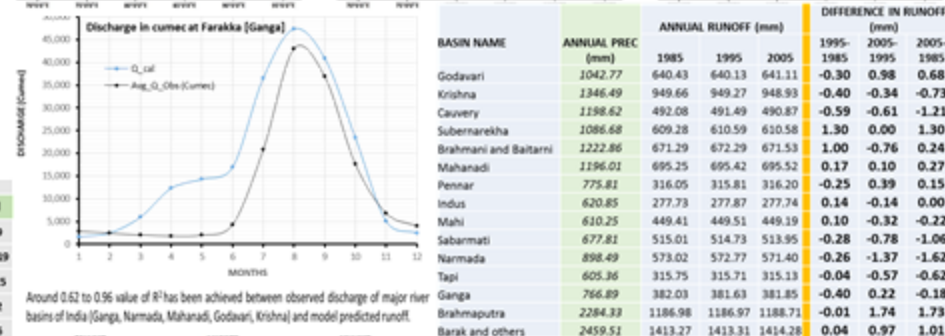
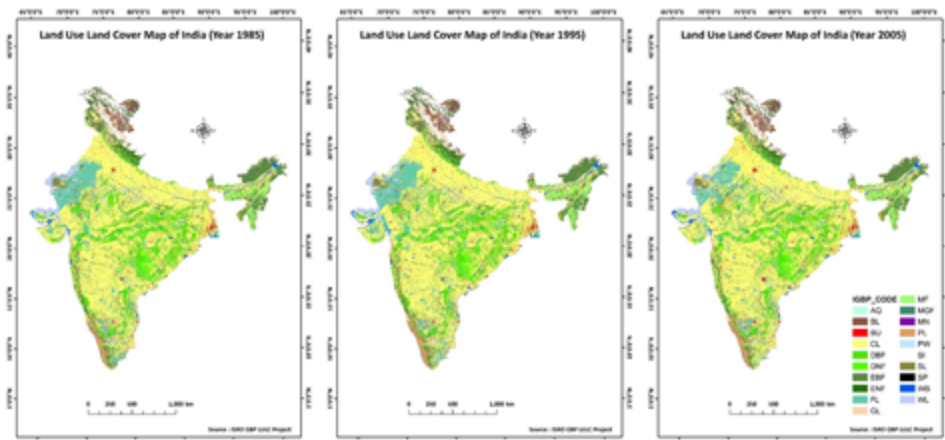
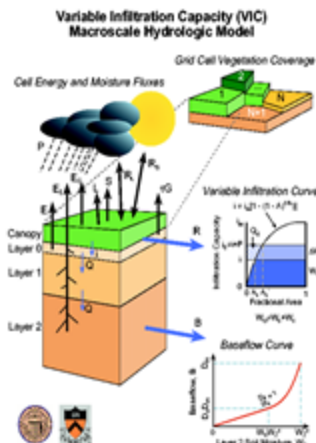


ISRO-GBP: Land-use and land-cover dynamics and impact of human dimensions in

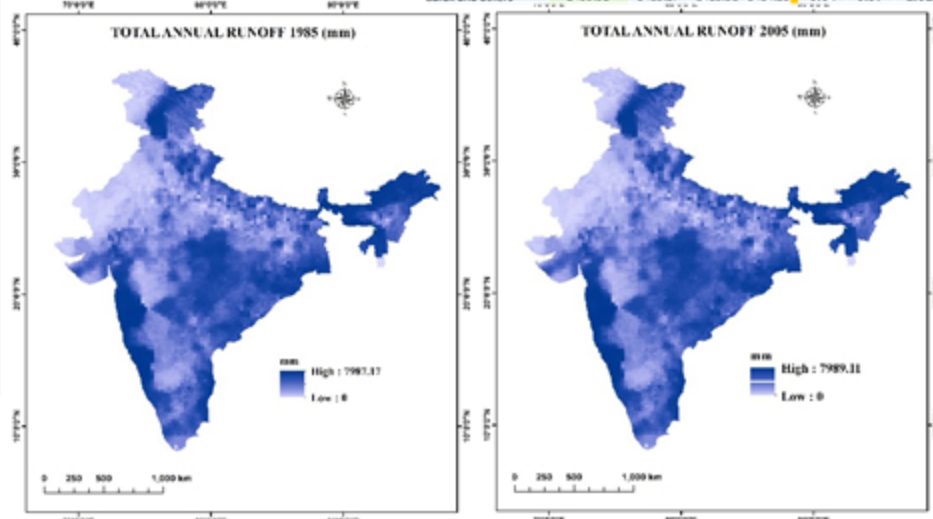
Indian river basins: Hydrological modeling, validation in Mahanadi basin

Objectives:

- ➔ To study the impact of human dimensions on LULC dynamics.
- ➔ To project the future LULC scenario using appropriate model(s).
- ➔ To analyze and project the impact of LULCC on hydrological cycle.



Around 0.62 to 0.96 value of R^2 has been achieved between observed discharge of major river basins of India (Ganga, Narmada, Mahanadi, Godavari, Krishna) and model predicted runoff.



Results: LULC Change (in Km²) Matrix (1985-05)

Major changes is increase in built Up (BU) and Crop Land (CL)

	BU	CL	FL	PL	ENF	EBF	DNF	DBF	MF	SL	GL	MGF	WB	PW	AQ	SP	SI	BL	WL	MN	Total
BU	33718	314	49	30	0	0	24	21	66	4	0	23	0	2	0	0	0	28	0	0	34279
CL	7691	1484989	46102	5550	4	183	288	2273	1285	9210	158	45	10447	189	60	1	0	380	1363	1	1570229
FL	2061	75571	165521	2792	0	1	13	60	152	2965	171	1	1469	270	0	0	0	188	681	0	251915
PL	1367	7194	3040	65434	1	21	0	95	32	370	2	1	253	83	1	0	0	13	82	4	77992
ENF	8	331	24	47	19663	261	0	9	32	56	40	0	7	0	0	7	0	0	3	0	20486
EBF	46	1538	10	1012	0	174299	0	134	827	980	2111	0	179	0	0	1635	1134	5	0	0	183909
DNF	3	560	74	1	0	0	52356	441	5	2	0	0	4	0	0	0	0	0	89	0	53533
DBF	235	7302	616	1648	1	462	4738	307072	12850	6723	20	1	926	0	0	0	0	109	318	10	343029
MF	212	6397	483	682	3	187	5	3150	134563	6009	144	7	1053	12	0	12	82	94	12	0	153106
SL	1202	15844	3913	1340	19	163	7	846	1555	153260	546	1	1256	406	6	0	434	665	870	4	182335
GL	46	1050	113	42	3	230	0	7	221	685	46925	0	1359	10	0	0	2295	1907	30	3	54926
MGF	53	15	0	6	0	0	0	7	1	0	680	19	0	4	9	0	0	28	0	0	821
WB	263	14165	1036	209	13	43	1	295	184	1747	1014	58	93391	75	42	3	3	76	822	0	113440
PW	11	144	9	9	0	0	0	0	127	4	1	16	2707	1	15	0	0	39	0	0	3084
AQ	0	6	0	1	0	0	0	0	0	4	0	0	1	0	59	0	0	2	0	0	72
SP	3	0	0	0	0	0	0	0	0	1	1	4	0	0	61	0	0	3	0	0	73
SI	0	480	0	1	2	637	0	46	998	3317	0	26	0	0	86223	5779	247	0	0	0	97757
BL	36	467	174	93	0	74	0	18	98	1480	772	0	93	0	0	0	2455	59996	259	1	66015
WL	235	8606	2323	168	0	0	101	49	2454	13	41	645	74	42	2	0	9	69921	5	0	84690
MN	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	40
Total	47191	1624971	223488	79064	19706	176561	57408	314525	151827	187136	55241	836	111170	3826	215	91	93065	70138	74883	79	