

RAMAN RIVER REJUVENATION MODEL



प्रस्तुतकर्ता

भारतीय नदी परिषद् व नीर फाउंडेशन



CURRENT SCENARIO OF RIVERS IN INDIA

There is a systematic network of small rivers in India. Due to these small rivers, extra water reaches all the big rivers like Ganga, Yamuna, Kaveri, Narmada and Indus. The tributaries and sub-tributaries of a big river together determine the water supply area of any big river. At present, all types of rivers, small and big, in India are facing three types of problems: water shortage, pollution and encroachment. Big rivers are somehow able to bear this blow, because water remains in them throughout the year, but small rivers have almost turned into drains or have dried up. To understand deeply why such problems have arisen with the rivers, we will have to know and understand the scenario of the last five decades.

Many changes took place in the country after the Green Revolution. Some side effects of some changes during the Green Revolution have started becoming visible with the passage of time. During the Green Revolution period from 1966-67 onwards, as soon as the farmers got the freedom to extract ground water by installing private tube wells, their dependence on small rivers and other surface water sources started decreasing. Gradually, as the number of private tube wells increased, ground water started being used in large quantities, in such a situation the ground water level also started falling continuously. Due to the falling level of underground water, the connection between ground water and surface water started breaking. In such a situation, small rivers became rivers flowing only during the rainy season, because the water coming from the ground gradually stopped. With the passage of time, due to human activities, the annual average rainfall has also started to decrease; whatever rainfall is received, it is received in a short period of time and not throughout the year.

Meanwhile, due to increasing industrialization and urbanization in the country, a new tragedy of water pollution started emerging. Industries started disposing their untreated liquid waste into these dried-up small rivers either directly or





through a drain. During this time, rural youth started migrating from villages and settling in towns and cities in search of employment and good opportunities. No town or city in the country was prepared for such a large population, so there was bound to be chaos. Due to lack of proper and proper means of treatment, the domestic effluent of cities and towns started going directly into the rivers through rain drains. This was the reason that when liquid waste from industries and homes started flowing in the dried-up streams, the present generation also considered these rivers as drains. Even today, about 20 percent of the liquid waste going into these rivers is from industries and about 80 percent is from towns and cities.

The chemical traces of liquid waste from industries and cities that have been flowing in these rivers for the last three to four decades have gradually entered the groundwater. This is the reason that today the groundwater of the villages on the banks of rivers is no longer potable. In such a situation, human suffering has come to light that the society which once settled, grew, grew, and developed on the banks of rivers, is today on the verge of destruction due to groundwater pollution. While pollution of rivers is adversely affecting the health of the society living on the river banks, agriculture and animals and birds are also suffering from it. Various studies have found that traces of chemical elements have also been found in vegetables and other food items grown on the river banks. Due to groundwater pollution, all kinds of social evils have started growing in the villages on the river banks, due to which a large population is facing family troubles and due to additional economic burden, society is getting buried in debt. While society is yearning to get out of this grave problem, society and the government are also thinking of a permanent solution. This is the reason why various orders of the National Green Agency and governments are also working on schemes to provide relief in their own ways. We must make a clear understanding that the root of this problem lies only in the death of rivers due to pollution.

In the current adverse conditions of rivers, the system

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and society are trying to improve it in their own ways. It is a fact that the pace of improvement is slower than the speed with which things are deteriorating. There are various reasons behind this, in which the main reason emerges is lack of mutual coordination. The good efforts being made at the local level for the improvement of rivers are proving inadequate due to lack of coordination. Various types of obstacles are visible in implementing good efforts from one place to another. It is often seen that in many cases there is no good coordination between the system and the society. A big problem is that river improvement works are not permanent. Due to not being able to properly understand the sequence of formation, deterioration and improvement of the river and not being able to move ahead with the proposals of community importance in a timely manner, our work is not being made permanent. The condition of rivers has not deteriorated in a day, hence, to improve them we will have to work sequentially and make permanent improvements. For this, the river improvement strategy of the Indian River Council seems suitable and better for the country.

Clean and uninterrupted rivers are essential for rich biodiversity. Only in rich biodiversity can human society lead a healthy life. The remains and stories of the Indus Valley Civilization prove that India's prosperity grew along the banks of rivers. There is also solid information available that as soon as those rivers became violent due to any reason, those civilizations also came to an end. It is understood from the ancient knowledge tradition that if friendly behavior is maintained with the rivers, then the rivers provide life, but if they are tampered with or their capacity is challenged, then they also try to end the life. Have strength.

There are four types of rivers flowing within the boundaries of any district, state, or country.

- Such rivers which come from the first district and flow through the second district and enter the third district.
- Such rivers which come from the first district and join some other river or end in the second district.





- Such rivers which start from the second district and go to the third district.
- Such rivers which start in another district and join or end in another river in another district.

River Rejuvenation Format

After deeply studying the problems of rivers in India at present and successfully implementing them on two rivers of Ganga-Yamuna Doab, East Kali and Neem, we have prepared a 'River Rejuvenation Model'. Based on this river Rejuvenation model, the source Rejuvenation work of East Kali, the main tributary of Ganga, was done for which it received the National Water Award from the Government of India in the year 2020. Based on this format, the work of Rejuvenation of Neem River originating from Hapur district of Uttar Pradesh was started, which was praised by the Honorable Prime Minister in the 'Mann Ki Baat' program on June 18, 2023.

Based on our experience of working with rivers for the last 20 years, we have prepared this inclusive and sustainable river Rejuvenation model, which is suitable for the current scenario. Before preparing this draft, the current conditions of small rivers were thoroughly investigated. The reasons for the current condition of the rivers emerged and a strategy was prepared to improve them. Solutions to all the reasons due to which this condition of the river occurred, one by one, have been suggested in this river Rejuvenation model. Through this river Rejuvenation format, we can remove the suffering in society that now small rivers cannot be revived. This model of river Rejuvenation is a sufficient medium to convert the despair of society regarding small rivers into hope. This river rejuvenation model will attack the root of the problem and return the river to its old form. The work of the Indian River Council is progressing based on this river Rejuvenation model. Based on this model, the country is making efforts for the revival of various rivers, in which Morwa, Noon Dakshin, Kanhan, Karvan, Hindon, Krishna, Loomb, Banganga, Mandakini, Ban and Sot rivers are prominent.





This is a very simple river Rejuvenation format. This river Rejuvenation model can be applied to any small river in the country. From the measures suggested in this, some results are visible immediately and some results take a long time. Whichever river will be implemented on this model and if 70 to 80 percent of its work is completed, then that river can return to its existence in five to ten years. Along with river Rejuvenation, this format will also bring prosperity among the society living on the river banks, because this format works by connecting the society living on the river banks with itself. In all the works of this format, activities at one kilometer from both the banks of the river are very effective. Most of the works suggested in this format will be successful only with the collective efforts and cooperation of society and the government. Ten points have been decided in this river Rejuvenation model.

Ten Points of River Rejuvenation Model

- Knowledge of river
- Identification of river land
- Public awareness
- Rejuvenation of river source
- Liquid-solid waste management
- Cleaning of river stream
- Pond Rejuvenation
- Intensive Afforestation
- Chemical free agriculture
- Construction of small dams

RIVER KNOWLEDGE

Knowledge of the river before work.

Only then will the river works be built.

First, it is necessary to have the following information about the river for which we have to start the work of improvement or Rejuvenation.

- History of the river (people's legends and scientific aspects)
- Social and religious importance of the river





- All documents related to the river (Government/Non-Government)
- Accurate information about river origin
- Information about river length and flow area
- Water condition in the river
- Current problems of the river

Before starting the work of river Rejuvenation, it is first necessary to know the origin of the river correctly. The medium of flow of every rainy river is the result of the mixing of both ground water and surface water. Surface water has been mixing with ground water at the place where the level of ground water is highest (see page i.e. formation of water bubbles on the ground surface). That means it is the lowest and most waterlogged place in the area. The places where dense waterlogging occurs develop as the origin point of a rainy river. Till about the last 3 to 4 decades, the sources of rainy rivers remained watery and encroachment free. As the ground water level kept going down, the residents encroached on the land considering it to be vacant and this was the reason that gradually the source of rainy rivers got encroached upon.

To know the origin of the river, it can be done through British Gazetteer, documents related to rivers and drains of the Irrigation Department and GIS mapping. The British Gazetteer contains information from the origin of the river till its merger with another river. Similar information is recorded in the documents of the Irrigation Department. Information about the length of the river, its water catchment area, the place of its origin and other rivers and streams found in it is also recorded in the documents of the Irrigation Department. The British Gazetteer can also be accessed online while Irrigation Department documents can be obtained from the Drainage Department of the local Irrigation Department. Information regarding the origin of the river is recorded in these documents. The origin can be properly identified through KHASRA-KHATAUNI & SIJRE (Government Land Documents) from the concerned tehsil. In this work, if help is taken from the Tehsil of the concerned area, the Patwari of





that area, the engineer of the local irrigation department, old experts of the area and some aware citizens, then the work will be easily possible.

MARKING OF RIVER LAND

The river will be free from encroachment.

Only then will it become watery.

Most of the land along the banks of rainy rivers is encroached upon in some way or the other. Wherever any rainy river starts, there will be a pond, lake, lake, empty space, or agricultural work going on. Beyond the river origin, both the banks of the river will be found encroached throughout the entire length of the river flow. At some places farmers have built their fields by merging them with the river and at some places others have encroached upon the river land. At some places, where the area of river flow is more, farmers start doing agricultural work even inside the river. In such a situation, just like the origin of the river, it is necessary to free the land on both sides of the river flow area from encroachment. For this, by coordinating with the local administration and giving proper information about the river to the administration, the land in the river origin and river flow area should be identified. Through which districts does the total length of the river flow? According to him, in each district of river flow, this work will have to be done through the administration of different districts. The river land should be measured and marked on both the banks of the river. To prevent the river land from being encroached upon again in the future, pillars/pillars should be installed on the identified river land, or a deep trench should be dug. On both sides of the river flow, there is almost as much land as the river flows. At some places more land is also available. At some places it is also seen in the documents that the flow of the river is in the land of a farmer while the farmer is doing agricultural work on the land of the river, in such a situation, help of local administration should be taken to avoid dispute.





PUBLIC AWARENESS

When hands will extend from village to village.

River improvement work will be done.

Public awareness work towards the river should be promoted in villages, towns, and cities within one kilometer from both the banks of the river. During public awareness, we will have to make and explain our strategy on both the subjects. Firstly, there should not be any kind of damage to the river through the village, like any kind of liquid or solid waste should not enter the river; secondly, if knowingly or unknowingly the river is being harmed due to any work of the village, it should be rectified. should go. The following work can be done to create public awareness on the river banks –

- Street drama
- Street meetings
- wall writing
- Competitions in schools
- Traveling from one village to another
- Chapal
- Seminars

Such public awareness program should be conducted so that all the residents of the river banks agree to fulfill their responsibilities towards the river. Public awareness should be created among the villagers regarding all the issues which are necessary for river Rejuvenation. Its main subjects are chemical-free agriculture, plantation, pond conservation, balanced use of water, garbage disposal and cleanliness. If the information about all the work that a common citizen can do for the revival of his river reaches the village/town/city through public awareness, then its message will continue to be spread to other people of the society. In all these works, help of block/tehsil/district schemes should also be taken. Public awareness can be expanded by including village schools in this.





RIVER HEAD REJUVENATION

When there is water at the origin.

Only then will there be flow in the river.

The mother of any river is the water present at its source, that is why it is necessary that the source of the river should be watery. While doing river Rejuvenation work, the first effort should be made to revive the river source. This work can be done in the following way.

First, identify the origin point of the river according to revenue records, gazetteer, and other related records.

To inspect the source of the river. Is the amount of land at the river origin present on the spot as is recorded in the revenue records? The common citizen cannot have accurate information about this. For this, the sub-district magistrate/tehsildar of the concerned tehsil will have to get the land measured at the origin of the river. For this work, cooperation of high officials, dignitaries and public representatives of the concerned area can also be taken. If there is any encroachment on the land at the origin of the river or not, this will also become clear through the Tehsil team.

If there is encroachment on the river source land, then the first task will be to free that encroached land from encroachment. For this, first you should sit and talk with the encroachers and other eminent people of the society and explain to them the importance of the river and tell them that if not today then tomorrow you will have to vacate this land because the government never gives up its land. Even after this, if success is not achieved then cooperation of local administration should be taken.

It is necessary to see that any kind of domestic effluent or untreated liquid waste from industries is not coming from anywhere at the source of the river. If this is happening, then first this pollution should be controlled with the help of the local pollution control department. This must be stopped, or a proper solution must be found.





If there is neither any kind of encroachment nor any kind of pollution coming there at the origin of the river, then the work should be started immediately.

Let us assume that if there are 10 hectares of land at the origin of the river, then a lake of about 8 to 10 meters depth should be constructed there, leaving a path of ten meters all around. So that rainwater can enter the lake from all sides, it is necessary to make ways for water to flow from under the tracks. It will be decided on the land where the river originates what type of lakes, ponds and dams can be built there. For this, we should also take advice from the local minor irrigation department, irrigation department or any subject expert.

The source of any rainy river should be such that maximum rainwater can be collected there. If it is possible to bring excess water from a canal or river there, then this can also be done. Every possible and appropriate arrangement should be made so that the source of the river remains filled with water throughout the year. Intensive plantation should also be done around the point of origin with the advice of the local forest department or any subject expert. When the river source gradually starts filling with water, the ground water level there will gradually start rising. The day the groundwater level comes near the surface, the water will automatically start flowing beyond the point of origin. The flow of this water will be the first step for that river to start moving on its path again.

LIQUID-SOLID WASTE MANAGEMENT

Garbage effluent should not go into the river.

The river flow will become clean.

In the process of liquid and solid waste management, the work of any social organization or other groups working for the river is limited, because stopping domestic and industrial effluents is a complex process while its treatment is a matter related to technology. While a lot of rules and regulations are used in this work, its financial burden is also high. In such a situation, social organizations or groups can help the villages





by using natural water purification methods to stop the flow of dirty water into the river.

Although there will be less participation of villages in this work while more participation of towns and cities, for this, awareness work should be done in villages also. While the liquid and solid waste generated from cities and towns will have to be managed, the industries that dump their liquid and solid waste into the river through any means will have to be controlled. Governments are making efforts for this. It is the responsibility of the Pollution Control Department, i.e. the government, to ensure that ETP is installed in every industry and that it is operated properly. In every city and town, there should be STP for liquid waste and proper arrangement for disposal of solid waste. It is the responsibility of the local body i.e. again the government. Society should stop the villages whose liquid or solid waste goes into the river directly or through a drain and adopt easy natural methods for its treatment. The help of a subject expert can also be taken in this. For the flow of the river to be uninterrupted and clean, it is also necessary for its flow path to be clean. It is very important to completely clean the dirt from the river stream or flow path once.

CLEANING OF RIVER STREAM

When the river route is clear.

Only then will the continuous flow of water flow.

To improve the flow of any river, it is essential to clean the main channel of its flow area. It is often seen that the flow areas of small rivers remain littered with filth, or they are illegally encroached upon. Although all the rivers are cleaned naturally once a year during the rainy season, the river should remain clean throughout the year. Because domestic effluents and liquid and solid waste from industries are coming into the rivers from somewhere, the river starts getting polluted again after the rains. If there is no pollution in a river, but if there is not enough water in it to flow, then different types of dirt start accumulating in the river. Water hyacinth spreads on a large scale in some





rivers. In those rivers where the flow of water is negligible, a program of cleaning the river stream should be conducted once a year. In such a situation, we should clean the river flow area from both the banks and the bottom. This work can be done in a better way by fixing the responsibility of cleaning the area of the river flow within the village/town/city limits. The dirt coming out of the river should not be dumped on the banks of the river but should be dumped so far away from the river so that it does not come back into the river through any means.

POND CONSERVATION

Let's pick up the pickaxe.

Clean your pond.

When the ponds in the villages up to one kilometer from both the banks of the river are clean and filled with water, the groundwater level of the village will rise and the amount of pollution present in the groundwater will gradually reduce. With the rise in ground water level, it will become easier for the river to flow, because the river flows with both ground water and surface water. The ponds of all the villages within one kilometer of both the banks of the river should be identified and revived based on revenue records. If there is a lake or pond etc. on the banks of the river, then it is necessary to revive it also. There is any government land lying on the banks of the river where a pond can be constructed, then this should also be done with the help of the local administration. For this the following process can be adopted planning for pond revival after seeing the present condition of those ponds. To include those ponds in the related schemes of the district for the revival of the ponds. Reviving some ponds with the help of society.

- Identifying the ponds of villages on the river banks.
- Preparing data of Khasra number and area of those ponds after dredging them.
- Plan for pond Rejuvenation after seeing the current condition of those ponds.
- To include those ponds in the pond related schemes of





the district for the Rejuvenation of the ponds.

- Revival of some ponds with the help of society.

INTENSIVE AFFORESTATION

The river banks remain empty.

Let the tree take care of it.

Intensive plantation should be done on rivers and pastureland etc. within a radius of one kilometer of both the banks of the river. In this, such plants should be planted on the river banks which collect water from their roots and also prevent erosion. Special schemes should be run for farmers to plant orchards in the villages falling within this radius of one kilometer, so that more and more farmers can plant orchards on their agricultural land. By doing this, while there will be more rainfall in a few years, the ground water level will also rise which will help the river to flow clean and uninterrupted. In the work of intensive afforestation, full cooperation should be taken from the local forest department, local society, and social organizations.

CHEMICAL FREE AGRICULTURE

The harvest will be chemical free.

The river will flow only when it is good quality.

Agriculture up to one kilometer from both banks of the river will have to be made chemical free. The use of any kind of chemicals and pesticides in any crop will have to be stopped and farming will have to be done through natural methods. With this, crop products will be pure and nutritious, and the quality of agricultural soil will improve. Due to the continuous use of chemicals since the Green Revolution, their particles are slowly seeping into the groundwater. Chemical-free agriculture will also improve the quality of ground water and the elements of chemicals and pesticides that flow into the river with irrigation water or rainwater will also be prevented. In this work, benefit can be taken from the agricultural schemes of the Agriculture Department, Horticulture Department, Minor Irrigation





Department, Forest Department of the concerned district and the schemes of the local Agricultural University or Agricultural Science Centre.

CONSTRUCTION OF SMALL DAMS

When a dam is built on the stream.

Then the gap in the river will be filled.

When disposal of liquid and solid waste in the river is completely prohibited, then small dams should be constructed at certain distances as per the circumstances. Where there is no pollution of any kind in the river, small dams should be built. Through these dams, while we will retain water on the river surface, we will also be successful in sending it into the groundwater. This will also provide water for residents, birds and animals etc. The work of building dams on the river should be done only after getting technical support from the local minor irrigation department, soil conservation department, irrigation department or subject experts regarding the type and distance of the dams. Dams can also be built at the source of the river to regulate the flow of the river as per the circumstances.

Note: If 80 percent of the work on the above mentioned 10 basic mantras is completed, then that river will return to its existence in 5 to 10 years. To implement all the 10 basic mantras, it is necessary to prepare a detailed outline for a particular river.

WORKING STRATEGY

MY RIVER-MY INITIATIVE (MRMI) program can be conducted to implement the river Rejuvenation model, because the tasks of ten basic mantras can be completed systematically through it. MRMI should be started as a social initiative for river improvement. Its objective is to connect and support the river bank communities with the positive efforts of the governments. All the work done under this program can be done only with the cooperation of society and local administration. This is such a social initiative in which any common man can contribute in





any way to the conservation of his river. Under this initiative, the society living on the river banks and the society affected by the river in any way can contribute at their level by understanding their responsibilities. To carry out the work of Rejuvenation of any river, the only thing that the volunteers must do is to get complete information about all the government schemes being run in the villages and among them, the schemes related to the ten basic mantras of the river should be implemented on the ground. Only by doing this can the river benefit.

A systematic method is necessary to conduct the MRMI work. To carry forward the work on the concerned river, the work can be carried forward by forming a council for that river. For example, we can understand through 'A' River Council's

'A' RIVER COUNCIL

'A' River Council is a group that will take all social decisions regarding the arrangement of clean and uninterrupted flow of that river and its tributaries. This will be a social organization formed at the society level. This organization will care about its river and will also take decisions for its betterment. All decisions will be taken under Indian rules and regulations and will be taken without any discrimination. At the administrative level, it is necessary to inform in writing the decisions taken by the 'A' River Council in relation to 'A' to the District Magistrate/Chief Development Officer of all the districts in the river flow and to get their consent in the works under the authority of the administration. will be. Technical support to 'A' River Council will be provided by the Indian River Council.

STRUCTURE OF 'A' RIVER COUNCIL

'A' River Council will be formed consisting of heads and secretaries of villages situated on the river banks in all the districts of the river flow area. Out of all these heads, based on majority, one will be elected as the President, Vice President, and Secretary of the Council. The President and Vice-President will be selected from among the heads while Savich will be





selected from among the village secretaries. 'A' River Council can also constitute separate councils in the districts of its flow area. By doing this there will be no problem in working from an administrative point of view. Along with this, if there are any other tributaries of river 'A', then a separate river council can be formed for them also. All these will be part of the BHARTIYA NADI PARISHAD (Indian River Council).

VILLAGE COMMITTEE

'A' River Council will include heads of villages along the river flow. It will be the responsibility of the head of each village to form a committee of ten or more members of such aware people under his chairmanship in his village which will carry out the work of improving the rivers falling in that village. The village secretary will be the secretary of this committee. The village head will appoint an informed person as the vice president based on majority. The village committee meeting will be held on the second day of every month at a place and time decided with the consent of the head and secretary. In the meeting, old works will be reviewed, and new works will be outlined. The work of writing the agenda of the meeting and the decisions taken during the meeting will be done jointly by the Vice President and the Secretary. A register will be created for this.

Although this village committee will also be a part of 'A' River Council, but only the village head and village secretary will participate in the meetings of the council.

FUNCTIONING OF 'A' RIVER COUNCIL

'A' River Council will be held on one date of every month at a place (the place must be a village on the banks of the river) and at a time decided with the consent of the Chairman and Secretary. In the meeting, past work will be reviewed, and future work will be planned. The work of writing the agenda of the meeting and the decisions taken during the meeting will be done jointly by the Vice President and the Secretary. If the cooperation of the administration is also taken in making plans for the decisions





taken in the meeting and in implementing those works, then the work will be completed in a better way.

- 'A' River Council has the right to take decisions.
- 'A' River Council will have the following powers to take decisions.
- Related to river cleaning.
- Related to plantation on river banks.
- Regarding conservation of ponds in river banks or riverside villages.
- Regarding stopping liquid and solid waste in the river.
- Regarding public awareness in river bank villages.
- Related to making dams in the river.

Apart from this, 'A' River Council will be able to take any decision regarding the betterment of the river under the administrative rules and regulations. It will be the responsibility of the Secretary of 'A' River Council to bring to the notice of the District Magistrate of the district all matters related to the decisions and works of 'A' River Council, correspondence, and approval of those works etc.

PUBLICITY

A WhatsApp group of members of 'A' River Council will be formed. All the members of all 'A' River Councils will be included in this. Apart from this, people taking part in river improvement works in the village can also be included with the consent of the Chairman of the Council. From time to time, news regarding river works and meeting decisions can also be given to local newspapers with the consent of the Council Chairman. To make this program successful, help of various publicity media can be taken. This includes Facebook, Twitter, mobile app, portal, website, logo, mouthpiece (Hindi-English-local language), pamphlets, pamphlets, stickers, banners, wall writing and documentary films etc.

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