

REGISTER OF RESEARCH ON IRRIGATION AND DRAINAGE

QUESTIONNAIRE

A	Project title: Rice water requirement study
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B	Topic n° : 01	Sub-topic n°: 1
1)	category 02	Technical field n°: 2

C	Project location: Karakalpakstan, Chimbay district, state farm "Oktyabr"	
	Country: Republic of Uzbekistan	Area: 45 ha
	Precise details if possible	
	Country(ies):	Locality(ies):
	City(ies):	Others(s):

D	Duration of the project:		
	Year in which the project was started: 1971	Project completed:	1976
		Expected completion date:	1971-1976

E	Organizations and technical staff involved		
1	Supervisor/project coordinator (SURNAME, First name): Ramazanov Abid		100 %
	Organization:		Staff resources
	Address: 11, Karasy-4, Tashkent, telephone: 7 (3712) 65-18-52 E-mail: fax:		
	Other counterparts:	Organizations	2)
	First name	Surname (full name or acronym)	
1	Ministry for land Reclamation and Water Management		100 %
2			%
3			%
4			%
	Other collaborators:	man-	
	years		

F	Funding agencies	
	Full name or acronym	Percentage of project finance

		provided
1		%
2		%
3		%

G	Summary of research project (see instruction on page 1)
	<p><i>1 Objective and technical fields:</i> Rice water requirement establishing on meadow-alluvial saline soils. Comparison of designed and actual rice yield irrigation norms. Definition of optimal rice irrigation norm with regard to unsaturated zone soil desalinization. Water use improvement providing designed rice achievement.</p>
	<p><i>2 Scientific and technical approach:</i> Experimental definition of rice actual norm. Calculation of optimal rice irrigation norm. Providing normal rice growth and development under its cultivation on salinized meadow-alluvial soils of AmuDarya lower reaches.</p>
	<p><i>3 Environment characteristics:</i> Climate is sharply continental. Precipitation is 80-140 mm. Average annual air temperature is 11-13 °C. Humidity coefficient is: 0,29-0,13 (December - March); 0,12 (May - November). Relief is flat with slope 0,001-0,002 to the north. Before rice irrigation systems construction groundwater (salinity - 0,3-30 g/l) depth was 3-10 m. Seasonal fluctuations were 0,6-1,2 m.</p>
	<p><i>4 Parameters of Pilot Projects and Technical Solutions:</i> Experimental site area is 45 ha, land use efficiency 0,71-0,83. Main occupation is rice cultivation and cattle breeding. Irrigation network consists of mains, group and distributive earthen canals. Drainage network consists of drains (h=1,8 m) and on-farm collectors (h=2,5-3,0 m). Collector network specific extent is 44-47 m/ha. Dr norm is accepted as 1 m within rice rotation and 2 m in vegetable-fodder rotation. Rice share is 66,1 %; lucerne - 29,3 %; maize - 36,2 % Rice irrigation regime - shortened flooding. Calculated rice irrigation norm is under initial flooding was accepted as 10,9-11,9 l/sec per ha.</p>
	<p><i>5 Methodology:</i> Field investigations on water supply and water release accounting on rice fields; rice irrigation norm determination and optimal norm calculation with regard to root zone desalinization.</p>
	<p><i>6 Results:</i> Rice irrigation was performed by shortened flooding. After rice sowing check were flooded by water during 4-5 days with 10 cm water layer creation. Within this period seeds swelling and sprouting occur. Then water supply was ceased during 8-10 days. Then during next 15 days 25 cm water layer is created and maintained. In this period weeds die. During rice bushing phase 6-10 cm water layer is maintained. Then this layer is increased up to 15-20 cm and maintained up to the phase of milk ripeness. Since wax ripeness achieving water supply is ceased and water release from check is performed. Under such regime water allowance within the first year is 0,5-14,2 l/sec/ha by the end of June. During second year under initial flooding water allowance was 10-12,2 l/ha, in fourth year - 4,6 l/sec/ha. Actual irrigation norms were: system 1-1-23-24,3 th.cu.m/ha (1st year); 31,1 th.cu.m/ha (2nd year); 28,0 th.cu.m/ha (4th year); system Г-11-13-32,7 th.cu.m/ha (6th year); system 1-11-17-38,1</p>

th.cu.m/ha (6th year); system 1-111-27,3 th.cu.m/ha (6th year).
 These norms are proved by water balance analysis.
 Main item is water supply -27,3 th.cu.m/ha (1st year), 27,6 th.cu.m/ha (6th year).
 Moisture stock within 0-3 m layer was follow before flooding: 9,3 th.cu.m/ha (15st year), 9,6 th.cu.m/ha (4th year).and 13,2 th. mm/ha (6th year)
 Main expense income of the balance were water expenditures for total evaporation and vertical filtration from rice field. Total evaporation was 11,3 th.cu.m/ha (1st year), 12,6 th.cu.m/ha (4th year) and 11,7 th.cu.m/ha (6th year).
 Vertical filtration was 10,4; 11,1 and 14,3 th.cu.m/ha respectively. Final moisture stock within 0-3 m layer was 10,8; 12,1 and 14,0 th.cu.m/ha respectively. Discrepancy between income and expense items was 1,9-3,1 %.
 Surface release was: 2,6 th.cu.m/ha (1st year),2,8 th.cu.m/ha (4th year) and 1,0 th.cu.m/ha (6th year) or 3,6-10,8 % of water supply .
 Rice yield was 4,0-4,5 t/ha that is quite high index.

H Suggested key-words			
1	Rice water requirements	4	lateral outflow
2	water salt balance	5	moisture stock
3	vertical filtration	6	surface release

I Most recent publications (maximum 3)			
1	Author(s): A. Ramazanov, E. Kurbanbayev. H.Yakubov		
	Title: Certain problems of reclamation in AmuDarya lower reaches.		
	Publication details: Results of investigations of ecological-reclamation processes under different crops irrigation and some recommendations on their management.		
	Year of publication: 1986	free access <input checked="" type="checkbox"/>	restricted <input type="checkbox"/> confidential <input type="checkbox"/>
2	Author(s):		
	Title:		
	Publication details:		
	Year of publication:	free access <input checked="" type="checkbox"/>	restricted <input type="checkbox"/> confidential <input type="checkbox"/>
3	Author(s):		
	Title:		
	Publication details:		
	Year of publication:	free access <input checked="" type="checkbox"/>	restricted <input type="checkbox"/> confidential <input type="checkbox"/>