar of Thar District. The recorded average annual rainfall is 6-8 " in Kohistan and 14" in Nagarparkar.

In flood irrigation, farmers are at the mercy of extreme events of floods and droughts. To maintain the agricultural profession as a secured source of livelihood, an improved and sustainable system is required.

Small Dam Project was launched by Government of Sindh in 2007, to meet the demand of irrigation and potable water to the population of neglected people of suburban and remote areas in Sindh, establishing SMALL DAMS ORGANIZATION SINDH, HYDERABAD, by constructing Small Dams, Delay action Dams, Weirs and I.S.S.O barriers, across the river passages to store and recharge the sub surface water.

The Kohistan region, Nagarparkar and Ubhan Shah Hills are main potential sites in Sindh Province, to construct, Small Dams, Delay Action Dams, Weirs and I.S.S.O Barriers to retain the run off generated from precipitation and continuous storm rainfall.

In above said scenario the Small Dams Organization has carried out 7 feasibility studies in last four years, out of which, 5 Nos. were completed upto June 2011, in all three regions i.e. Kohistan, Nagarparkar and Ubhan Shah Hills to extract potential sites for construction of Small Dams, Medium Dams and Retention Weirs, across the rain fed rivers (Nais).

On the basis of feasibility studies, Small Dams Organization has completed the construction of 19 Nos. Small Recharge Dams Weirs in Kohistan region and Nagarparkar. These Dams are successfully operating and initiating benefits to the inhabitant of neglected people of Nagarparkar and Kohistan areas and have shown a little hope by growing their crops, to meet the requirement of drinking water and their livestock.

**THE DETAIL OF COMPLETED DAMS WITH SALIENT FEATURES IS AS UNDER**

Sr.#	Name of Dam	Type of Dam	Location	Catchment area	Area under benefits in AF	Mean in flow in A.F
<b>01</b>	<b>Construction of 02 Nos. Delay Action Dams Small Dams Recharge Dams in Upper Kohistan-I Dadu amounting to Rs. 203.77 Million.</b>					
i)	Salari	Detention Weir	K.N Shah	233	2025	21972
ii)	Makhi	--do--	--do--	176	2700	17972
<b>02</b>	<b>Construction of 03 Nos. Delay Action Dams Small Dams Recharge Dams in Central Kohistan-I Dadu, amounting to Rs 632.524 Million.</b>					
	Rani kot	Detention Weir	Dadu	195	4800	62240
	Bandhani-II	--do--	--do--	339	4200	61222
	Taki	--do--	Johi Dadu	156	3900	52270
<b>03</b>	<b>Construction of 08 Nos. Delay Action Dams Small Dams Recharge Dams in Lower Kohistan, -II, Jamshoro amounting to Rs. 722.808 Million</b>					
i)	Suk	Detention Weir	Jamshoro	326.98	1192	35001
ii)	Koteri	--do--	T.B. K	72	72.25	13605
iii)	Thado-II	--do--	Gaddap	86.3	5114	20649
iv)	Langheji	--do--	Jamshoro	258.22	3000	24500
v)	Naimango	--do--	--do--	34.96	1200	3000
vi)	Kalu-I	--do--	--do--	218.85	1600	17000
vii)	Jharando	--do--	--do--	221.44	238	20000
viii)	Sari	--do--	--do--	194.76	400	16000
<b>04</b>	<b>Rehabilitation of 06 Nos. Irrigation Bunds in Nagarparkar</b>					
i)	Ranpur	Recharge Dam	Nagarparkar	63.488	5700	5075.590
ii)	Malji	--do--	--do--	24.576	12000	2023.416
iii)	Khararo	--do--	--do--	22.016	12000	1955.749
iv)	Tobirio	Tank	--do--	0.349	Tank	27.513
v)	Bhodesar	Tank	--do--	0.403	Tank	90.416
vi)	Lahy-jo-wandio	Recharge Dam	--do--	11.827	897.217	897.217

**SALARI WEIR IN UPPER KOHISTAN**



## LANGHEJI WEIR IN LOWER KOHISTAN



## JHARANDO WEIR IN LOWER KOHISTAN



## KALU -I WEIR IN LOWER KOHISTAN



## RANPUR DAM IN NAGARPARKAR



## LAKHY-JO-WANDO IN NAGARPARKAR



### THE DETAIL OF SMALL DAMS/ WEIRS IN PROGRESS

Sr.#	Name of Dam	Type of Dam	Location	Catchment area	Area under benefits in AF	Mean in flow in A.F
01	<b>Construction of 06 Gravity Weirs/ Small Dams in Upper Central Kohistan I, Dadu amounting to Rs. 676.395 Million.</b>					
i)	Buri	Gravity Weir	Upper Kohistan	63506	5500	1956
ii)	Khurbi	--do--	Upper Kohistan	12859	3200	7539

iii)	Shori	--do--	Central Kohistan	39290	3300	5803
iv)	Dingdhorro	--do--	--do--	34101	2950	19357
v)	Kukrani	--do--	--do--	7907	3050	20750
vi)	Bandhani	--do--	--do--	88.07	5500	28117
<b>02</b>	<b>Construction of 07 Gravity Weirs/ Small Dams in Lower Kohistan II, Jamshoro amounting to Rs. 937.705 Million.</b>					
i)	Mula	Gravity Weir	Jamshoro	1078	3705	3879
ii)	Rahuja/ Ullar	--do--	--do--	46923	9120	6546
iii)	Upper Mole	--do--	--do--	28612	3990	12097
iv)	Kandh Dhoro	--do--	--do--	58600	3990	4570
v)	Bazkhandro	--do--	--do--	59058	4560	26235
vi)	Gaddap	--do--	--do--	325290	3135	5307
<b>03</b>	<b>Rehabilitation Extension of 04 Nos. Irrigation Bunds in Nagarparkar amounting to Rs. 937.705 Million.</b>					
i)	Gordhero	Recharge	Nagarparkar	8.51	2000	5307
ii)	Naryasar	Tank	--do--	4.12	2100	320
iii)	Surachand	Recharge	--do--	3097	2900	337
iv)	Ghatyari	--do--	--do--	0.486	2500	300

**THE DETAILS OF SMALL DAMS IN PIPELINE**

Sr.#	Name of Dam	Type of Dam	Location	Catchment area	Area under benefits in AF	Mean in flow in A.F
<b>01</b>	<b>Construction of 04 Small Dams in Upper Central Kohistan I, Dadu amounting to Rs. 981.515 Million</b>					
i)	Dillan	Recharge	Mehar	156.00	1405	5088.61
ii)	Angai	--do--	--do--	386.73	2565	12614.87
iii)	Naing	--do--	Sehwan	688.2	4300	12614.89
iv)	Mazarani	--do--	Mehar	336	6020	10960
<b>02</b>	<b>Construction of 02 Nos. Small Dams / Recharge Dams in Lower Kohistan Jamshoro amounting to Rs. 876.465 Million.</b>					
i)	Ran Pathani	Recharge	Malir Kyc	1269.37	3890	56166.32
ii)	Malir Bakhshan	--do--	Jhang shahi Thatta	168.39	3020	7447.89
<b>03</b>	<b>COMPONENT – 09 Construction of 06 Nos. Small Recharge Dams in Nagarparkar amounting to Rs. 877.488 Million</b>					
i)	Umendka wandio	Recharge	Nagarparkar	1.064	3823	87.824
ii)	Ransar	--do--	--do--	1.248	606	98.854
iii)	Ghotrawa	--do--	--do--	2.252	8900	172.205
iv)	Abasar	--do--	--do--	6.400	2529	493.477
v)	Khani-jo-wandio	--do--	--do--	1.300	799	1 98.523
vi)	Khetlai	--do--	--do--	2.366	970	179.690
	<b>COMPONENT – 10 Construction of 06 Nos. Small Recharge Dams in Nagarparkar amounting to Rs. 897.25 Million</b>					

i)	Jinjhasar	Recharge	Nagarparkar	1.247	497	98.208
ii)	Chanida	--do--	--do--	9.732	3846	733.197
iii)	Rinmalsar	--do--	--do--	2.816	1907	215.337
iv)	Adhigam	--do--	--do--	0.854	364	67.887
v)	Lakarkhadio	--do--	--do--	4.293	2461	322.046
vi)	Kawara	--do--	--do--	0.689	398	52.336

Apart from above schemes in the pipeline, there are two Large Dams having height more than 100 ft. namely Nai Gaj & Darawat for which the Small Dams Organization has carried-out the feasibility study but now both the Dams are being undertaken by WAPDA.

In lieu of above two large dams, Small Dams Organization Sindh, has identified Five (05) Medium Storage Dams through feasibility studies having height less than 100 ft. namely Sita, Sohri, Ocha, Bazkhandi & Dao. Salient feature of all Five Medium Storage Dams are as under:

Sr.#	Name of Dam with Cost	Type of Dam	Location	Catchment area	Area under benefits in AF	Mean in flow in A.F
<b>01</b>	<b>Construction of 05 Medium Storage Dams in Kohistan Region.</b>					
i)	Sita Medium Dam Rs. 1721.00	Storage Dam	Qumbar	210	8000	3525
ii)	Sohri Medium Dam Rs. 2862.00	--do--	Thatta	430	6000	12962
iii)	Ocha Medium Dam Rs. 2070.00	--do--	Sann	270	3915	9650
iv)	Bazkando Medium Dam Rs. 4681.00	--do--	Jamshoro	681	10800	31782
v)	Dao Medium Dam Rs. 1878.00	--do--	Thano Bula Khan	580	4642	77541

The PC-I of all these Medium Storage Dams are in hand and efforts are under way for funding resources through donor agencies to accommodate the schemes under foreign funding.

## ISSUES

Due to insufficient funds, at present, few Small Dams and Retention Weirs Located in Kohistan and Nagarparkar are constructed by Irrigation Department under Small Dams Organization, Sindh, whereas, in other provinces, 100 to 300 Small Dams are already constructed too earlier to Sindh Province. Small Dams Organization has carried out a number of feasibility studies of hydraulic structures and selected more than 200 potential sites for construction of Small Dams, Medium Dams, Delay Action Dams, Retention Weirs and I.S.S.O Barriers in Kohistan region, Nagarparkar and Ubhan Shah Hills in district Khairpur.

In order to overcome the back-log, it is imperative to construct the Small Dams at large scale to improve the Socio-economic conditions of neglected people of arid zone in Sindh and uplift the economy of country. Small Dams Organization requires colossal funds to implement the proposed schemes on massive scale and complete it in next five years to reduce the poverty of arid area in Sindh province.