Critical Water Resources, Kookal and Kagguchi Town Panchayat

A report by Keystone Foundation, 2018

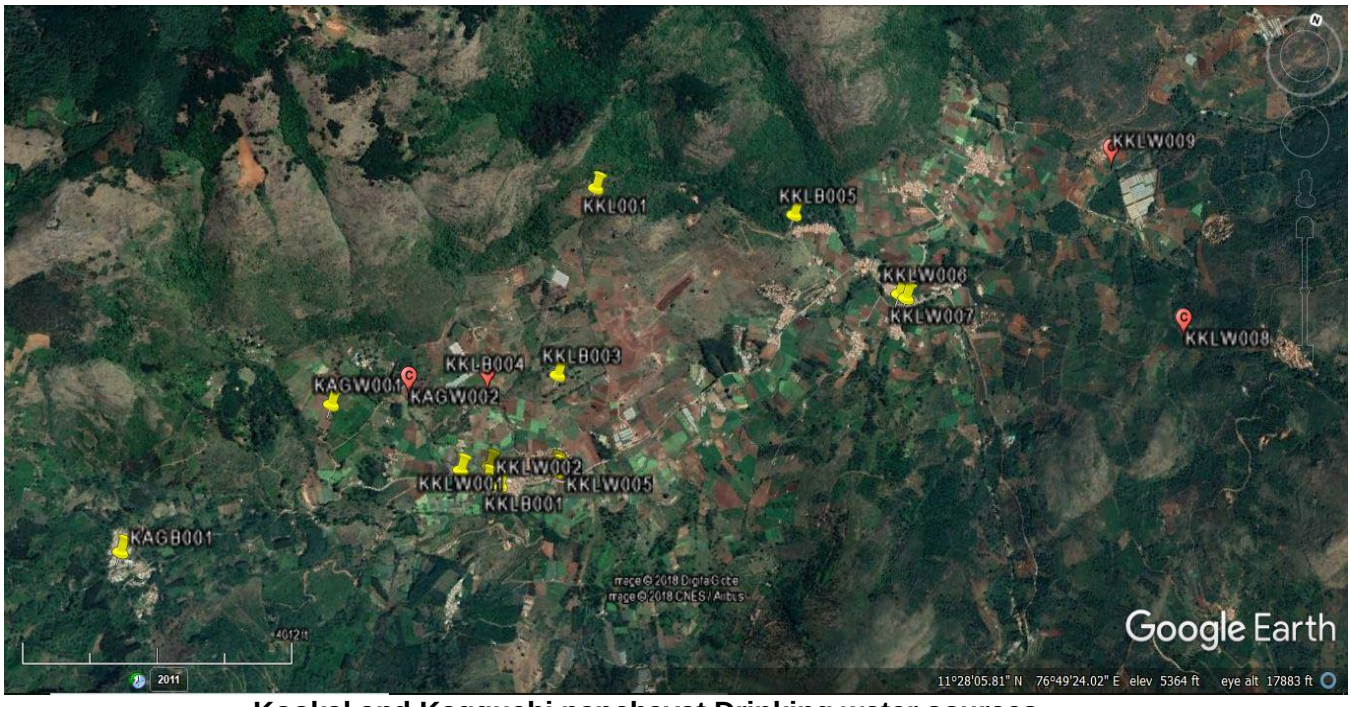
Introduction

In June-July 2018, Keystone Foundation inventoried drinking water sources in the working area of Kookal and Kagguchi Town Panchayat. There are nearly 17 drinking water sources in catchment of working area. It was seen that some of the areas depend only on these wells and bore wells for water. The report proposes to seek the possibility and the need for restoring some of those vital water sources with support from the Kookal and Kagguchi Panchayat, communities and other users of water. The report also includes the effects of bore well on the hydrological cycle in the region.

In 2006, Keystone Foundation with support from Panchayat and community had initiated a restoration of spring-shed for the Mission Compound source. The source is a living model that depicts the benefits of conservation and bio-diversity to an ecosystem. The shola patch in the fenced area near the source provides habitat for wildlife and birds. It has also stayed perennial throughout 2016 drought when other major water sources like Elada went dry. When a small patch of land less than one acre when restored could survive severe droughts, what could be the benefits from large areas of restoration. Longwood shola is an example of such an area.

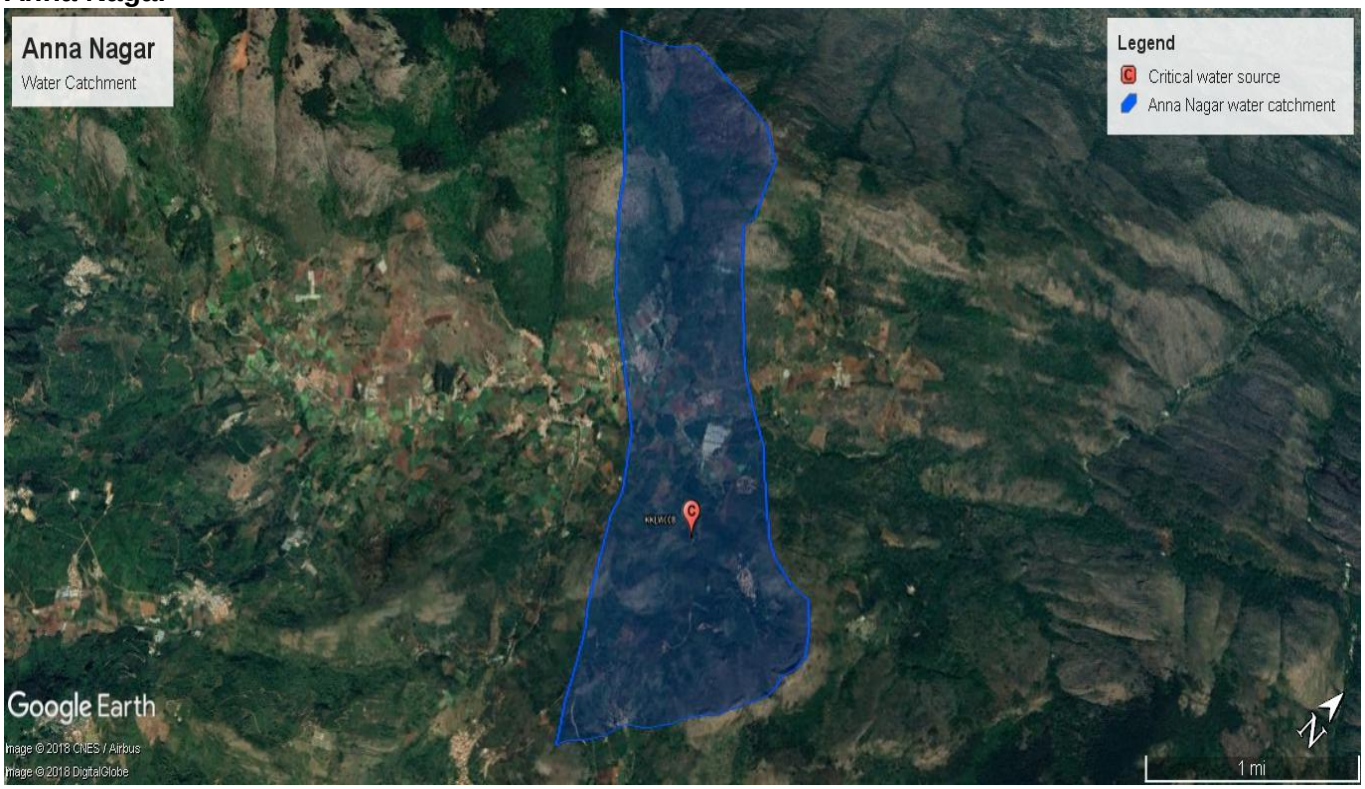
Suitable Intervention

1. De-silting and repair of existing structures.
2. Removal of invasive plant species and planting native grass.
3. Planting of native shola species in the water-shed and recharge areas.
4. Better management of solid and grey water wastes from households in and around source to prevent them from mixing with the source.
5. Construction of pits, trenches, loose boulder check dams, ponds in the catchment area to increase recharge.
6. Providing water sources for wildlife to reduce conflict.



Kookal and Kagguchi panchayat Drinking water sources

Anna Nagar



Status: A total of 40 households are present in the region. During summer season the well is completely depleted and the people are provided water once every three days. The stream is the main tributary for the well therefore when the stream bed is dry the well also goes dry during summer. The village was getting drinking water by having a channel from the stream to their village and the stream flows through two estates on either side and they have been blocked by the estate owners from entering into the channel from which the people received drinking water. There is one person selected by the people in the region for the maintenance of drinking water and people themselves pitch in cash for the fee. Panchayat has been informed several times but there is no intervention being done.

Source Details: The well was dug in 1988. The well has a water catchment of 1182 acres. The water from the well is highly turbid and people have to filter the water before drinking. During dry season the water is pumped into the GLR tank, once every three days. The water pump gets exposed once the water level drops during summer leaving the pump exposed. The tank is damaged for a very long time since there is no proper maintenance

Things to be done immediately:

- The people prefer water from marvhala because its perennial.
- GLR tank has to be repaired.
- The stream water flowing through the estates is clean, if a pipeline can be placed from the stream to the GLR tank it can provide constant drinking water supply to the village because the water in stream is perennial.
- The pipeline has to come through the estates to the village.
- To place a few extra rings into the well so that the motor remains below the water level during summer

Indra colony

Status: Indra colony has about 40 households about 200 people approximately and for the past 40 years people have been using the pulley system to draw water from the well.
The stream water has become seasonal due to depletion in groundwater table because of the intensive use of bore wells in the region. The village is provided with a panchayat well but the people don't use the water because it gets dried up frequently and in presence of water the quality is very bad. The village elders have been carrying water from the well for past 60 years. The GLR tank has no covering since it's been unused for a long time, the panchayat contractor at the time did not put the lid for the tank since they had some financial problems. During dry season a herd of elephants come to the region looking for water.

Source Details: The well was built before the 1978 floods. The old well has a watershed region of 974 acres. These villagers have been using this water for three generations. The rainwater runoff seeps directly into the well bringing in all the litter and sewage water into the well form upper catchement regions. The depth of well reduced due 1978 floods by filling the well with mud and other impurities. There was a time when the whole Kookalthorai village had water scarcity but there was enough water in the old well for consumption and household purposes. Even when the water in stream dries up, there is always water in the well (only for drinking).There is high turbidity due to the rainwater runoff entering into the well through seepage holes during rainy seasons.

Things to be done immediately:

- The seepage hole in the well has to be repaired.
- The people demand pipeline and desilting for the old well because it is perennial.
- Pipeline and motor is present in the Panchayat well which has gone dry therefore replacing it into the old well will be of great benefit to the people
- The GLR tank has to be repaired and requires a pipeline from the well and a common point can be set up for collection of water.

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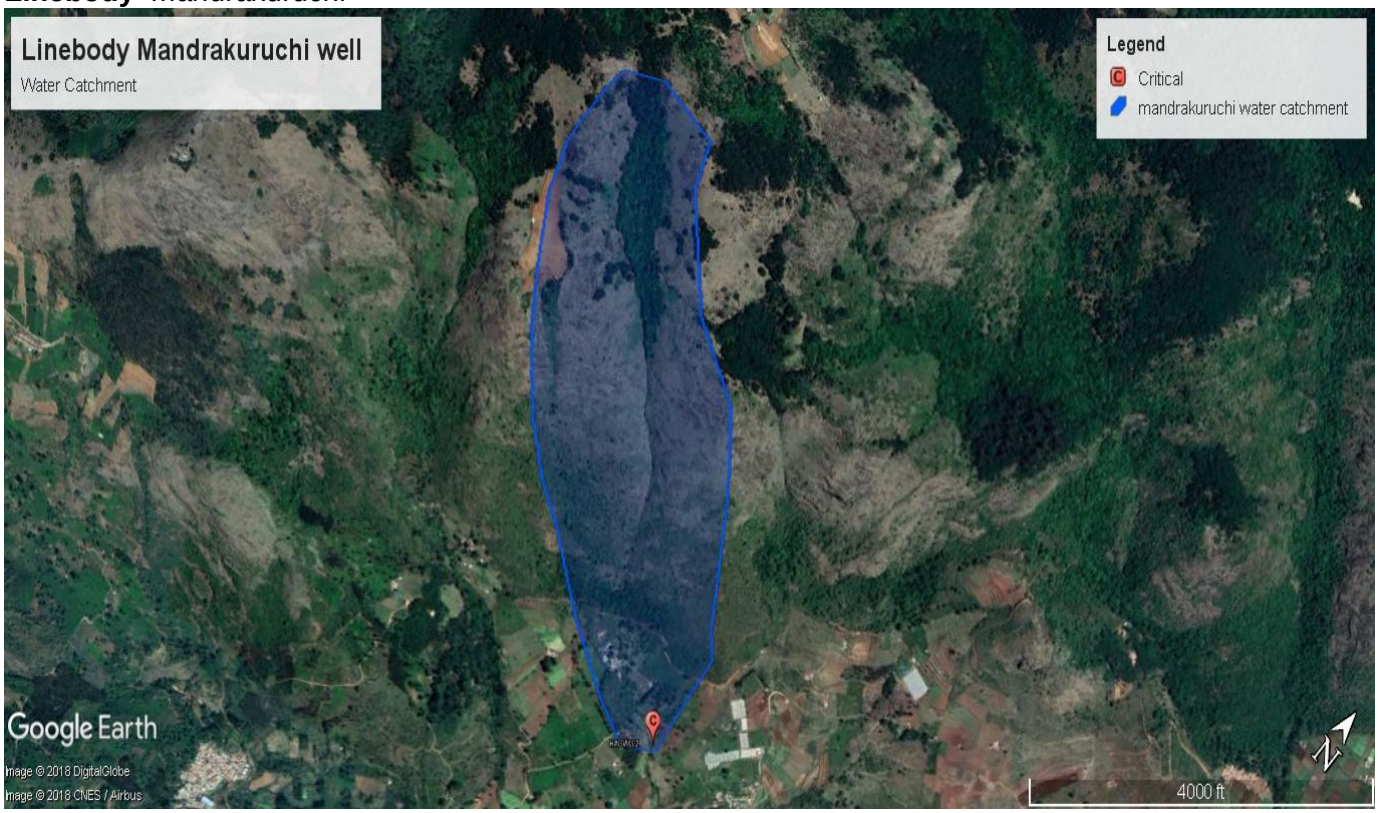

Status: Currently 54 families are present in the region. The panchayat well has a water catchment of 175 acres. During summer time the drinking water in panchayat well is depleted and the demand for water is very high in this period. The village used to take water from spring alongside the stream before they were provided with panchayat well, it had a two inch pipeline from the spring in order to collect water and the people used to carry it from the source to village. The people will go to the spring every morning at 4:00am because the spring had very less water and it would take 20-40 mins to fill one bucket. In 2014 the spring had dried up completely due to intense use of bore wells in the region. During dry season the village gets water from neighboring fields or houses for money.The village has a storage tank which is in a bad condition due to low maintenance

Source Details: The panchayat well was dug in 2007. From the time the panchayat well was dug there was no problem for 4 years and later on the well water started to deplete rapidly because the groundwater table has gone down due to intensive use of bore wells in the region hence the streams, wells and springs present in the region started drying up. A bore well is present in the neighboring field about 40 meters above the well location and this might be the reason for the well to go dry because the groundwater is tapped by the bore well user before reaching the well. During dry season the well contains only 10-15 liters of water everyday. The panchayat well is 22 feet in length and when dug deeper the well fills up with mud therefore desilting the well is of no use. The village has no other water source nearby.

Things to be done immediately:

- The GLR tank has a lot of seepage holes and it has to be repaired
- Bringing in water from the bobbel spring through a pipeline is the best way to solve the water scarcity issue for the region.
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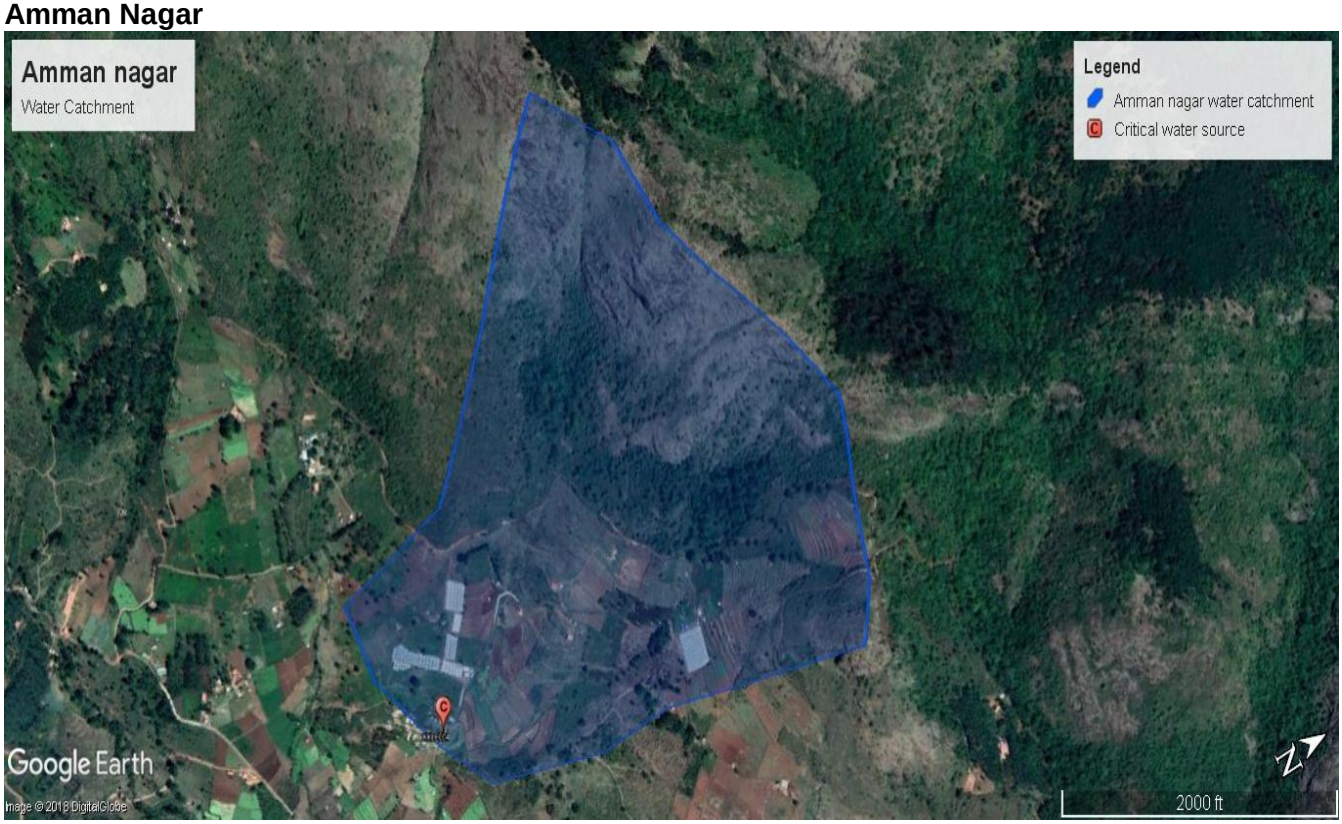
Amman Nagar



Status: The Amman Nagar bore well has a water catchment of 194 acres

Source Details: The bore well was installed in 2015. The motor from the bore well was removed 2 years ago since there was no water in the bore well. The bore well is filled with mud since it's been unused for a long period of time

Things to be done immediately:

Effects of bore well on the hydrological cycle in the region

- Water pumped from the groundwater system causes the water table to lower and alters the direction of groundwater movement. Some water that flowed to the stream no longer does so and some water may be drawn in from the stream into the groundwater system, thereby reducing the amount of stream flow.
- Contaminants introduced at the land surface may infiltrate to the water table and flow towards a point of discharge, either the well or the stream
- Water-level declines may affect the environment for plants and animals. For example, plants that grew because of the close proximity of the water to the land surface may not survive as the depth to water increases. The environment for fish and other aquatic species also may be altered as the stream level drops.
- As the water table lowers from groundwater depletion, the materials within the ground dry out and the ground can actually collapse in on itself. For example, in 2017 sinkholes had appeared in Chitravati river bed at Anantapur district of Andhra Pradesh due to the over exploitation of groundwater, coupled with virtually no recharge of the water table in the absence of good rains.