UWR Rainwater Offset Unit Standard

(UWR RoU Standard)

Concept & Design: Universal Water Registry

www.uwaterregistry.io

Project Concept Note & Monitoring Report

(PCNMR)

Project Name: Rainwater Harvesting Bundled Ponds in Gonda district, Uttar Pradesh

Version 2.0

UWR RoU Scope: RoU Scope 2

Monitoring Period: 2014-2024

Crediting Period: 2014-2024 (11 Years)

UNDP Human Development Indicator: 2 (India)

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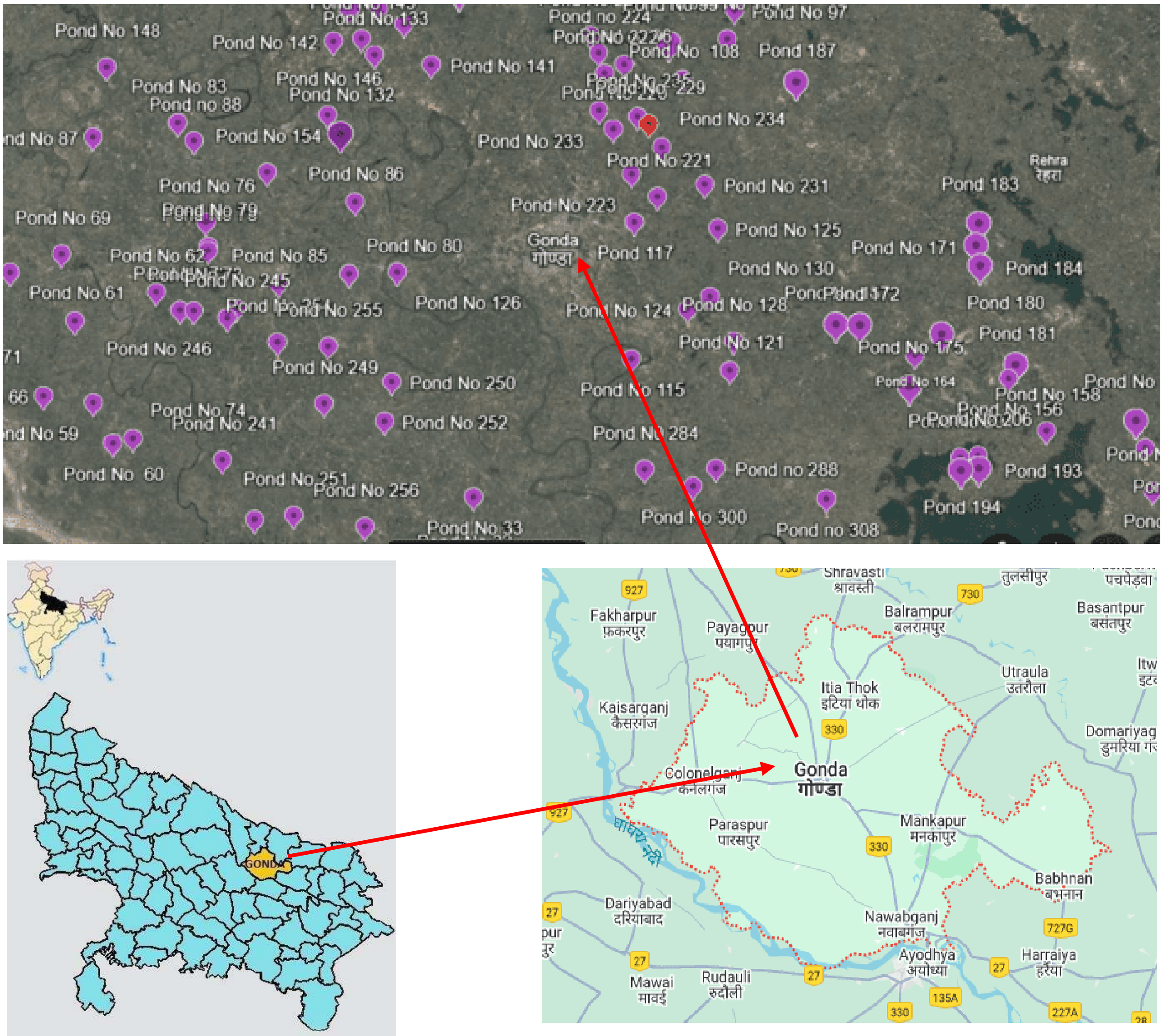
A.1 LOCATION OF PROJECT ACTIVITY

State	Uttar Pradesh
District	Gonda
Block Basin/Sub Basin/Watershed	Ganga Bain/ Ghaghra Sub Basin
Lat. & Longitude	27.13°N 81.93°E
Area Extent	4,003 square kilometres
No. of Villages/Towns	**1,817 villages** according to 2011 Census Data



A.2 PROJECT OWNER INFORMATION, KEY ROLES AND RESPONSIBILITIES

District Ganga Committee (DGC) is responsible for the administration and oversight of the development or rejuvenation of **149 ponds** in Gonda District, Uttar Pradesh, under the **Mission Amrit Sarovar** initiative. DGC has appointed **Innovators Infratech LLP (IIL)** to act as project proponent (PP) for water credits on select Amrit Sarovars. Launched on **24th April, 2022**, under the **Ministry of Jal Shakti**, this mission aims to conserve water by developing or rejuvenating multiple Amrit Sarovars across Gonda districts, empowering local farmers with a dependable water supply that sustains agricultural productivity even in drought-prone regions.

Gonda, an important district in Uttar Pradesh, comprises **four tehsils—Gonda, Colonelganj, Tarabganj, and Mankapur**—with a predominantly agrarian economy that relies heavily on **monsoon-fed water sources and groundwater**. The district has long faced challenges related to **water conservation, seasonal water scarcity, and groundwater depletion**. The restoration of **149 ponds** under this initiative plays a crucial role in enhancing water security, improving irrigation support, and promoting ecological balance in the region.

Before the project, these water bodies lacked proper delineation and structure. Now, they have been **transformed into well-defined and functional water management systems**. The **District Ganga Committee (DGC)** is responsible for:

- **Ownership and Rights:** Managing water usage within the project boundary while ensuring compliance with local governance structures.

- **Legal Land Title:** Ensuring that all project areas fall under government-designated schemes and are free from contested claims.

- **Regulatory Compliance:** Securing and facilitating the necessary permits and approvals for pond restoration and maintenance.

- **Project Implementation:** Overseeing pond excavation, deepening, and desilting to enhance rainwater harvesting, groundwater recharge, and overall water conservation.

- While **PP** does not undertake technical responsibilities, it ensures that the excavation, deepening, desilting, and other technical aspects of pond restoration are carried out by qualified agencies in accordance with the **Mission Amrit Sarovar** initiative's objectives.

- As a result of this initiative, the **149 restored ponds now have clearly defined margins and improved structures**, significantly boosting their **water retention capacity**. Beyond environmental benefits, the project has also **created local employment opportunities**, both during construction and for ongoing maintenance.

- By promoting **water security and sustainable resource management at the community level**, the **Amrit Sarovar initiative is making a lasting impact on rural development and environmental conservation** in Gonda and beyond.

Table 1 Information of Ponds

Gonda Amrit Sarovar				
Sr No	Pond No	Sarovar ID	Latitude	Longitude
1	1	120882	27.11258	82.4474
2	2	106955	27.09202	82.5345
3	4	54559	27.12903	82.482
4	8	107011	27.09658	82.4912
5	9	54470	27.07178	82.4364
6	11	54568	27.07268	82.4778
7	12	54518	27.06391	82.464
8	13	54986	27.06473	82.5393
9	22	34947	26.9311	81.9043
10	25	34943	26.9084	81.9396
11	26	117807	26.9003	81.8639
12	29	121066	26.9272	81.8288
13	31	34939	26.9098	81.8566
14	33	46218	26.9791	81.9109
15	34	34946	26.8979	81.8929
16	35	58974	26.93742	82.4672
17	38	44016	27.00718	82.3461
18	39	132654	26.97796	82.4636
19	43	44278	26.96247	82.3673
20	45	59293	26.98164	82.3502
21	46	116669	26.9602	82.4033
22	53	59108	26.99212	82.4295
23	56	67343	26.98178	82.3612
24	59	53657	27.03462	81.6654
25	60	53625	27.01062	81.6778
26	61	53645	27.08269	81.6531
27	62	53642	27.10044	81.7069
28	66	53634	27.0387	81.6334
29	67	23920	27.1092	81.5967
30	68	23922	27.11153	81.6115
31	69	23924	27.12229	81.6448
32	71	23926	27.07952	81.5869
33	72	45215	27.08926	81.7213
34	73	23928	27.08904	81.7303
35	74	23916	27.01347	81.6911
36	76	54091	27.14123	81.7378
37	78	53097	27.12439	81.7393

Gonda Amrit Sarovar				
Sr No	Pond No	Sarovar ID	Latitude	Longitude
76	153	121268	27.31436	81.7369
77	154	55718	27.17067	81.7777
78	156	54560	27.04857	82.2563
79	158	42597	27.01694	82.2814
80	164	54520	27.06083	82.1944
81	167	44017	27.07746	82.1449
82	169	53422	27.01956	82.3398
83	171	53266	27.12365	82.2359
84	172	54078	27.07683	82.1598
85	175	44092	27.04094	82.1922
86	180	54640	27.07143	82.2135
87	181	42033	27.0535	82.2607
88	183	54604	27.13676	82.238
89	184	54106	27.1117	82.2387
90	187	102223	27.2207	82.1191
91	190	43699	26.88491	82.1343
92	192	26482	26.88675	82.2045
93	193	43789	26.99205	82.2375
94	194	26489	26.99119	82.2259
95	195	52211	26.88232	82.1212
96	200	55721	26.93959	82.1945
97	201	121068	26.90355	82.2252
98	203	26485	26.84604	82.1993
99	204	52479	27.00146	82.2252
100	206	26479	27.00299	82.2368
101	207	61397	26.85624	82.1927
102	210	52763	26.86102	82.2202
103	211	72541	26.84279	82.2083
104	216	61446	26.84501	82.2251
105	220	54113	27.1962	82.0012
106	221	104055	27.1563	82.0296
107	222	43023	27.22899	81.9953
108	223	132029	27.16963	82.013
109	224	111976	27.24104	81.9913
110	227	43136	27.2515	81.9868
111	229	132046	27.19827	82.0286
112	231	43440	27.16348	82.0603

38	79	53077	27.12693	81.7399
39	80	53257	27.11116	81.8308
40	83	118010	27.1999	81.7196
41	85	26475	27.105	81.7851
42	86	26476	27.15323	81.8345
43	87	26477	27.19139	81.6651
44	88	26478	27.18954	81.7304
45	92	54738	27.31478	81.9876
46	93	105408	27.36236	82.0834
47	96	114549	27.23401	82.0078
48	97	34933	27.26585	82.0792
49	99	34925	27.24304	82.0368
50	102	54449	27.29534	82.0758
51	103	118234	27.28339	82.1475
52	104	53909	27.24937	82.0747
53	105	34924	27.29319	82.1239
54	106	34928	27.34505	82.1292
55	107	54665	27.33161	82.0456
56	108	34929	27.22553	82.0459
57	111	106161	27.3115	82.0095
58	112	44403	27.35409	82.0665
59	115	23892	27.05992	82.0127
60	121	54051	27.05366	82.0763
61	124	22296	27.08988	82.0491
62	125	53996	27.13741	82.0688
63	126	24798	27.11193	81.8617
64	128	23890	27.071	82.079
65	130	23882	27.09711	82.0633
66	132	54990	27.19045	81.8242
67	133	56789	27.24004	81.847
68	138	118378	27.26604	81.8308
69	141	56854	27.23423	81.8836
70	142	109749	27.24794	81.8205
71	143	57085	27.25821	81.8662
72	145	114948	27.24954	81.8386
73	146	55585	27.20453	81.8168
74	148	57377	27.23325	81.6734
75	151	109112	27.26728	81.8496

113	233	43208	27.207	81.992
114	234	43346	27.18533	82.0326
115	235	43278	27.2027	82.0165
116	241	55389	27.00076	81.7487
117	244	53346	26.96556	81.7694
118	245	110015	27.09088	81.7574
119	246	53395	27.08479	81.752
120	249	102214	27.03457	81.8145
121	250	55379	27.04717	81.8582
122	251	41496	26.96827	81.7949
123	252	44510	27.0239	81.8531
124	254	41386	27.07101	81.7839
125	255	44029	27.06788	81.8166
126	256	131382	26.96198	81.8406
127	257	66962	27.39339	82.0981
128	258	66579	27.34505	82.0042
129	261	54371	27.32251	81.9754
130	265	136963	27.38256	81.9502
131	266	54476	27.38069	81.9576
132	267	68614	27.41192	81.9595
133	268	54913	27.31424	81.8759
134	270	137468	27.34114	82.0464
135	271	55625	27.34786	82.0229
136	272	54429	27.38063	81.9727
137	273	68569	27.28788	81.9529
138	275	53661	26.84594	81.937
139	277	46364	26.91733	82.0175
140	280	53660	26.87014	82.039
141	282	53501	26.87197	81.9889
142	283	53663	26.91366	82.0326
143	284	53666	26.99528	82.0213
144	288	105612	26.99614	82.0673
145	290	132742	26.86092	81.9641
146	294	53498	26.8681	81.951
147	300	105571	26.98513	82.0531
148	305	53490	26.93544	81.9526
149	308	23908	26.97779	82.139

Figure 1 Images of Ponds

A.2.1 PROJECT ROU SCOPE

Project Name	Rainwater Harvesting Bundled Ponds in Gonda district, Uttar Pradesh
UWR Scope:	**RoU Scope 2**: Measures for conservation and storage of excess surface water for future requirement
Project Proponent	Innovators Infratech LLP
Project Proponent Address	108, Yash Silver Heights, Badshahnagar, Mahanagar, Lucknow, Uttar Pradesh- 226006
Project Aggregator	Yojan Solutions Pvt. Ltd.
Project Aggregator Address	17-18, Nilamber Bliss, Gotri Sevasi Road, Vadodara, Gujarat, India- 390021
Date PCNMR Prepared	14/08/2025
Type of structure	Rainwater Harvesting and Recharge Ponds of Different Shapes
Average Rainfall	869 mm
Run off coefficient	0.3
Evaporation & Absorption losses	20%
RoU Crediting Period	2014-2024 (11 Years)
Total RoUs Generated For the Crediting Period	(see table below)

Total RoUs Generated For the Crediting Period

Total ROUs	
2014	**102771**
2015	**82544**
2016	**124681**
2017	**96422**
2018	**103588**
2019	**142181**
2020	**168334**
2021	**200825**
2022	**151332**
2023	**132830**
2024	**152602**
Total	**1458110**

A.3 LAND USE AND DRAINAGE PATTERN

A.3.1 URBAN AND RURAL RESIDENTIAL

A.3.1.1 INTRODUCTION

The **land use classification** and **drainage network** of Gonda District is essential for the successful implementation of the **Amrit Sarovar Initiative**, which aims to **restore and maintain 149 ponds** for **rainwater harvesting, groundwater recharge, and sustainable water conservation**.

Gonda is a town in Uttar Pradesh which serves as administrative headquarter of Gonda district. The total area of Gonda District is 4,003 km² including 3,952 km² rural area and 51 km² urban area. There are 4 Tehsils part of Gonda District for administrative purposes. When it is about the rural area of Gonda District, Gonda has 1817 villages according to 2011 Census Data.

Gonda is the largest tehsil in Gonda district by area covering 1174.61 km^2 and Mankapur is the smallest tehsil in Gonda district by area covering 726.121 km^2. It is the largest tehsil by population while Mankapur is the smallest tehsil by population in Gonda district.

List of Tehsil in Gonda District

Gonda district is divided into several Tehsils or tehsils for administrative convenience. There are 4 tehsils in Gonda district. Each tehsil is headed by a Tehsildar, who is responsible for revenue administration and law and order.

Figure 1: Tehsil of Gonda

Table 2 Demographic Details of Gonda District

Tehsil	Area(km²)	Population
Colonelganj	1,032.7	855,636
Gonda	1,174.6	1,169,971
Mankapur	726.1	646,490
Tarabganj	1,069.6	761,822

Reference:https://cgwb.gov.in/cgwbpnm/public/uploads/documents/16841421323591O7627file.pdf

In Gonda district, Uttar Pradesh, the land use pattern is predominantly agricultural, with over 85% of the land under cultivation, supporting a significant portion of the population engaged in farming. The district's landscape includes diverse micro-agro climatic zones such as U**parhar (upland), Tarhar (lowland), Tarai, and Majha (Diara land)**.

Table 3 Land & Soil Type of Gonda District

Particular	Uparhar (Up Land)	Tarhar (Low land)	Tarai	Majha (Diara land)
Coverage	Part of the block :- Jhajhari, Pandrikripal, Wajeerganj, Rupaideeh & Paraspur	Part of the block:- Colonelganj, Tarabganj, Katarabazar, Belsar, Paraspur & Haldharmau	Part of the block:- Mujehana, Iteathok, Rupaideeh, Manakapur, Bhabhanjot, Chhapia	Part of the block :- Colonelganj, Tarabganj, Belsar, Paraspur, Navabganj
Soil Type	Sandy, Sandy loam & Loam soil	Clay loam, loam, sandy loam which are rich inorganic matter	Clay, clay loam & silty clay (plain and forest land)	Silty clay, clay & sandy loam (These lands are found in the river side of - Tedhi, Sarju & Ghaghara)

Land use is based on the nature of topography, its structure and geometry, availability of resources, historical importance, people's lifestyle, flora and fauna. Agricultural land scattered throughout the district while plantation can be seen in north-western part of the district. High density settlements can be seen in the central part of the district. The land use/land cover data of the study area is showing rapid urbanization. Block wise data of land utilization under the standard heads of land uses are given in table 3.

There has been a notable increase in agricultural land and built-up areas over the years, reflecting broader trends in land use dynamics observed in similar regions. Additionally, Gonda is home to forested areas, such as the Tikri Reserved Forest, where changes in forest cover have been studied to understand land use shifts. Below table and map is provided for understanding these changing patterns.

Table 4Land Use pattern of Gonda district, Uttar Pradesh

Sl. No.	Block	Total Reported	Forest	Uncultivable	Current Fallow	Other Fallow	Land Other than agriculture	Grassland	Gardens, trees and shrubs
		Area (Hectare)							
1	RUPAIDIH	29343	388	222	1281	954	4272	77	311
2	ITIATHOK	25030	711	326	891	110	3567	107	367
3	PADRI KRIPAL	15929	0	217	1024	1160	2348	81	221
4	JHANJHRI	23751	168	373	1153	720	4678	101	927
5	MUJHENA	24692	707	367	1034	712	3347	93	448
6	KATRA BAZAR	28440	2	275	1028	1060	3612	90	966
7	HALDHAMAU	23185	1	202	1048	962	2335	96	324
8	COLONELGANJ	24897	0	230	1140	1051	2278	67	384
9	PARASPUR	29671	11	390	1117	837	4507	209	348
10	BELSAR	23173	9	240	1036	633	2612	206	277
11	TARABGANJ	24852	0	503	990	663	3423	225	1238
12	WAZIRGANJ	15141	117	149	561	452	1358	207	513
13	NAWABGANJ	33054	5516	527	863	1389	5127	110	514
14	MANKAPUR	29381	4040	671	561	1457	4671	77	310
15	BABHANJOT	23392	700	512	536	1316	2372	23	387
16	CHHAPIYA	21874	480	473	414	1822	2441	80	359

Figure 2 Land use/ Land cover map of Gonda district

A.3.1.2. Drainage System

Gonda district in Uttar Pradesh faces significant drainage challenges, particularly during the monsoon season. The district is prone to flooding and waterlogging due to several factors. One major cause is the substantial rainfall it receives, varying from 797.13 to 1375.73 mm annually, which can lead to flash floods and waterlogging.

Additionally, the siltation of rivers and drains reduces their capacity to carry water, exacerbating flooding. For instance, 33 drains are choked and silted, interrupting the flow of rainwater. Unplanned urbanization without adequate drainage planning also contributes to waterlogging issues, such as deforestation, which increases runoff and reduces the natural absorption of water. Poor drainage management, including inadequate maintenance of drainage systems, leads to their failure during heavy rainfall.

The main rivers flowing through Gonda play a crucial role in its drainage system but also pose a risk of flooding. The **Ghaghara River**, formed from the united waters of the **Kauriala, Saryu, and Chauka rivers**, is the primary river affecting drainage patterns. The **Saryu River** joins the **Ghaghara** in Gonda and is another significant river contributing to the district's drainage system. The **Kuwano River** flows along the northern border, further influencing the district's drainage.

Flooding has a significant impact on Gonda district. In 2013, 237 villages in 10 blocks were affected by river floods and waterlogging, covering an area of 77,965 ha. This not only interrupts overall development but also causes substantial economic losses. To mitigate these issues, several measures are being implemented. Desiltation of ponds is crucial to increase their storage capacity and reduce waterlogging; ponds were suggested for desiltation. Additionally, constructing embankments to protect areas from river overflow is essential; embankments were proposed to mitigate flood risks. Afforestation is also important, as planting trees reduces runoff and enhances soil absorption. 7,740 ha of land with high moisture content is suitable for afforestation. Renovating existing drains to improve water flow is another key strategy.

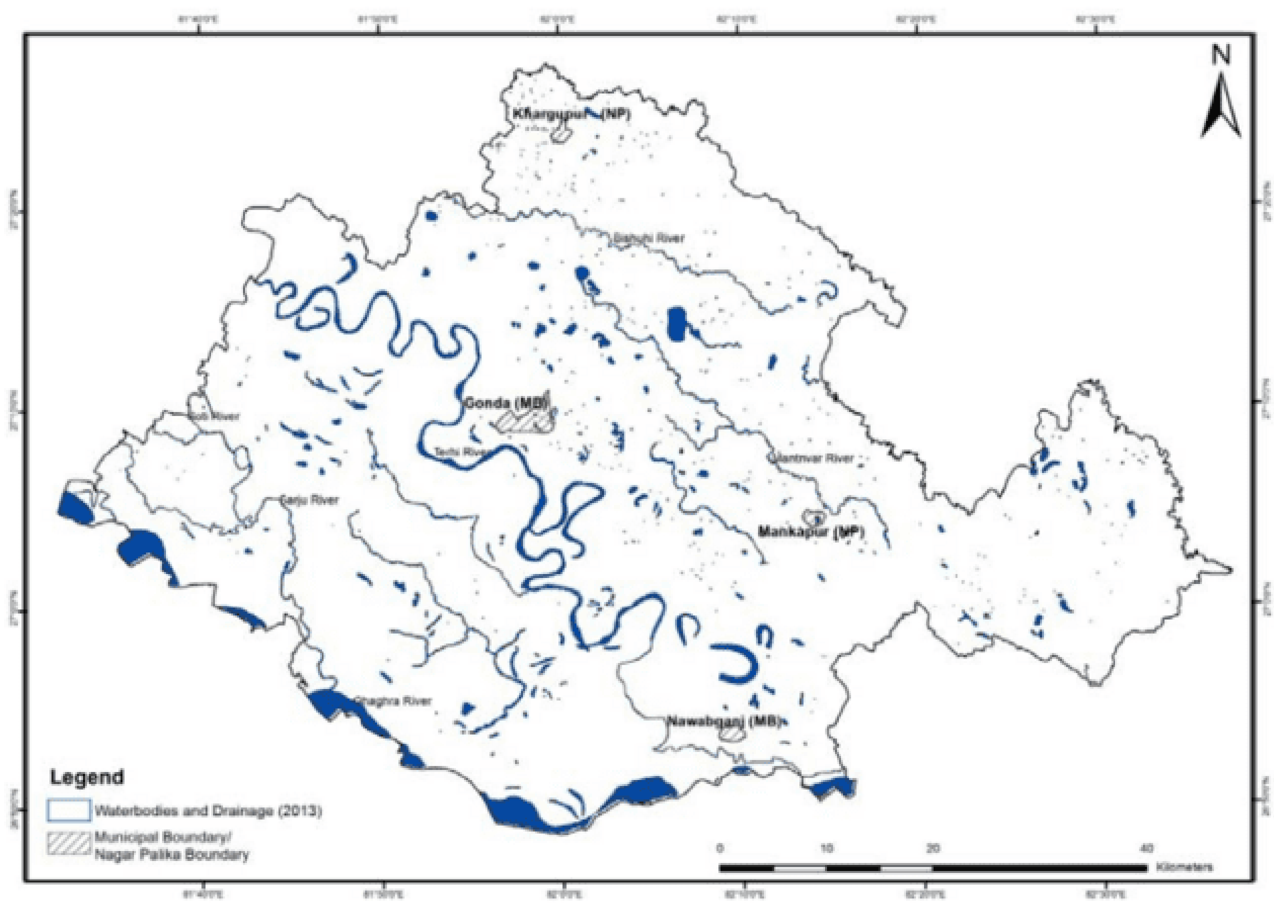


Figure 3 ***Waterbodies and drainage in Gonda district***

Improving drainage in Gonda district requires a comprehensive approach that includes these measures. By addressing these challenges, the district can reduce the impact of flooding and waterlogging, enhancing overall development and sustainability.

Initiatives like the Amrit Sarovar scheme, which focuses on constructing or rejuvenating water bodies to enhance groundwater recharge and support rural water security, can further support these efforts by promoting sustainable water management practices.

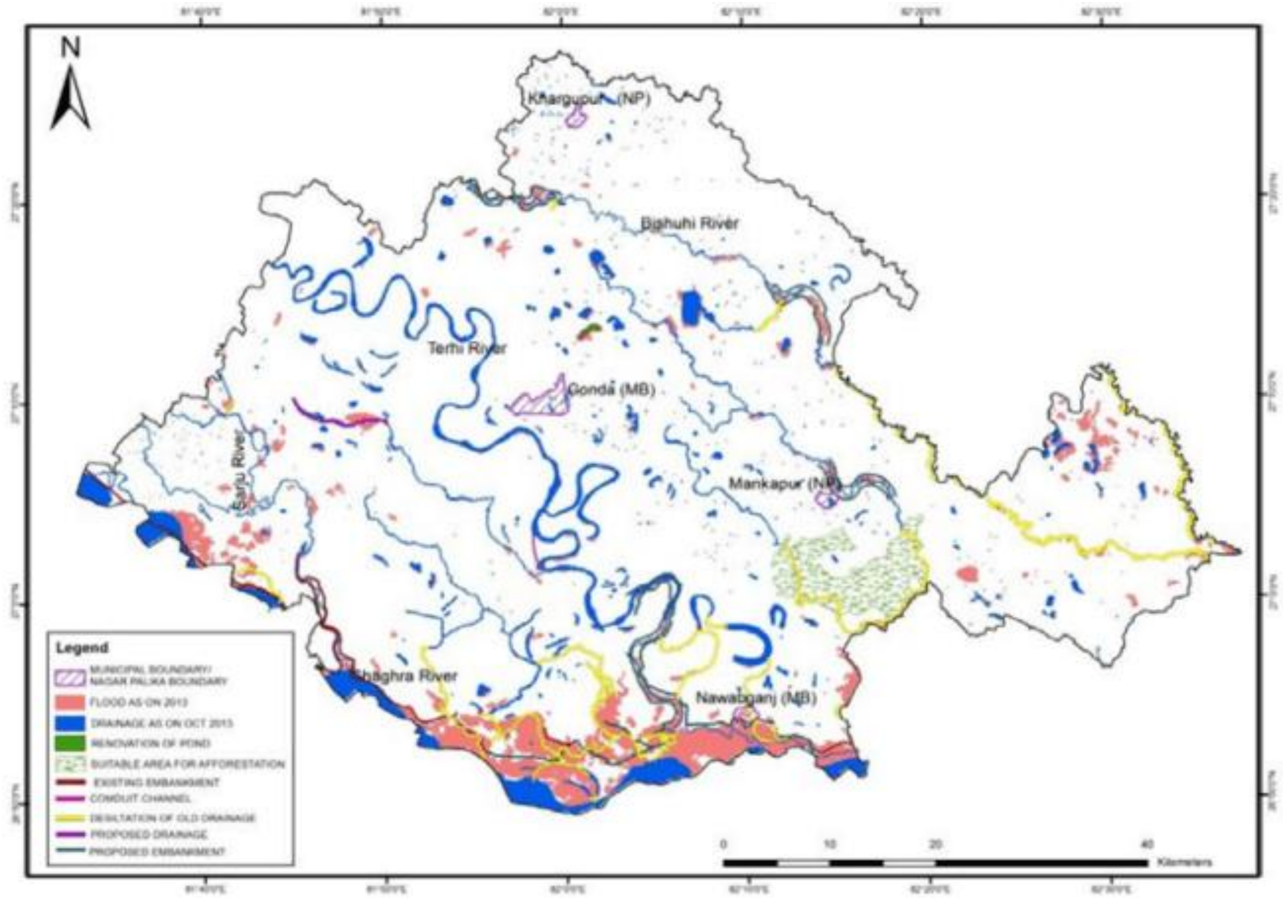


Figure 4 ***Improvements of drainage and waterbodies and mitigation of flood and waterlogged areas, Gonda district***

https://www.ijset.in/wp-content/uploads/2016/01/10.2348.ijset1115152.pdf

A.3.1.3. River System

Gonda District is predominantly influenced by the **Ghaghara River Basin**, which is a vital component of the region's hydrological and agricultural framework.

The Ghaghara River, originating from the Himalayan glaciers near Lake Mansarovar at an elevation of 4,800 meters, flows through Nepal before entering India at Kotia Ghat. It forms the southern and southwestern boundary of Gonda District, while its tributaries like the Saryu and Kuwano further contribute to the drainage system.

The district lies within the Ghaghara alluvial plains, characterized by quaternary alluvium consisting of sands, clay, and kankar. This terrain supports extensive agricultural activities, with about 90% of the cultivable land under irrigation through state and private tubewells and canals. The district has a total irrigation area of 263,672 hectares out of 293,983 hectares of cultivable land, highlighting its dependence on groundwater and surface water resources.

The climate in Gonda is sub-humid, with an average annual rainfall of approximately 869 mm, primarily received during the monsoon season from June to September. This rainfall supports both surface water systems and groundwater recharge. The Ghaghara River Basin plays a crucial role in sustaining agriculture in the district by providing water for irrigation and drinking purposes. Additionally, modern irrigation initiatives such as drip irrigation for sugarcane cultivation are being introduced to enhance water conservation efforts and crop yields. These measures reflect the importance of the Ghaghara River Basin in shaping the socio-economic and ecological dynamics of Gonda District.

Figure 5 River Map of Gonda District

Watershed Code	
Sub-Basin Name	**Watershed Code**
Ghaghara	C2AGHA01 to 76

Figure 6 Watershed Code of Ghaghara basin

A.3.1.4. PHYSIOGRAPHY

Physiographically, the region is divided into two main units: **upland plains** underlain by **older alluvium** and **lowland plains** underlain by **newer alluvium**.

Geomorphology

Geomorphologically, the district can be grouped into **two units** i.e., **Older Alluvial Plain (OA) and Younger Alluvial Plan (YA)**. Each unit possesses several landforms, such as Paleochannels, Meander-scars, oxbow Jakes, back-swamps, Flood plains and sandbars. The details of units and landforms are discussed as follows:

1. Older Alluvial Plain: It is flat and gently sloping towards south and southeast. It is mainly situated away from the drainage lines; it is composed of old unconfined alluvial material of varying lithology and consisting of various fluvial geomorphic landforms as stated above. It differs from younger or newer alluvium in predominance of clayey material.

2. Younger Alluvial Plain: It is flat and considerably more sloping towards drainage lines. It is mostly sandy in nature and composition. It is extensive in deposition adjacent to the drainage lines. It is characterised by development of present and old flood plains and terraces of different chronological order besides other landforms as stated above. A short description of each landform present in the above units is given as follows:

The older alluvium occupies the north and eastern parts, while the newer alluvium covers the central, western, and southern areas, forming low-lying, slightly undulating tracts deposited by rivers such as the **Kuwano, Tirhi, and Ghaghra** in more recent times. Notable geomorphic features include **sand bars** along riverbeds like the Ghaghra, which consist of sand deposits of varying sizes produced by fluvial action.

Flood plains are extensive, low-lying, flat areas adjacent to the Ghaghra River, characterized by thick deposits of unconsolidated alluvial materials near the river margins that thin out towards the valley slopes. Additionally, **ravines** and both **younger and older alluvial plains** are observed, reflecting a diverse landscape shaped by river dynamics and sedimentation processes. The region's topography is also influenced by the holy rivers Saryu and Ghaghra, which pass through it, contributing to the soil composition primarily made of fluvial deposits

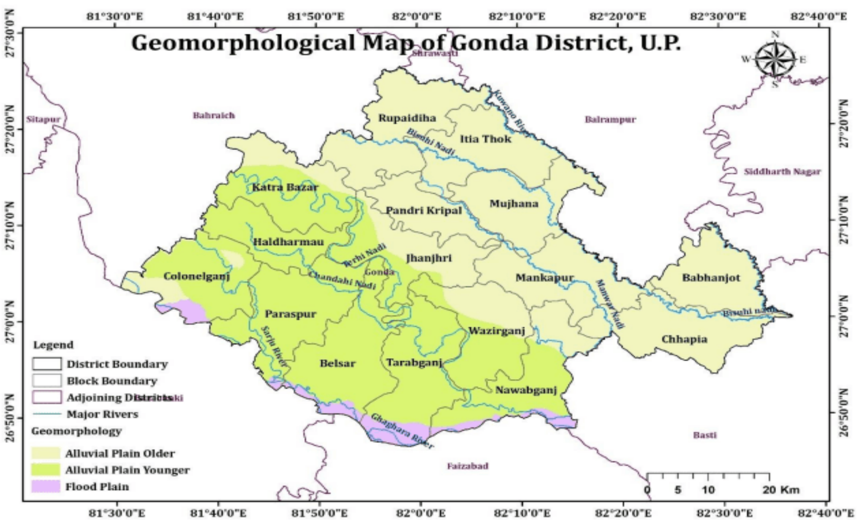


Figure 7 Geomorphological Map of Gonda District

(Reference:[https://cgwb.gov.in/cgwbpnm/public/uploads/documents/1684142132359107627file.pdf,](https://cgwb.gov.in/cgwbpnm/public/uploads/documents/1684142132359107627file.pdf) https://www.cgwb.gov.in/old_website/District_Profile/UP/Gonda.pdf , [https://gonda2.kvk4.in/)](https://gonda2.kvk4.in/)

Soil

The district is mostly covered by Loamy soil. Soil in the district exhibits a wide variation in composition, texture and appearance. The ridges are occupied by soils locally known as "Bhur" or "Silty Sand". "Matiyar" or "Clay Soils" occurs along topographic lows and "Dumat or Loamy soils" in the level lands. Clay is dominant in the areas where "Reh" (Usar) prevails. Along the river valleys, a very fertile soil called "Dumat" is prevalent which is the youngest. Generally, the soil is fertile in nature. Soil may be divided into following types depending on the physiography of the region.

a) Coarse Loamy

Coarse textured poor water holding capacity, low in organic matter, good aeration, and poor nutrients retaining capacity.

b) Fine Loamy

Fine textured, moderate aeration, high moisture and nutrients retaining capacity, soil particles sticky when wet, dries out slowly and moderate aeration.

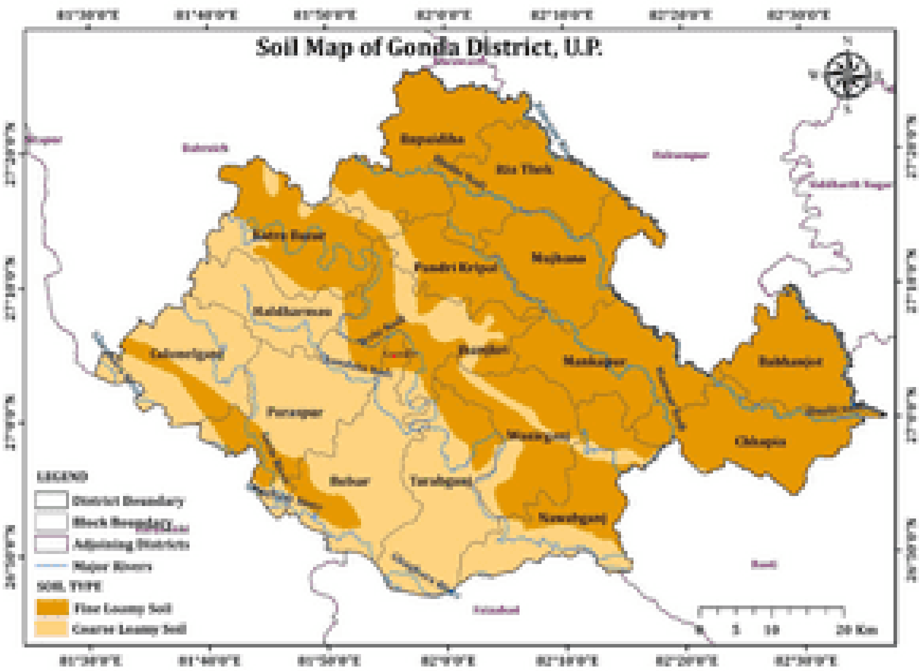


Figure 8: Soil Map of Gonda District, Uttar Pradesh

Sandy Soil: Characterized by low organic matter content, sandy soil has a high infiltration and percolation rate, making it well-draining but less fertile.

Sandy Loam: A nutrient-rich and fertile soil type, sandy loam offers a balanced texture that supports healthy plant growth.

A.4. CLIMATE

(i) Type of Climate

The climate of Gonda district is characterized by a distinct seasonal contrast within a sub-humid environment. The district receives an average annual rainfall of **approximately 869 mm**—though some sections of the report reference slightly lower figures due to dataset variations—with nearly 90% of the precipitation falling during the southwest monsoon season (June to September).

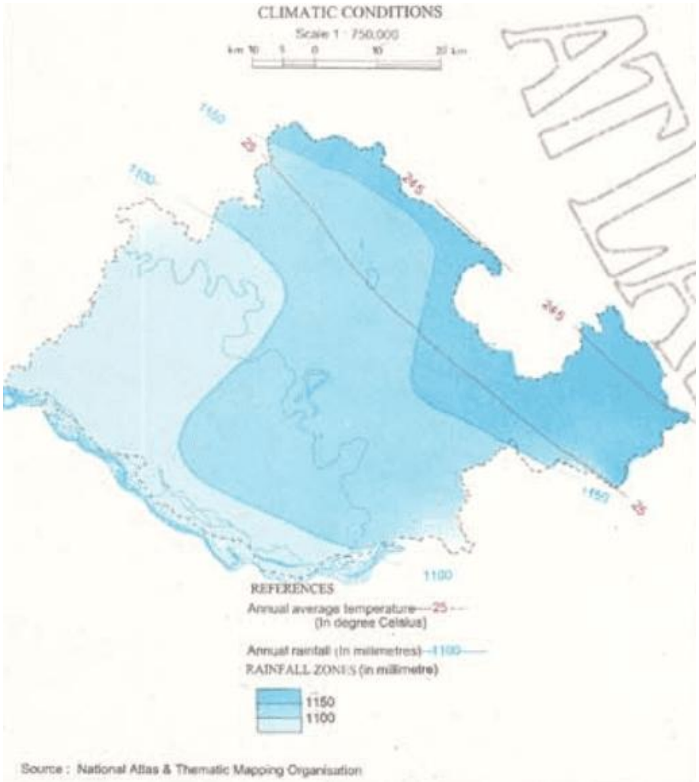


Figure 9 Climatological Map of Gonda District

This intense rainy period provides ample water for **deep percolation and groundwater recharge**. In January, the climate is at its coolest, with mean daily maximum and minimum temperatures of about 22.9°C and 8.3°C, respectively, while May is the hottest month, experiencing daytime temperatures of roughly 39.9°C and night-time lows around 25.6°C. Overall, the monthly averages hover around 31.7°C for maximum and 18.5°C for minimum temperatures. Additionally, the district experiences high morning relative humidity averaging 68%, which drops to about 56% by evening, and generally mild winds at an average speed of 4.8 km/h that tend to pick up during summer.

Despite the hot and dry summer conditions, the substantial monsoon rainfall, combined with a significant evaporative demand (**with potential evapotranspiration estimated at 1422.7 mm**), ensures that moisture availability remains higher than that of arid or semi-arid regions—clearly supporting the sub-humid classification.

Reference:https://www.cgwb.gov.in/old_website/District_Profile/UP/Gonda.pdf

A.5. RAINFALL

Gonda district receives an **average annual rainfall of 869 mm**, with most of it (around 90%) falling during the southwest monsoon season from **June to September**. This heavy rainfall helps recharge groundwater and supports agriculture. However, rainfall varies from year to year.

Data from 1981 to 2021 shows that 55% of the years had below-normal rainfall, while the remaining years had normal or above-normal rainfall. The highest recorded rainfall was 1585 mm in 1984, while 1997 and 1998 experienced severe drought due to very low rainfall.

Overall, Gonda's climate is sub-humid, with high humidity in the mornings except during summer. Winds are generally strong, especially in summer, with an average speed of 4.8 km/h. The district also experiences **high moisture loss due to evaporation**, with a potential **evapotranspiration of 1422.7 mm**. While rainfall is generally sufficient, fluctuations in annual patterns sometimes lead to dry spells or excessive rain, impacting water availability and farming.

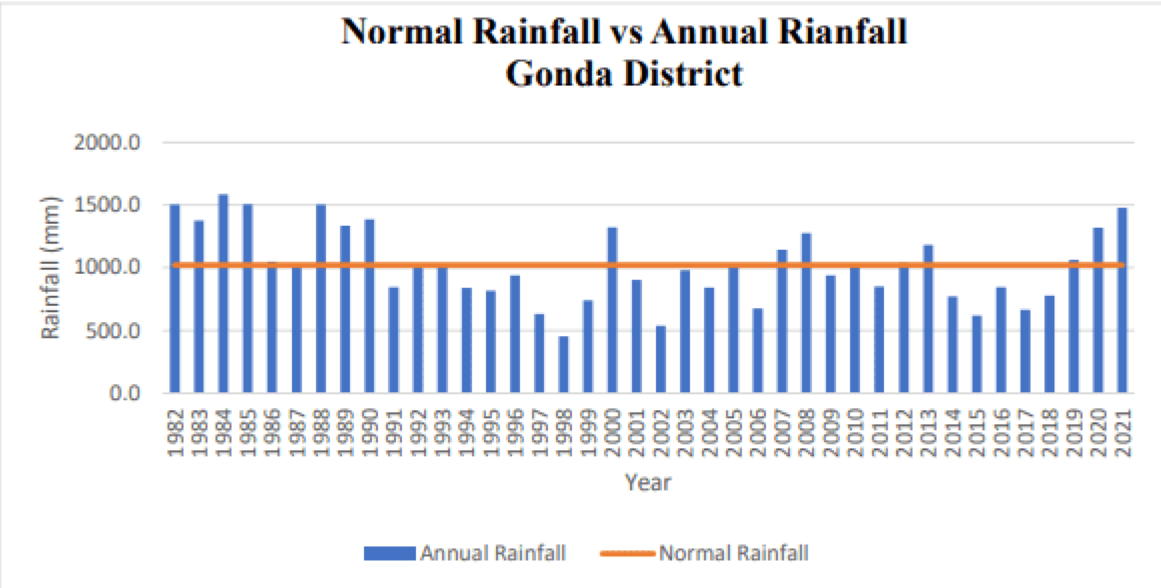


Figure 10 Variation of Annual Rainfall from Normal Rainfall in Gonda district

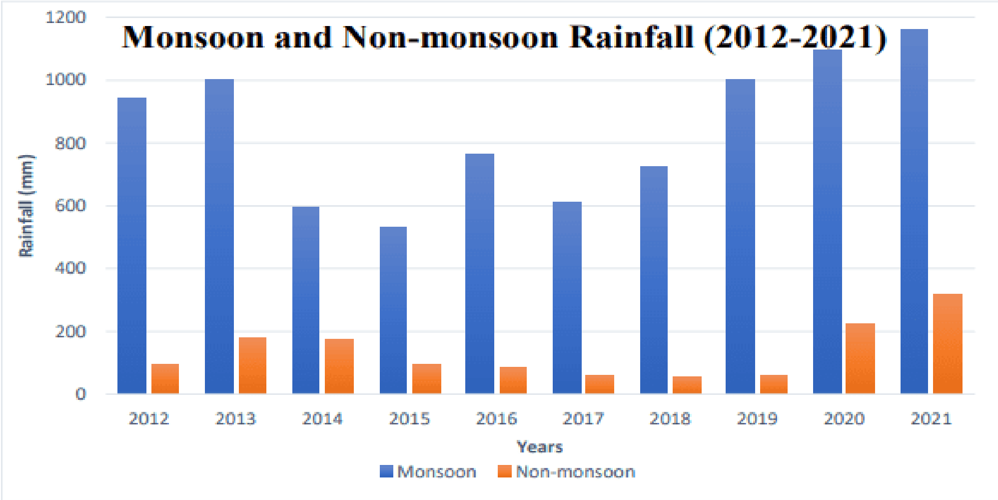


Fig 1.3: Rainfall distribution in the last 10 years (2012-2021) in Gonda district

Figure 11 Rainfall distribution in the last 10 years (2012-2021) in Gonda district

Table 4 Variation of Annual Rainfall from Normal Rainfall in Gonda, U.P.

S. No.	Year	Annual (mm)	Normal Rainfall (mm)	Deviation (%)
1	2012	1037.4	1020.16	1.7
2	2013	1180.3	1020.16	15.7
3	2014	769.3	1020.16	-24.6
4	2015	622.4	1020.16	39.0
5	2016	843.1	1020.16	-17.4
6	2017	668.2	1020.16	-34.5
7	2018	776.4	1020.16	-23.9
8	2019	1061.8	1020.16	4.1
9	2020	1319.2	1020.16	29.3
10	2021	1478.1	1020.16	44.9

Under the Amrit Sarovar initiative, a total of 149 pond rejuvenation projects have been implemented in the Gonda district. To verify the accuracy of the rainfall data, IMD rainfall data will be referenced. The relevant information is presented in the table below:

Table 5 Rainfall Data – Gonda District

Rainfall Data	
2014	742.3
2015	596.3
2016	877.4
2017	676.8
2018	708.1
2019	958.6
2020	1114.9
2021	1311.2
2022	897.9
2023	758.5
2024	853.1

A.6. GROUND WATER

(i) **Description of aquifer:**

Gonda district, covering about 3987 sq km in Uttar Pradesh, is underlain by Quaternary alluvial sediments that host a complex groundwater system. The aquifer system comprises three main groups:

• The shallow, phreatic aquifer (**Group I**) extends from the ground surface to around 97–115 m below ground level and is largely sandy, providing high yield for irrigation and domestic use.

• The deeper, confined aquifers (**Groups II and III**) occur beneath a clay layer and extend down to and beyond 300 m, with sand dominating these layers interspersed with clay bands.

Groundwater from these aquifers is critical for the district—supporting over 90% of its irrigated area—though challenges like water level fluctuations and occasional quality issues (e.g., elevated iron and arsenic) underscore the need for sustainable management strategies.

(ii) **Unconfined & confined aquifers**

In Gonda district the aquifer system is divided into shallow unconfined (or partially unconfined/semiconfined) aquifers and deeper confined aquifers, and their water quality can be broadly categorized as follows:

(a) Potable: These are the shallow, phreatic aquifers that typically yield fresh, calcium–magnesium bicarbonate type water. In most parts of the district the water quality meets drinking water standards, although routine analysis shows electrical conductivity values ranging from about 300 to 1800 µS/cm at 25˚C.

Quality Concerns: In some block headquarters, the unconfined aquifer water exhibits elevated iron levels (and occasionally manganese or arsenic) that may necessitate treatment before use. Despite these localized issues, brackish or saline conditions are not generally observed in these shallow aquifers.

(b) Brackish: Brackish groundwater, characterized by dissolved solids concentrations between 1,000 and 10,000 milligrams per liter, is typically found in coastal regions or areas with specific geological conditions.

Groundwater is generally suitable for drinking and irrigation purposes. However, challenges such as waterlogging and soil salinity have been identified, particularly in canal command areas. The Central Ground Water Board recommends discouraging canal irrigation in waterlogged regions to mitigate these issues.

(c) Saline

Confined Aquifers (Aquifer Groups II and III)

– Potable: Tapped at greater depths (typically starting below 120–130 m bgl), these aquifers are bounded by clay layers that help isolate them from surface contaminants. Their water is generally fresh and, in many cases, preferable for public supply—especially in areas where the unconfined water is affected by iron or arsenic.

– Mineralization: Although confined waters can sometimes show a higher degree of mineralization due to longer residence times, in Gonda district they remain within acceptable limits for potable use. There is no widespread occurrence of brackish (moderately mineralized) or saline water in these confined aquifers.

In summary, both the unconfined and confined aquifer systems in Gonda are predominantly fresh and suitable for drinking (potable) purposes. While the shallow unconfined aquifers occasionally show localized issues with iron and arsenic, there is no significant presence of brackish or saline water in either aquifer type across the district. This overall favourable groundwater quality supports extensive domestic and irrigation use throughout Gonda district.

(ii) Any special quality problem, (Seawater intrusion, pollution, high fluoride etc.).

In Gonda district the primary groundwater quality challenges are mainly of natural origin rather than due to seawater intrusion, industrial pollution, or high fluoride. Specifically:

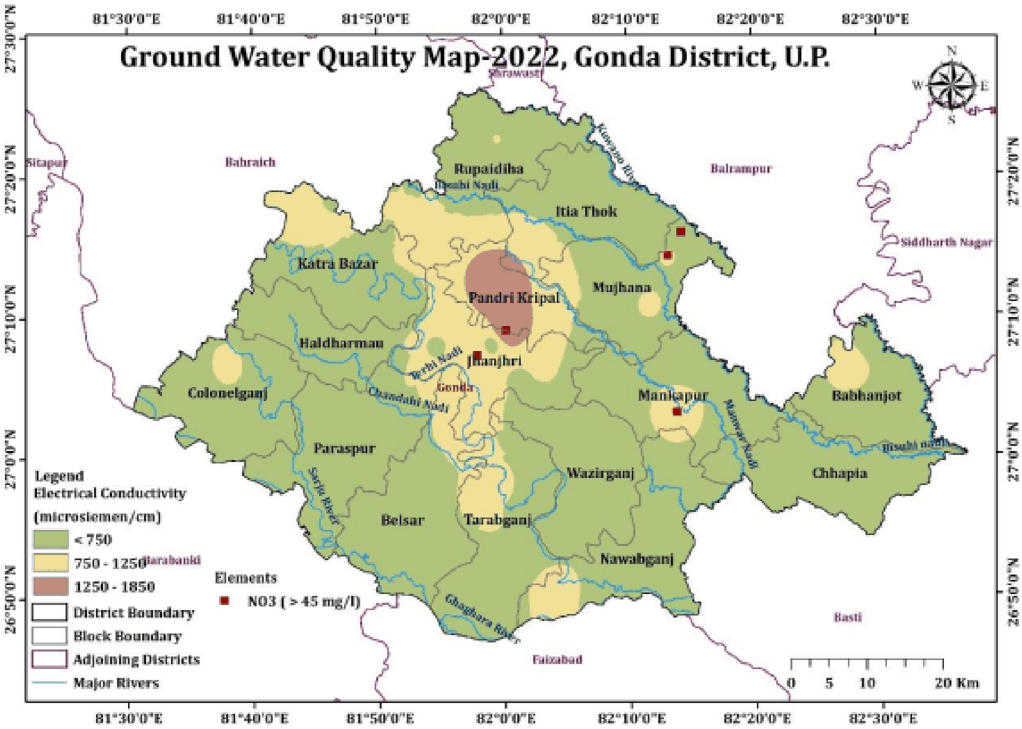


Figure 12 Water Quality Map of Gonda district

• Elevated Iron and Manganese – Analyses indicate that shallow unconfined aquifers in several areas have iron concentrations exceeding permissible limits. Manganese levels, while less frequent, have occasionally surpassed safe thresholds. These issues are linked to the geochemical characteristics of the Quaternary alluvial sediments that dominate the region namely Katra Bazar, Colonelganj, Haldharmau, Rupaideeh, Itiathok, PadriKripal, Mankapur, Chhapia, Babhanjot, Mujhena, Nawabganj, Wazirganj, Belsar, Paraspur.

• Arsenic in Shallow Groundwater – While not widespread, some instances of arsenic presence have been detected in shallow groundwater sources, highlighting the need for monitoring and potential treatment measures to ensure potable quality namely Katra Bazar, Haldharmau, Paraspur and Padri Kripal.

• Absence of Seawater Intrusion or High Fluoride – As an inland district, Gonda does not face seawater intrusion concerns, and reports of high fluoride concentrations are uncommon.

Overall, while Gonda's groundwater is largely fresh and suitable for use, these localized concerns particularly elevated iron and occasional arsenic presence necessitate routine monitoring and targeted interventions to maintain safe drinking water standards.

A.7. ALTERNATIVE METHODS

Challenges in managing its water resources effectively. The district's hydrological conditions, including its reliance on groundwater, necessitate innovative water management strategies.

1. Rainwater Harvesting

Gonda receives an average annual rainfall of 869 mm, making rainwater harvesting an effective method to recharge groundwater and reduce runoff.

Implementation: Construct check dams and recharge shafts to enhance groundwater recharge. For instance, if 20% of the rainfall is captured and stored, it could significantly contribute to groundwater replenishment.

Data: The district's water table fluctuates between 4.20 to 5.77 meters below ground level, influenced by rainfall.

2. Storm Water Management

Efficient stormwater drainage systems can manage excess water during monsoons, reducing waterlogging and enhancing water conservation. Gonda's rainfall varies from 797.13 to 1375.73 mm, necessitating robust stormwater management.

Implementation: Improve drainage infrastructure to prevent flooding and allow for better water retention. This can involve constructing stormwater drains and retention ponds.

Data: Non-committed runoff is considered 75% of total runoff, highlighting the potential for stormwater harvesting.

3. Canal Network Optimization

Enhancing the existing 304 km canal network can increase surface water availability for irrigation, reducing reliance on groundwater. Currently, only 6% of the irrigated area is covered by surface water.

Implementation: Improve water distribution efficiency and reduce seepage losses. This can involve lining canals and installing water-saving devices.

Data: The gross irrigated area is 303,586 ha, with about 90% relying on groundwater.

4. Water Conservation through Crop Selection

Promoting water-efficient crops can reduce agricultural water demand, enhancing sustainability. Gonda's agricultural sector is a significant user of groundwater.

Implementation: Encourage farmers to adopt crops like pulses and millets alongside traditional crops. This can reduce water demand by up to 30%.

Data: The net irrigated area is 263,672 ha, with a high potential for water conservation through crop selection.

5. Artificial Recharge Structures

Constructing artificial recharge structures like percolation tanks and recharge wells can stabilize groundwater levels. Gonda's groundwater extraction is 79.30% of its potential.

Implementation: Enhance groundwater recharge through these structures. This can involve constructing recharge shafts in areas with high water table fluctuations.

Data: The annual groundwater recharge is 150,356.64 ham, with a net availability of 142,127.02 ham.

Implementing these alternative strategies can significantly enhance water management in Gonda district. Moreover, initiatives like the **Amrit Sarovar scheme** are moving the district in the right direction by focusing on water conservation and sustainability. The Amrit Sarovar scheme aims to construct or rejuvenate water bodies across the country, enhancing groundwater recharge and supporting rural water security. By integrating such national initiatives with local water management strategies, Gonda district can ensure more efficient use of its water resources and promote sustainable development.

Table 5 Alternative Water Management Methods for Gonda District:

Alternative Method	Rationale
Micro-Catchment Management (Bunds, Contour Trenches)	Captures and channels runoff effectively on flat terrain, improving localized infiltration and soil moisture retention.
Recharge Pits & Trenches	Directs runoff into the soil in a controlled manner, enhancing groundwater recharge where aquifers are accessible.
Farm Ponds or Small Check Dams	Provides localized water storage for individual farms or communities, reducing the need for large-scale infrastructure while still supporting irrigation and groundwater recharge.
Infiltration Galleries	Efficiently directs surface water into subsurface aquifers, reducing evaporation losses and maximizing recharge in permeable zones.

A.8. DESIGN SPECIFICATIONS

Due to the diverse nature of the 149 pond sites across Gonda district, no single uniform design approach could be applied. Each pond restoration was customized based on specific local topography, water flow patterns, and existing infrastructure. Key design considerations included:

1. **Pond Geometry and Size:** Individual ponds varied significantly in depth, width, and storage capacity. The design was tailored to ensure optimal rainwater collection, percolation, and groundwater recharge based on available land contours and soil characteristics.

2. **Embankment Construction:** Margins were reinforced with compacted earth and stone pitching to reduce erosion and ensure structural stability.
3. **Desilting and Deepening:** Excavation was conducted to enhance the effective storage volume. The depth was adjusted depending on the soil profile and water table level.
4. **Overflow Management:** Controlled overflow mechanisms were introduced in select ponds to prevent flooding during peak rainfall events.

A.9. IMPLEMENTATION BENEFITS TO WATER SECURITY

PP has significantly contributed to improving groundwater recharge and water conservation in Gonda District. These restored ponds function as effective artificial recharge structures, strategically designed to enhance rainwater harvesting, groundwater replenishment, and overall water retention.

By implementing this initiative, PP has demonstrated how targeted interventions like pond restoration can effectively address regional water security challenges. The success of these 151 recharge structures highlights the potential for scaling such solutions across other districts facing similar issues. Through careful planning, site selection, and technical execution all overseen by PP this model can serve as a blueprint for achieving broader quantitative targets for groundwater recharge and sustainable water management in vulnerable regions.

The rejuvenation of villages and 149 ponds in Gonda District, Uttar Pradesh, is a strategic initiative aimed at enhancing water security and promoting sustainable rural development.

The rejuvenation efforts focus on:

- **Rainwater Harvesting and Groundwater Recharge:**

  The design of these ponds is centred on maximizing the capture and storage of rainwater during monsoon seasons, ensuring that water remains available throughout the year. With optimized outlet channels and efficient drainage systems, the ponds are adept at collecting a significant volume of rainwater. This stored water not only provides an immediate source of water for various uses but also facilitates groundwater recharge. As water gradually percolates through the pond bed, it replenishes the underlying aquifers, thereby stabilizing the local water table and mitigating the impacts of seasonal water scarcity. This dual functionality enhances overall water security for the community and supports sustainable rural development.

- **Enhanced Water Security:**

  The rejuvenated ponds are designed to capture and store rainwater efficiently, ensuring that a reliable supply of water is available throughout the year. This is particularly important during the dry season when natural water sources are scarce. In addition to direct water storage, these ponds play a crucial role in recharging groundwater. As rainwater percolates through the pond sediments, it helps to replenish the aquifers, thus maintaining or even increasing the local water table. This dual benefit of direct storage and groundwater recharge provides a robust defense against water scarcity in the region.

- **Agricultural and Livelihood Support:**

The ponds serve as a dedicated source of water for irrigation, which is essential for enhancing agricultural productivity in an agrarian economy. With a consistent water supply, farmers can plan their cropping cycles more effectively, leading to improved yields and reduced crop failures during periods of irregular rainfall. Furthermore, the ponds are multi-purpose in nature; they also provide water for livestock. These activities diversify rural income sources, offering communities additional avenues for economic stability and growth beyond traditional farming.

- **Economic Upliftment:**

Implementation of the pond rejuvenation project generates significant local employment opportunities. The construction phase, which involves land preparation, excavation, and building of embankments, creates jobs for local laborers and skilled workers. This not only improves the livelihoods of those directly employed but also stimulates the local economy through increased spending and the development of ancillary services. By using locally available materials and sustainable construction practices, the project minimizes costs and fosters economic self-sufficiency in rural areas.

- **Community Empowerment and Ownership:**

A key aspect of this initiative is its strong emphasis on community participation. Local community leaders, Gram Panchayats, and job card holders, are actively involved in every stage of the project; from planning and construction to ongoing maintenance. This inclusive approach instills a sense of ownership and responsibility within the community, ensuring that the ponds are well cared for and maintained in the long term. Additionally, public events and community-driven maintenance programs help to strengthen social bonds and local pride, further cementing the project's sustainability.

- **Environmental and Ecological Benefits:**

The pond rejuvenation project also offers significant environmental advantages. By creating a stable water body, the ponds become habitats for a variety of aquatic flora and fauna, thereby enhancing local biodiversity. The strategic plantation of trees, such as Neem, Peepal, and Banyan, around the pond perimeters helps control soil erosion and stabilizes the embankments. These green belts contribute to better micro-climate regulation by cooling the surrounding areas and mitigating the impact of heat. Overall, these measures improve the local ecosystem and increase resilience against the adverse effects of droughts and floods.

- **Advanced Monitoring and Sustainability:**

To ensure the long-term effectiveness and integrity of the ponds, the project incorporates advanced monitoring tools such as geo-tagging, mobile app tracking, and remote sensing technologies. These tools enable real-time monitoring of water levels, structural health, and maintenance needs, ensuring that any issues are promptly addressed.

Regular audits and technical inspections, carried out by local Panchayat representatives and government officials, safeguard the ponds' functionality and structural integrity. This proactive approach not only extends the lifespan of the infrastructure but also reinforces the community's capacity to manage and sustain the resource over time.

Each of these implementation benefits contributes to a comprehensive strategy that not only addresses immediate water scarcity but also lays the foundation for sustainable rural development and enhanced community resilience.

A9.1 OBJECTIVES VS OUTCOMES

Water scarcity is a critical challenge for rural communities, where access to reliable water sources directly impacts agriculture, livelihood, and the overall well-being of the residents. This concept note outlines a focused initiative for the construction or rejuvenation of 149 ponds (Amrit Sarovars), designed to optimize water storage, enhance groundwater recharge, and create a sustainable, community-centric water resource.

Objectives:

Objective	*Explanation*
Water Conservation Construct or rejuvenate ponds with a minimum pondage area of 1 acre and a capacity of ~10,000 cubic meters.	The initiative aims to address water scarcity by either constructing new ponds or rejuvenating existing ones. With each pond designed to cover at least 1 acre and hold roughly 10,000 cubic meters of water, the project ensures significant rainwater capture during monsoon seasons. This stored water serves as a critical reserve for periods of drought, providing a dependable source of water for both domestic and agricultural uses.
Groundwater Recharge Utilize the ponds as natural recharge basins.	Beyond storing water, these ponds function as natural recharge basins. As water seeps from the pond into the soil, it helps to elevate the groundwater levels over time. This process is particularly valuable in rural settings where groundwater forms a vital part of the water supply, thereby reducing the community's reliance on inconsistent rainfall.
Agricultural Support Provide a consistent water source for irrigation.	Beyond storing water, these ponds function as natural recharge basins. As water seeps from the pond into the soil, it helps to elevate the groundwater levels over time. This process is particularly valuable in rural settings where groundwater forms a vital part of the water supply, thereby reducing the community's reliance on inconsistent rainfall.
Agricultural Support	A consistent water supply is essential for reliable

Provide a consistent water source for irrigation.	irrigation. By securing water availability through these ponds, farmers can expect improved crop yields and better quality produce.
Environmental & Aesthetic Enhancement Restore ecological balance and create community spaces.	Integrating tree and shrub plantations around the ponds will promote biodiversity and transform the area into a recreational and cultural hub for local communities.

Outcomes:

Outcomes	Explanation
Enhanced Water Security - Reliable water storage will help mitigate drought conditions by providing a perennial source of water for domestic and agricultural use. - Improved groundwater recharge will contribute to a higher water table, benefiting the broader community.	The ponds capture and store significant volumes of water, ensuring a steady supply during dry spells. Gradual seepage into the ground boosts the water table, reducing reliance on erratic rainfall.
Economic Upliftment - A consistent water supply will boost agricultural productivity, enabling better crop yields. - Employment opportunities will be generated during construction and maintenance.	Reliable irrigation and diversified income sources support local economies, while job creation during project phases further uplifts rural livelihoods, stabilizing the community's economy.
Environmental & Social Benefits - Increased green cover and enhanced biodiversity will lead to improved ecological balance. - The pond area will serve as a community gathering spot, promoting cultural unity and recreational activities.	Restoration of natural habitats through plantation improves the local ecosystem. Additionally, transforming the pond area into a community space encourages social interactions and cultural activities.

A9.2 INTERVENTIONS BY PROJECT OWNER / PROPONENT / SELLER

The Project Proponent (PP) undertook a series of strategic interventions to achieve the desired outcome of restoring 149 ponds in Gonda District, Uttar Pradesh. These interventions were designed to improve water retention, enhance groundwater recharge, farmers often practice multiple cropping to maximize land use efficiency and increase their income and support sustainable water management in the region.

To restore these water bodies, the PP ensured that each pond underwent excavation, deepening, and desilting. These measures were crucial in improving storage capacity, facilitating rainwater harvesting, and enhancing groundwater recharge. Clear boundaries were established, and embankments were reinforced to prevent soil erosion and maintain structural integrity.

In addition to physical restoration, the PP ensured that all pond areas were verified to fall under government-designated schemes, ensuring clear land titles and eliminating disputes. Regulatory requirements were carefully managed, with the necessary permits and approvals secured to maintain compliance throughout the restoration process.

While technical tasks were carried out by qualified agencies, the PP maintained oversight to ensure that all activities aligned with project objectives and followed best practices for water conservation.

The initiative also contributed to social and economic benefits by generating local employment opportunities during both the restoration phase and ongoing maintenance. This engagement helped foster community involvement, ensuring long-term sustainability and care for the restored ponds.

Through these coordinated efforts, the PP successfully transformed neglected water bodies into effective water management systems, strengthening water security, supporting agriculture, and promoting environmental stability in the region.

A.10. FEASIBILITY EVALUATION

The economic feasibility of the project has been assessed as positive based on several key factors. Prior third-party audit reports have indicated that while the upfront investment for constructing or rejuvenating 151 ponds is significant, the long-term benefits including enhanced agricultural productivity, and local employment opportunities justify the expenditure.

These audits recommend a phased implementation approach to manage costs effectively, leverage diverse funding sources such as government schemes and community contributions, and enforce strict cost control and contingency planning measures.

Overall, the projected improvements in water security and economic upliftment are expected to yield a favourable cost-benefit ratio, supporting the project's long-term sustainability and positive impact on rural development in Gonda district.

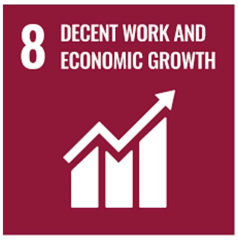
A.11. ECOLOGICAL ASPECTS & SUSTAINABLE DEVELOPMENT GOALS (SDGS):

The rejuvenation of 149 ponds in Gonda District addresses multiple Sustainable Development Goals (SDGs) by tackling key environmental and socio-economic challenges. By capturing rainwater and recharging groundwater, the project improves water availability, contributing to better access to clean water and sanitation. It also plays a vital role in climate resilience by mitigating runoff, preventing soil erosion, and reducing land degradation.

The restoration of these ponds further revitalizes natural habitats, supports local biodiversity, and enhances ecosystem services such as flood control and water filtration. Improved water retention positively impacts agriculture by maintaining soil moisture, contributing to food security and improved livelihoods. Additionally, better access to cleaner water reduces health risks, supporting overall community well-being.

By strengthening rural ecosystems, this initiative contributes to sustainable rural development and fosters a more resilient microclimate. Below are the specific SDGs that this project aligns with.

SDG Goals	SDG Target	Project Activity/Component	Impact
1 NO POVERTY	**SDG 1.5:** Build resilience of the poor and those in vulnerable situations	Improved water availability for agriculture and domestic use, along with job creation through MGNREGS activities (Mahatma Gandhi National Rural Employment Guarantee Scheme.)	Reduces rural poverty by improving livelihoods, ensuring stable incomes, and enhancing food security
2 ZERO HUNGER	**SDG 2.3**: Double the agricultural productivity and incomes of small-scale food producers	Provision of water for irrigation rejuvenated ponds	Boosts agricultural productivity by providing a consistent water source, thereby increasing food security and rural incomes
6 CLEAN WATER AND SANITATION	**SDG 6.1**: Ensure universal and equitable access to safe and affordable drinking water for all	Construction/Rejuvenation of ponds to provide reliable water sources for domestic and community use	Increases water accessibility and quality, benefiting households in rural areas by providing a safe, continuous supply of water
	SDG 6.4: Increase water-use efficiency and ensure sustainable withdrawals and supply of freshwater	Creation of Amrit Sarovars with defined water holding capacity (approx. 10,000 cubic meters) and associated water conservation measures	Enhances water storage and sustainable water management, reducing wastage and promoting efficient use of available water resources
	SDG 6.6: Protect and restore water-related ecosystems	Rejuvenation of degraded ponds, bund strengthening, and implementation of plantation and landscaping around water bodies	Restores and conserves aquatic ecosystems, enhancing biodiversity and the overall health of freshwater resources

	SDG 6.B: Support and strengthen the participation of local communities in water management	Community involvement via MGNREGS employment, active local stewardship, and participatory monitoring (e.g., geo-tagging)	Empowers local communities to take charge of water resource management and maintenance, ensuring long-term sustainability
	**SDG 8.5**: Achieve full and productive employment and decent work for all	Job creation through construction, maintenance, and ancillary activities under MGNREGS and local participation	Generates employment opportunities and enhances rural economic growth through direct and indirect job creation
	**SDG 11.5:** Reduce the adverse effects of natural disasters	Integrated water management strategies to reduce flood risks and drought impacts	Improves community resilience by controlling runoff, enhancing water security, and reducing the risk of climate-related disasters
	**SDG 13.1**: Strengthen resilience and adaptive capacity to climate-related hazards and natural disasters	Integrated water management and groundwater recharge initiatives embedded in the project design	Increases community resilience to climate variability (e.g., droughts and floods) by securing water resources and promoting adaptive strategies
	**SDG 15.1**: Conserve, restore, and promote sustainable use of terrestrial and inland freshwater ecosystems	Restoration and rehabilitation of natural ponds through desilting, bund construction, and ecological landscaping	Enhances the conservation and sustainable use of inland water ecosystems, supporting biodiversity and ecosystem services

	SDG 15.3: Combat desertification, restore degraded land and soil	Desilting and land improvement activities around ponds, including soil stabilization and bund reinforcement	Reverses land degradation and improves soil quality, which in turn supports local agriculture and ecosystem resilience
	**SDG 17.16:** Enhance the global partnership for sustainable development	Collaboration with government bodies, community groups, NGOs, and technology providers to improve project outcomes	Strengthens multi-stakeholder partnerships that ensure resource mobilization, technical support, and capacity building for long-term success
	SDG 17.17: Encourage and promote effective public, public-private, and civil society partnerships	Active engagement with multiple stakeholders for project implementation and monitoring	Ensures sustained community involvement and institutional support for the project's ongoing success

A.12. RECHARGE ASPECTS:

A.12.1 Solving for Recharge

Ultimately, the volume of groundwater recharge benefit to the subbasin is the most critical aspect for such MAR activities. Groundwater recharge is quantified as the deep percolation of surface water applied during project implementation. Using a field-scale water budget, deep percolation can be calculated as the difference between all other inflows and outflows, per the equation below, with each other inflow and outflow being quantified:

Recharge = Rainfall + Surface Inflow – Evapotranspiration – Surface Outflow – Change in Storage

Evapotranspiration & Other Data: https://datameet-pune.github.io/open-water-data/docs/open-water-data-paper.pdf (or available under Documents Section- Water Data Guide)

Root Zone = The root zone is comprised of the upper portion of the soil where water extraction by roots occurs, above the depth at which water infiltrates to the groundwater system. The depth to the bottom of the root zone varies by crop, but typically extends up to seven feet.

Surface Inflow= Surface inflows can be either directly measured or calculated from measured values. In fields directly served by metered lift pumps or metered gates, the volume of surface inflows to the field can be directly measured or calculated from totalized measurements. Typical accuracies of pipe flow measurements range from 1-12 percent. In fields that are indirectly supplied with surface water, surface inflows may need to be calculated from upstream and downstream flow measurements, or through theoretical or empirical equations relating available data to field surface inflows. For example, fields served from canals measured using weirs, or fields served from canals that deliver water to multiple locations downstream of a measurement device may require site-specific calculations to quantify surface inflows to a specific field. Low-cost in-field measurements can also be made by setting up flashboards at the measurement location and correlating the "runup" of an unsubmerged weir overflow on a flat weir stick to the flow rate using standardized equations. Typical accuracies of "runup" or indirect flow measurements may exceed 10 percent, depending on site conditions and the accuracy of measurement data.

To monitor surface inflows, project owners may record flow data, maintain irrigation logs, and maintain logs of any other parameters required to calculate field deliveries, depending on the unique conditions of their field. Project owners may also consider using mobile flow monitoring equipment to measure or verify surface inflows.

Surface Outflows: To monitor surface outflows, users may record flow data or water level data and maintain logs of any other parameters required to calculate outflows, depending on the unique conditions of their project activity. Pressure transducers and data loggers may be used to automatically monitor water levels, or users may install wooden stakes to manually monitor water depths.

Change in Storage = the change in surface storage, or average ponded water depth, can be calculated from measured and observed changes in water surface levels at points throughout the project field. Over *the annual project implementation period, the total change in surface storage is typically zero, provided that the surface of a field is dry and free of ponded water at the start and end of the project.*

While the uncertainty of each inflow and outflow will vary based on field conditions and measurement devices, typical uncertainties associated with each water budget component are summarized in the table below. The uncertainty of deep percolation (i.e., recharge) can then be calculated from these other uncertainties, for example following the process described by Clemmens and Burt (1997). Users can use the following table to eliminate uncertainty from their estimates.

Water Budget Component	Typical Estimated Uncertainty (%)	Description
Surface Inflow	NA	Typical range of accuracy from meters to minimum delivery accuracy requirements of delivery and diversion measurement devices.
Precipitation	2%	Typical range of accuracy from field-level rain gauges to extrapolation of local weather station data
Surface Outflow	6%	Typical range of accuracy from meters to estimated outflow relationships
Evapotranspiration	10%	Clemmens and Burt, 1997; typical accuracy based on free water surface evaporation coefficient.

Change in Storage	10%	Estimated accuracy of change in storage calculation based on field scale water budget calibration to observed water levels.
Deep Percolation	5%	Typical range of calculated accuracy from field-scale water budget results (fields ranging from 56 to 125 acres)
Total	**33%**	

Other factors of uncertainty to consider when quantifying recharge are:

- Deep percolation does not immediately recharge the groundwater system. There is a time lag between when deep percolation occurs through the root zone and when that water reaches the saturated groundwater system.
- Subsurface inflows and outflows can occur through the groundwater system. While deep percolation may supply water to the groundwater system, that water may migrate away from the field along groundwater gradients.

Groundwater recharge can also be monitored and verified through groundwater level measurements at groundwater wells adjacent or near to the project activity. For instance, groundwater level measurements collected before, during, and after implementation can potentially help verify that net recharge is occurring, especially in well-positioned wells with continuous monitoring.

A.13. QUANTIFICATION TOOLS

The following tools are recommended to be used to estimate the quantity of RoUs in the absence of tamperproof flow meters or systems that accurately quantify the volume in litres or m3 of water being harvested or conserved by the project activity.

Water Harvesting Potential

Water harvesting potential of any catchment area is to be calculated under this methodology for each given year that the RoU is being claimed. The total amount of water that is received from rainfall over an area is called the rainwater legacy of that area. The amount that can be effectively harvested is called the water harvesting potential.

The formula for calculation for harvesting potential or volume of water received or runoff produced or harvesting capacity is given as:-

Harvesting potential or Volume of water utilized (liters) = Area of Catchment/Roof/Collection Zone (m^2) X Amount of rainfall (mm) X Runoff coefficient*uncertainty Factor (1-0.33= 0.67)

Runoff coefficient

Runoff coefficient for any catchment is the ratio of the volume of water that runs off a surface to the volume of rainfall that falls on the surface. Runoff coefficient accounts for losses due to spillage, leakage, infiltration, catchment surface wetting and evaporation, which will all contribute to reducing the amount of runoff.

Runoff coefficient varies from 0.5 to 1.0. Rooftop rainwater harvesting systems shall use the runoff coefficient equal to 1 as the rooftop area is totally impervious. Eco-climatic conditions (i.e. Rainfall quantity & Rainfall pattern) and the catchment characteristics are considered to be most important factors affecting rainwater harvesting potential .

Type of Area	Recommended Runoff Coefficient (K)
Residential	0.3 to 0.5
Forest	0.5 to 0.2
Commercial & Industrial	0.9
Parks and Farms	0.05- 0.3
Asphalt or Concrete Paving	0.85
Road surface	0.8-0.9

Annual Rainwater harvesting Potential

Annual rainwater harvesting potential is given by $V = K \times I \times A$

Where, V=Volume of water that can be harvested annually in liters.

K = Runoff coefficient
I = Annual rainfall in (mm)
A = Catchment area in (m^2)

Runoff Coefficient (K) selected = 0.3

Rainfall intensity in the catchment area

The rainfall intensity of the area is to be found out from the local IDF -curves (intensity-duration frequency curve), if IDF-curve is not available, rainfall intensity default of 100 mm/hr shall be considered (this value is for tropical countries, with catchment areas smaller than 150 ha).

Analysis of the catchment area

The gradient of the catchment area, terrain configuration in the catchment area can be found out from the State Maps and the Runoff factors for the different terrain are given as below. Coefficient of Runoff Values for Different Terrains

Terrain type	'C' Coefficient of Runoff (Flat terrain)
Clayey soil	0.82
Parking area	0.75
Roads and other concrete works	0.85
Green belts	0.1

Rainfall infiltration method

In areas where ground water level monitoring is not adequate in space and time, rainfall infiltration may be adopted. The norms for rainfall infiltration contributing to ground water recharge are evolved, based on the studies undertaken in various water balance projects in India. The norms for recharge from rainfall under various hydrogeological situations are recommended in the following table

Table : Rainfall infiltration factor in different hydrogeological situations

S.No	Hydrogeological situation	Rainfall infiltration factor
1	Alluvial areas	
	a. Sandy Areas	20 to 25 percent of normal rainfall
	b. Areas with higher clay content	10 to 20 percent of normal rainfall
2	Semi-Consolidated Sandstones (Friable and highly porous)	10 to 15 percent of normal rainfall
3	Hard rock area	
	a. Granitic Terrain	
	(i) Weathered and Fractured	10 to 15 percent of normal rainfall
	(ii) Un-Weathered	5 to 10 percent of normal rainfall
	b. Basaltic Terrain	
	(I) Vesicular and Jointed Basalt	10 to 15 percent of normal rainfall
	(ii) Weathered Basalt	4 to 10 percent of normal rainfall
	c. Phyllites, Limestones, Sandstones, Quartzites, Shales, etc.	3 to 10 percent of normal rainfall

Additional Guidance on Groundwater Recharge estimates and guidelines:

UWR recommends following the estimates and guidelines outlined here http://cgwb.gov.in/documents/Manual%20on%20Artificial%20Recharge%20of%20Ground%20Water.pdf

Interim Report on Project wise Impact Assessment of Completed Demonstrative Artificial Recharge Projects of XI Plan (http://cgwb.gov.in/Ar-reports.html)

Quantification of ROUs

Table 6 ROUs Table

Year	Crediting Period (DD/MM/YYYY)	RoUs (1000 Litres)/Year
		Total
2014	1/1/2014-31/12/2014	102771
2015	1/1/2015-31/12/2015	82544
2016	1/1/2016-31/12/2016	124681
2017	1/1/2017-31/12/2017	96422
2018	1/1/2018-31/12/2018	103588
2019	1/1/2019-31/12/2019	142181
2020	1/1/2020-31/12/2020	168334
2021	1/1/2021-31/12/2021	200825
2022	1/1/2022-31/12/2022	151332
2023	1/1/2023-31/12/2023	132830
2024	1/1/2024-31/12/2024	152602
Total ROUs		1458110

A.14. UWR RAINWATER OFFSET DO NO NET HARM PRINCIPLES

PP has undertaken a pioneering water conservation initiative in the Gonda District through the rejuvenation of 149 ponds, addressing the region's persistent water challenges. This effort targets areas where overdevelopment has depleted groundwater reserves, ensuring improved water availability for both agricultural and domestic use.

By carefully restoring these ponds, the project enhances rainwater capture and prevents unutilized water from flowing into storm drains or sewers. The ponds act as vital reservoirs, conserving excess water during the monsoon season and ensuring availability during dry periods, enhancing resilience against droughts.

The project has notably improved agricultural productivity by enabling farmers to expand from single-season to multi-season cropping and diversify into higher-value crops. By stabilizing water availability, rural incomes have increased, contributing to better food security and economic stability.

Women’s participation has been actively encouraged through community engagement programs, where they have taken key roles in pond maintenance, construction, and documentation processes. This involvement has fostered skill development and improved their standing within the community.

The initiative has also played a crucial role in preventing soil erosion and preserving fertile land, ensuring long-term soil health. Furthermore, the rejuvenated ponds have revitalized local ecosystems, supporting the return of native vegetation and wildlife.

By integrating environmental restoration with social and economic impact, PP’s efforts in Gonda District have set a powerful example of sustainable water management, ensuring long-term resilience and prosperity for the region.

A.15. SCALING PROJECTS-LESSONS LEARNED-RESTARTING PROJECTS

The Gonda District Pond rejuvenation project has strong potential for scaling by integrating additional water management practices and leveraging existing frameworks to expand its impact.

Scaling Opportunities and Integrated Practices

1. **Integration with Agricultural Irrigation Systems:**
   The rejuvenated ponds can be linked to efficient irrigation systems such as drip or sprinkler irrigation, improving water-use efficiency in nearby farmlands. This integration would optimize water distribution, particularly for multi-season cropping, reducing overall water demand while boosting agricultural productivity.

2. **Incorporating Wastewater Recycling:**
   While Gonda's project currently focuses on rainwater capture and groundwater recharge, adding decentralized wastewater treatment units could provide an additional water source. Treated wastewater can be reused for non-potable purposes such as irrigation, landscape maintenance, and community sanitation facilities. This practice would further conserve fresh water resources.

3. **Expanding Community Participation and Training:**
   Building on the existing involvement of local women in pond maintenance, the project can scale further by forming dedicated water management committees. These groups can oversee maintenance, promote water conservation practices, and provide training to community members, strengthening long-term sustainability.

4. **Replicating the Project in Similar Regions:**
   The successful rejuvenation model in Gonda can be replicated in other drought-prone districts with depleted groundwater reserves. By adapting the design to local hydrology and community needs, the project can be expanded to improve water security in additional vulnerable areas.

5. **Funding:**
   Revenue generated from water credit sales could support scaling efforts. Funds could be reinvested to revive abandoned ponds or introduce new water conservation infrastructure in underserved communities.

6. **Urban Integration for Enhanced Water Management:**
   While the Gonda project primarily targets rural areas, its principles can be adapted for urban settings. Integrating restored ponds with urban rainwater drainage networks could reduce urban flooding risks while promoting groundwater recharge.

Addressing Potential Duplication Risks

1. **Overlap with Existing Rainwater Harvesting Efforts:** Coordination with ongoing state-led initiatives such as *Amrit Sarovar Mission* and MGNREGS pond-revival programs is essential to avoid redundant efforts. Aligning resources and responsibilities will ensure efficient implementation and prevent duplication.
2. **Balancing Cost Efficiency:** Certain scaling strategies, such as wastewater recycling or advanced irrigation systems, may have higher initial costs. Ensuring the financial feasibility of these expansions is critical, and partnering with gram panchayat to secure funding or utilize UWR water credits can mitigate this challenge.

By combining these strategies, the Gonda pond rejuvenation initiative can expand its reach, enhance water security, and contribute to improved rural and urban water management practices.

Annexure I

INDIA NON JUDICIAL

Government of Uttar Pradesh

IN-UP67065781477637W

e-Stamp

Signature ....R........
ACC Name Rajnigandha Singh
ACC Code UP14773304
Mobile No. 7355029355

Certificate No.	:	IN-UP67065781477637W
Certificate Issued Date	:	31-Aug-2024 03:00 PM
Account Reference	:	NEWIMPACC (SV)/ up14773304/ LUCKNOW SADAR/ UP-LKN
Unique Doc. Reference	:	SUBIN-UPUP14773304308606448338 38W
Purchased by	:	INNOVATORS INFRATECH LLP
Description of Document	:	Article 5 Agreement or Memorandum of an agreement
Property Description	:	MOU
Consideration Price (Rs.)	:	
First Party	:	DISTRICT GANGA COMMITTEE FOR DISTRICT GONDA
Second Party	:	INNOVATORS INFRATECH LLP
Stamp Duty Paid By	:	INNOVATORS INFRATECH LLP
Stamp Duty Amount(Rs.)	:	100 (One Hundred only)

NOTARY GOVT. OF INDIA

NOTARIAL NOTARIAL

MEMORANDUM OF UNDERSTANDING

For **Environmental Offsets (Rainwater Offset Units ROU)**

Consultancy & Engineering, Procurement, and Construction (EPC) Services

This Memorandum of Understanding (hereinafter referred to as "MOU") is being executed on the **Seventh day of October 2024**, having Certificate No. **IN-UP67065781477637W**

BY AND BETWEEN

District Ganga Committee for District Gonda is a committee formed under the MINISTRY OF JAL SHAKTI (Department of Water Resources, River Development and Ganga Rejuvenation) (NATIONAL MISSION FOR CLEAN GANGA), represented through Ex-officio Members; Divisional Forest Officer (DFO); Hereinafter referred to as **"DGC"**

AND

Innovators Infratech LLP (LLPIN: ACD-6448) a limited liability partnership incorporated under the Limited Liability Partnership Act 2008, having its Registered Office at Flat No. 108, Silver Height Badashahnagar, Mahanagar, Lucknow, U.P. 226006, represented through its Designated Partners, Mr. Yash Tilak Awasthi and Mr. Agnishekhar Shukla; hereinafter referred to as **"IIL"**

For Innovators Infratech LLP For Innovators Infratech LLP

प्रभागीय वनाधिकारी गोण्डा वन प्रभाग गोण्डा Designated Partner Designated Partner Page 1 of 8

Figure 5 Signed MOU

Annexure II

:: आदेश ::

इनोवेटर्स इन्फ्राटेक एलएलपी, महानगर, लखनऊ के पत्र दिनांक–12.07.2024 द्वारा अवगत कराया गया है कि जनपद–गोण्डा में एक पायलट प्रोजेक्ट के माध्यम से UNFCCC के ग्रीन क्रेडिट इनिशिएटिव के अन्तर्गत वॉटर क्रेडिट दिलवाने हेतु परामर्श सेवायें प्रदान किये जाने के लिए आवेदन किया गया है। वर्णित कार्यक्रम को सुचारु रूप से चलाये जाने एवं सूचनाओं के संकलन हेतु किसी अधिकारी को नोडल नियुक्त करने का अनुरोध किया गया है, जिससे कि जनपद–गोण्डा में पायलेट प्रोजेक्ट हेतु चयनित सभी तालाबों की सूचनायें एवं अन्य विभागीय सूचनाओं का संकलन किया जा सके, तत्क्रम में जिलाधिकारी/जिला कार्यक्रम समन्वयक महोदया, गोण्डा के पृष्ठांकन आदेश दिनांक–30.07.2024 के अनुपालन में निम्नानुसार अधिकारियों को नोडल अधिकारी नामित किया जाता है–

1. जिला विकास अधिकारी, गोण्डा।
2. अतिरिक्त कार्यक्रम अधिकारी–मनरेगा, जिला मुख्यालय, गोण्डा।

अतः नामित नोडल को आदेशित किया जाता है कि संस्था–इनोवेटर्स इन्फ्राटेक एलएलपी, महानगर, लखनऊ के द्वारा वांछित सूचनाओं को समय समय पर उपलब्ध कराना सुनिश्चित करें।

(एम० अरुन्मोली)
(आई.ए.एस.)
मुख्य विकास अधिकारी
गोण्डा।

कार्यालय मुख्य विकास अधिकारी, गोण्डा।

पत्रांक /आ०लि०/लेखा/2024–25 दिनांक– 07.2024

प्रतिलिपि–निम्नांकित को सूचनार्थ एवं आवश्यक कार्यवाही हेतु प्रेषित –

1. जिलाधिकारी/जिला कार्यक्रम समन्वयक, गोण्डा।
2. उपायुक्त, श्रम–रोजगार, गोण्डा।
3. जिला विकास अधिकारी, गोण्डा।
4. अतिरिक्त कार्यक्रम अधिकारी–मनरेगा, जिला मुख्यालय, गोण्डा।
5. समस्त खण्ड विकास अधिकारी/कार्यक्रम अधिकारी, गोण्डा।
6. इनोवेटर्स इन्फ्राटेक एलएलपी, महानगर, लखनऊ।

01/08/2024

मुख्य विकास अधिकारी
गोण्डा।

Figure 6 Work Order from Govt. Authority to PP

Annexure III

कार्यालय जिला विकास अधिकारी, गोण्डा

पत्रांकः 1628(A)/ आ0लि0 / 2024—25 दिनांक 07.10. 2024

LETTER OF INTENT

To:
M/s. Innovators Infratech LLP,
(LLPIN: ACD-6448),
(GSTIN: 09AAKFI3502M1Z6)
108, Silver Height Badshahnagar,
Mahanagar, Lucknow.
Uttar Pradesh-226006

Subject: Appointment of exclusive consultant for Development and Assistance for Validation, Registration, Verification, Issuance and Trading of Carbon and Water Credits.

Reference: Your proposal **Reference No. IIL/YS/2024-25/CCWC/1010** with **Annexure - 1** and **Annexure - 1 (Continued)** dated **24.05.2024**

Dear Sir,

In continuation to your proposal to our office with the above-mentioned reference Number, we are pleased to appoint you for the services mentioned in the above-referred proposal, for providing consultancy services for as mentioned under:

Nature of the work	Exclusive rights for Development and Assistance for Validation, Registration, Verification, Issuance & Trading of Water Credits
Scope of the work	As per the enclosed list in the Proposal/Offer Letter Annexures.
Services fees	50% of the water credits accumulated since the project's inception. (it includes all costs related to reports, verification, etc.)

As per the above details, you are hereby directed to start the work **immediately**.

07/10/2024
जिला विकास अधिकारी
गोण्डा

Figure 14 Letter of Intent

Annexure IV

Figure 15 Actual Image of Pond

BHULEKH
Uttar Pradesh

खाता विवरण (अप्रमाणित प्रति)

ग्राम का नाम : [illegible] परगना : [illegible] तहसील : करनैलगंज जनपद : गोंडा फसली वर्ष : 1424-1429 (01 जुलाई, 2016 से 30 जून, 2022) भाग : 1 खाता संख्या : 00455

खातेदार का नाम / पिता पति संरक्षक का नाम / निवास स्थान	खसरा संख्या	क्षेत्रफल (है.)	आदेश	टिप्पणी
श्रेणी : 6-1 / अकृषिक भूमि - जलमग्न भूमि ।				
जलमग्न भूमि //	1ख	0.1500		
	65	0.0200		
	171मि.	1.4120		
	310	0.2230		
	331	0.0160		
	378	0.0410		
	440मि.	0.1050		
	466मि.	1.2870		
	529	0.3880		
	610	0.1660		
	666	0.6640		
	667	0.2910		
	741	0.0530		
	758	0.1980		
	791	0.0450		
	841	0.0200		
	848	0.0490		
	909	0.1050		
योग	18	5.2330		

कृपया उक्त खसरे की प्रस्थिति (भूखंड (गाटा) के बाद प्रश्न /विक्रय /भू-नक्शा /नामांतरण वही) हेतु खसरा संख्या पर क्लिक करे

Disclaimer: [illegible]

Software Powered By: National Informatics Center, Uttar Pradesh State Unit, Lucknow.

CSC ID

Figure 16 Area of the Pond – Bhulekh, Uttar Pradesh

Annexure V

कार्यालय जिला विकास अधिकारी गोण्डा।

पत्रांक 56 / वाटर-क्रेडिट / 2024-25 दिनांक 5-04.2025

INNOVATORS INFRATECH LLP
(LLPIN:ACD-6448)
108, Yash Silver Heights, Badshahnagar,
Mahanagar, Lucknow,
Uttar Pradesh-226006

GONDA AMRIT SAROVAR SELF-DECLARATION

Subject: Amrit Sarovar data for water credit project

I hereby declare that the information stated below is true and valid to the best of my knowledge.

Gonda Amrit Sarovar

Pond No	Sarovar ID	Latitude	Longitude	Area (m^2)	Capacity (m^3)	Depth (m)	Commissioning Date	Inspection of work completion
1	120882	27.112575	82.4474	9000	2775	2.80	Pre 2014	15/07/2023
2	106855	27.09202	82.5345	6500	5752	0.93	Pre 2014	08/07/2024
4	54559	27.12903	82.4820	7500	8000	1.08	Pre 2014	28/06/2024
8	107011	27.09658	82.4912	4100	10000	2.44	Pre 2014	04/07/2024
9	54470	27.07178	82.4364	6000	10000	2.38	20/06/2022	22/06/2024
11	54568	27.07268	82.4778	11000	11000	1.10	Pre 2014	05/07/2024
12	54518	27.06391	82.4640	5000	12000	2.67	05/06/2022	06/06/2024
13	54986	27.08473	82.5393	18500	80000	18.60	Pre 2014	09/06/2024
22	34947	26.9311	81.9043	4500	6021	1.50	01/09/2022	10/09/2022
25	34943	26.9084	81.9306	700	6250	1.54	10/08/2022	13/08/2022
26	117807	26.9003	81.8639	10700	6254	1.19	Pre 2014	13/07/2024
29	121068	26.9272	81.8288	15000	6524	1.24	Pre 2014	24/08/2022
31	34039	26.9098	81.8566	4046	7000	1.73	Pre 2014	04/08/2022
33	46218	26.8791	81.9109	5024	7542	1.50	Pre 2014	23/09/2022
34	34946	26.8979	81.8929	20000	9050	1.72	20/05/2022	30/05/2022
35	58974	26.93742	82.4672	3700	3000	0.81	Pre 2014	19/06/2024
38	44016	27.00718	82.3461	8250	6672	1.55	Pre 2014	14/08/2023
39	132654	26.97796	82.4636	2500	7150	2.86	Pre 2014	25/05/2024
43	44278	26.96247	82.3673	6500	9179	1.41	Pre 2014	29/08/2024
45	59293	26.98164	82.3502	11000	10000	2.44	14/06/2018	23/01/2024
46	116669	26.9802	82.4033	4100	10000	2.44	Pre 2014	18/01/2024
53	59108	26.99212	82.4295	4700	10000	2.13	Pre 2014	19/03/2024
56	57343	26.98178	82.3612	12200	12000	0.92	01/05/2022	10/07/2024
59	53657	27.03462	81.6654	2000	3000	0.74	Pre 2014	14/09/2022
60	53625	27.01062	81.6778	2000	3000	1.50	30/08/2022	15/07/2024
61	53645	27.06269	81.6531	4200	4300	0.89	01/06/2020	05/09/2022
62	53642	27.100444	81.7069	10000	4500	0.14	Pre 2014	17/07/2023
66	53634	27.038695	81.6334	4300	8000	1.00	01/01/2016	04/07/2023
67	23920	27.1092	81.5967	3400	10000	2.47	01/01/2023	27/08/2023
68	23922	27.11153	81.6115	4000	10000	2.47	Pre 2014	18/09/2022
69	23924	27.12229	81.6448	2000	10000	2.47	Pre 2014	12/07/2024
71	23926	27.07952	81.5869	1600	10000	2.47	01/01/2023	08/07/2022
72	45215	27.08026	81.7213	4600	10000	2.47	Pre 2014	19/08/2022
73	23928	27.08904	81.7303	1300	10000	7.69	Pre 2014	22/09/2022
74	23916	27.01347	81.6911	4451	10000	2.25	Pre 2014	13/08/2022
76	54091	27.141228	81.7378	4046	4000	0.99	Pre 2014	15/05/2023
78	53087	27.124388	81.7393	3000	4500	1.03	01/01/2023	14/06/2023
79	53077	27.126829	81.7399	2500	5000	1.12	Pre 2014	15/08/2022
80	53257	27.11116	81.8308	5700	5000	1.12	Pre 2014	20/07/2022
83	118010	27.199002	81.7196	2500	8000	1.80	Pre 2014	28/03/2023
85	26475	27.105	81.7851	3300	10000	2.47	Pre 2014	07/01/2023
86	26476	27.15323	81.8345	3000	10000	2.47	01/05/2023	11/05/2023
87	26477	27.191392	81.6651	3000	10000	3.33	Pre 2014	03/07/2022
88	26478	27.189538	81.7304	4700	10000	2.38	01/01/2023	29/04/2023
92	54738	27.31478	81.9876	3600	5600	1.56	Pre 2014	25/05/2023
93	105408	27.36236	82.0834	3025	6050	2.00	Pre 2014	19/08/2022
96	114549	27.23401	82.0078	4500	8092	1.80	Pre 2014	29/06/2023
97	34933	27.26585	82.0792	5300	8333	1.57	Pre 2014	17/07/2023
99	34925	27.24304	82.0368	4000	8935	2.75	Pre 2014	12/07/2023
102	54449	27.29534	82.0758	5800	11200	1.93	Pre 2014	12/07/2023
103	118234	27.28339	82.1475	4500	11200	2.49	Pre 2014	26/03/2024
104	53909	27.24937	82.0747	10000	11340	1.08	Pre 2014	02/08/2023
105	34924	27.29319	82.1239	9470	12500	1.09	Pre 2014	30/07/2022
106	34928	27.34505	82.1292	6000	12600	2.52	Pre 2014	13/07/2022
107	54665	27.33161	82.0456	8020	15500	2.01	14/06/2022	15/09/2022
108	34929	27.22553	82.0459	5250	15750	3.00	Pre 2014	08/06/2023
111	106161	27.3115	82.0095	6500	23500	3.62	Pre 2014	26/01/2024
112	44403	27.35409	82.0665	13104	25000	1.91	Pre 2014	21/10/2023
115	23892	27.05992	82.0127	10000	10000	1.00	Pre 2014	27/06/2022
121	54051	27.05366	82.0763	2600	10000	3.85	Pre 2014	13/05/2023
124	22296	27.08988	82.0491	6500	10000	1.00	01/05/2018	20/08/2022
125	53996	27.13741	82.0688	4000	11000	2.75	01/06/2022	29/06/2024
126	24798	27.11193	81.8617	4400	11000	1.09	Pre 2014	01/08/2022
128	23890	27.071003	82.0790	3880	11500	1.15	Pre 2014	25/07/2022
130	23882	27.09711	82.0633	7000	12000	1.19	Pre 2014	07/07/2022
132	54990	27.190447	81.8242	7500	8000	1.98	Pre 2014	01/09/2022
133	56789	27.24004	81.8470	4046	10000	2.47	Pre 2014	17/08/2022
138	118378	27.26604	81.8308	10500	10000	1.79	Pre 2014	31/08/2022
141	56854	27.23423	81.8836	4046	10200	2.52	Pre 2014	03/09/2022
142	109749	27.24794	81.8205	3400	10237	3.01	Pre 2014	14/08/2022
143	57085	27.25821	81.8662	4000	10400	2.60	Pre 2014	21/07/2022
145	114948	27.24954	81.8386	4000	11475	2.87	Pre 2014	10/03/2023
146	55585	27.20453	81.8168	7284	11520	1.58	Pre 2014	05/07/2023
148	57377	27.23325	81.6734	7700	12000	1.56	Pre 2014	06/09/2022
151	109112	27.26728	81.8496	8000	13612	3.36	Pre 2014	02/05/2023
153	121268	27.31436	81.7369	17000	21600	0.22	Pre 2014	05/07/2024
154	55718	27.17067	81.7777	19700	36750	2.67	Pre 2014	14/07/2023
156	54560	27.04857	82.2563	3000	10000	3.33	Pre 2014	08/09/2022
158	42597	27.016943	82.2814	5000	3094	0.75	16/10/2016	02/11/2022
164	54520	27.06083	82.1944	67000	6300	1.49	Pre 2014	30/10/2023
167	44017	27.077455	82.1449	2600	7500	1.00	01/01/2016	26/06/2023
169	53422	27.01956	82.3398	3600	10000	2.78	Pre 2014	14/10/2022
171	53266	27.12365	82.2359	4200	10500	2.50	Pre 2014	17/03/2024
172	54078	27.07683	82.1598	4500	10500	2.50	Pre 2014	04/09/2022
175	44092	27.04094	82.1922	6000	15000	2.50	Pre 2014	13/08/2023
180	54640	27.071425	82.2135	8100	18500	2.28	Pre 2014	29/12/2023
181	42033	27.0535	82.2607	11000	20000	1.82	Pre 2014	06/05/2023
183	54604	27.13676	82.2380	6800	27200	4.00	Pre 2014	11/08/2022
184	54106	27.1117	82.2387	9710	34200	3.00	Pre 2014	09/03/2024
187	102223	27.2207	82.1191	3500	6000	1.71	Pre 2014	28/06/2023
190	43699	26.884907	82.1343	2426	3640	1.50	Pre 2014	02/05/2023
192	26482	26.88675	82.2045	2516	3774	1.50	Pre 2014	24/07/2022
193	43789	26.90205	82.2375	2546	3820	1.50	Pre 2014	16/05/2023
194	26489	26.99119	82.2259	3008	4512	1.50	Pre 2014	24/09/2022
195	52211	26.88232	82.1212	4800	4875	1.50	Pre 2014	14/10/2022
200	55721	26.93959	82.1945	4200	5775	1.38	Pre 2014	24/05/2023
201	121068	26.90355	82.2252	2000	6500	1.50	Pre 2014	10/09/2022
203	26485	26.84604	82.1903	5800	6825	1.18	Pre 2014	20/05/2023
204	52479	27.00146	82.2252	4500	6936	1.54	Pre 2014	07/07/2023
206	26479	27.00299	82.2368	7600	7314	1.50	01/06/2022	24/08/2022
207	61397	26.856244	82.1927	11000	8050	0.73	Pre 2014	17/06/2024
210	52763	26.86102	82.2202	12000	10000	0.83	01/06/2023	19/08/2023
211	72541	26.84279	82.2083	6667	10000	1.50	Pre 2014	06/06/2023
216	61446	26.84501	82.2251	16000	10000	0.63	Pre 2014	27/06/2023
220	54113	27.1962	82.0012	4402	3910	0.89	01/05/2024	22/03/2024
221	104055	27.156304	82.0296	7500	4180	0.56	Pre 2014	08/05/2023
222	43023	27.22899	81.9953	7200	4307	0.60	Pre 2014	16/08/2023
223	132029	27.16963	82.0130	7200	4530	0.63	Pre 2014	08/09/2023
224	111976	27.241035	81.9913	2200	4790	1.50	Pre 2014	30/05/2023
227	43136	27.2515	81.9868	4206	6532	1.55	Pre 2014	02/09/2022
229	132046	27.198273	82.0286	4129	7402	1.79	Pre 2014	05/07/2023
231	43440	27.163477	82.0603	4105	10480	2.55	Pre 2014	12/09/2022
233	43208	27.207	81.9920	8130	12490	1.54	Pre 2014	27/06/2024
234	43346	27.185328	82.0326	3500	13480	3.85	01/06/2022	18/07/2022
235	43278	27.2027	82.0165	17000	18402	1.53	01/06/2019	03/09/2022
241	55389	27.00076	81.7487	3869	7208	1.86	Pre 2014	15/06/2024
244	53346	26.96556	81.7694	3600	7920	2.20	01/01/2021	07/06/2023
245	110015	27.09088	81.7574	4002	8002	2.00	01/06/2023	14/06/2023
246	53395	27.08479	81.7520	3200	8008	2.50	Pre 2014	10/07/2023
249	102214	27.03457	81.8145	4500	9000	2.00	Pre 2014	25/04/2023
250	55379	27.04717	81.8582	3500	9600	2.74	Pre 2014	15/06/2023
251	41496	26.96827	81.7949	3825	10000	2.17	01/01/2023	05/05/2023
252	44510	27.0239	81.8531	5250	10500	2.00	Pre 2014	24/07/2022
254	41386	27.07101	81.7839	5100	12750	2.50	Pre 2014	20/08/2022
255	44029	27.06788	81.8166	7000	14000	2.00	Pre 2014	22/09/2022
256	131382	26.96198	81.8406	3900	14250	3.65	01/01/2023	19/08/2023
257	66962	27.39339	82.0981	2750	3500	1.27	Pre 2014	20/09/2022
258	66579	27.34505	82.0042	2025	4500	1.73	Pre 2014	24/07/2022
259	104930	27.27264	81.8986	107730	48000	0.01	Pre 2014	04/072024
261	54371	27.32251	81.9754	3944	5200	1.32	Pre 2014	31/05/2023
265	136963	27.38256	81.9502	3000	7800	2.60	Pre 2014	13/07/2024
266	54476	27.38069	81.9576	4200	7800	1.86	Pre 2014	01/09/2022
267	68614	27.41192	81.9595	4550	8500	1.87	Pre 2014	10/05/2023
268	54913	27.31424	81.8759	4300	8700	2.02	Pre 2014	13/07/2024
270	137468	27.34114	82.0464	2500	9600	3.84	Pre 2014	10/07/2024
271	55625	27.34786	82.0229	5000	9800	1.96	Pre 2014	30/05/2024
272	54429	27.38063	81.9727	4900	10500	2.14	Pre 2014	04/07/2024
273	68569	27.28788	81.9529	4000	10500	1.75	Pre 2014	24/09/2022
275	53861	26.845937	81.9370	4100	4000	0.98	Pre 2014	13/07/2024
277	46364	26.91733	82.0175	4050	4000	0.93	Pre 2014	18/08/2022
280	53660	26.87014	82.0390	2000	4000	0.89	Pre 2014	03/09/2022
282	53501	26.87197	81.9889	4200	4895	1.17	Pre 2014	06/08/2022
283	53663	26.913664	82.0326	1000	5000	1.22	Pre 2014	20/08/2022
284	53666	26.99528	82.0213	6300	5000	1.22	01/01/2016	19/04/2024
288	105612	26.99614	82.0673	1800	5500	1.25	01/01/2017	06/09/2022
290	132742	26.86092	81.9641	4400	5700	1.30	Pre 2014	21/07/2023
294	53498	26.8681	81.9510	3100	6000	1.43	01/01/2022	18/08/2022
300	105571	26.985127	82.0531	4200	6500	1.55	Pre 2014	05/08/2022
301	53673	26.866283	81.9873	4200	7000	1.67	Pre 2014	21/09/2022
305	53490	26.935436	81.9526	4500	9000	2.00	Pre 2014	17/07/2024
308	23908	26.977792	82.1390	4650	10000	1.79	Pre 2014	18/06/2023

जिला विकास अधिकारी,
गोण्डा।

पत्रांक 56 / वाटर-क्रेडिट / 2025-26 दिनांक उक्त।
प्रतिलिपि-निम्नांकित को सूचनार्थ एवं आवश्यक कार्यवाही हेतु प्रेषित ।
1- जिलाधिकारी महोदया, गोण्डा।
2- मुख्य विकास अधिकारी महोदय, गोण्डा।

जिला विकास अधिकारी,
गोण्डा।

Figure 17: Self Declaration of Gonda Amritsarovar Pond projects

Annexure VI

Figure 7 Digital Monitoring – Amrit Sarovar Portal

Link: [Mission Amrit Sarovar]

Annexure VII

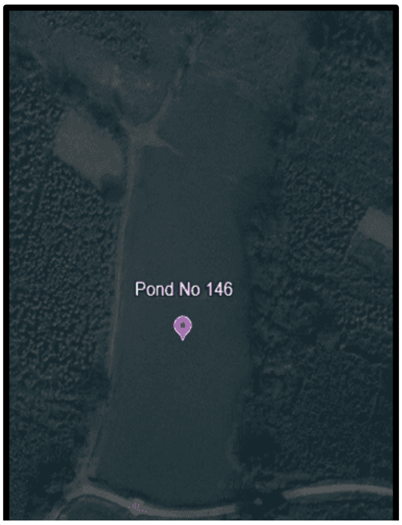


Figure 8 Satellite image from 2014-2024
Geo Cordinates: 27.20453, 81.8168