Banaskantha District

Flow of Rain Water

From Aravalli Range of Mountains

To Arabian Sea–

A.1 Climate Change: Disaster Management. How to minimise damage due to Floods.

In the **years 2015 and 2017**, there were **massive floods**. On both occasions, several thousand animals died, many human beings also died and huge amount of properties were damaged. Standing crops were washed out. In the **years 2016 and 2018**, there have been **droughts**. Thus people in Banaskantha district suffer huge losses. This strange weather behaviour is believed to be due to **Climate Change**.

Photographs of the flood in Banaskantha:

This proposal is to minimise the losses due to floods and simultaneously improve **water management**. Just imagine: if all the flood water had gone into the ground – instead of into the Arabian Sea; then – today all wells & all lakes would be full. Farmers would have a healthy crop instead of losing all crops. Underground water level would be at 20 feet instead of at 800 feet.

This **can be achieved** to a significant extent.

An analysis of problems:

A.2 Banaskantha district is an **arid area** with **low rainfall** of less than 15 inches per year. The soil has turned **sandy**. People, animals & plants suffer from water scarcity. Agricultural activities also suffer.

A.3 Within the Banaskantha district, River Banas starts from Aravalli and passes near Deesa city. After Deesa upto Haliwav in Rajasthan, there is **no other river**. Hence, there is **no drainage facility for flood waters for an area of hundred kilometers.** Normally, with low rainfall, such facility is not required. However, because of climate change, massive floods have occurred and Banaskantha as well as Patan districts have suffered huge losses.

A.4 **Rivers drain out excessive rain water** and also take water to different lakes and ultimately to the ocean. Since Banaskantha receives very little rain fall, **natural rivers have not formed**. However, on the north east side of the district, in Rajasthan, there is the mountain range of Aravalli. This range receives substantial rain falls. When the water is more than what can be absorbed within the ground, it flows. This flow **passes through Banaskantha, Patan & Kutch Districts before ending in the Arabian Sea.**

A.5 In the year 2017, **Abu** and nearby mountains of **Aravalli** range received a **rain fall of about 60 inches within 48 hours.** During the massive floods, a **dam** in village Jetpur in Rajasthan **collapsed.** This increased the intensity of floods.

This excessive rain fall caused massive floods. Since, there is no natural drainage in terms of rivers, the only river – Banas River broke its banks. The river was flowing at many places as wide as one kilometre. Many villages were drowned, standing crops were destroyed. Many farm lands were washed out.

A.6 In Banaskantha districts as well as in most parts in Gujarat, most of the **lakes are full of silt**. Every year – whenever there is rain fall, the water flows into the lakes. At that time, rain water brings soil, leaves and several other materials. All these materials settle down at the bottom of the lake and form a hard cover. This silt has never been removed for last 70-80 years. Hence, the layer of silt has become very hard and has **reduced the percolation of water** into the ground.

A.7 Banaskantha district has got thousands of **borewells** taking out water from the underground. With low rain fall, with lakes being silted, the ground water is not replenished. Hence, the underground water keeps going to lower and lower levels.

A.8 We are told that about 40 to 50 years back, there were wells in this area and people used to take out drinking water through the wells. Once the borewells started

pumping out water, underground water levels started going deeper and deeper. **Nobody** was interested in restoring the underground water/ **recharging the underground.** The only action taken by farmers was to dig the borewells deeper and deeper. In most parts of Banaskantha district, at a depth of 400 feet, salty water is found. This water is not useful for drinking or for agriculture. This **layer of salty water is 200 feet deep.**

A.9 Enterprising farmers have made their borewells through the entire 200 feet of salty water layer. They went down to more than 600 feet to get potable water. Now, this water level has gone to a **depth of 800 feet.**

This is a sure invitation to serious hardships in future.

Photographs of the Water Scarcity:

A.10 Narmada Canal:

Rajasthan Branch of Narmada canal passes through Banaskantha district. It provides irrigation and drinking water to parts of the district. For last few years, this canal has inadequate water. Still, the area covered by the canal has less acute problem of water scarcity. A large part of the district does not get any irrigation water from Narmada canal or Dantiwada dam. These areas are dependent upon bore-wells which are sinking deeper & deeper.

A.11 Water Logging:

Sub-Branches going out from the Rajasthan canal have created another serious problem. At many places, they have blocked natural streams – which used to drain our rain water. In normal circumstances, these streams appear to be insignificant. However, in case of floods, the obstruction caused by these branch canals becomes really serious problem.

In the year 2015 as well as 2017, large areas have remained submerged under water for several months. Lives of human beings as well as animals were lost. Standing crops worth crores of Rupees was lost in both years. Banaskantha Collector office has spent crores of Rupees to pump out the water; and to compensate farmers' losses. But there is no permanent solution to water logging disaster.

Images of water logging in Banaskantha:

By designing proper canals to drain out flood waters, this serious problem also can be minimised.

B. Paradox:

Banaskantha suffers from the paradox of **water scarcity** in normal years; and **massive floods** in some years.

C. Solution:

C.1 Canals to Drain out Flood Water:

It is submitted that **Government of Gujarat** and **Government of Rajasthan** may co-operate and dig out Canals which can serve several purposes. As far as Gujarat portion is concerned, Government of Gujarat can start the work independently without waiting for cooperation from others.

The canals should **start right from Aravalli Mountains**. These canals' direction will be towards the Arabian Sea (South West). During the course of their flow, these canals will pass through several villages and towns. The canals should fill all the lakes on their way.

C.2 These canals may be planned at a distance of 10 kilometres. Thus, the first canal may start in the north of Banas River at about 10 kilometres' distance. About ten canals will serve entire districts of Banaskantha, Patan & Kutch. The canals may not be parallel. Depending upon the topography of the land, the canals may adopt appropriate route so that water flows by gravity.

C.3 Benefits of this network of canal:

In case of a future surplus rain, maximum amount of water will be drained out/ transported through these canals. Hence, the **damage due to floods** will be minimised.

On their way, these canals will **fill in several lakes**. Hence, the area will have good storage of surface water. Water will also percolate through the canals as well as through the lakes. Hence, **underground water storage** will improve.

With good underground water table, **ingress of saline water** into the underground can be prevented. Desertification of good land will stop or reduce.

C.4 Government has made one canal called **Sujalam Sufalam canal** in this area**.** Whenever there is excess water in the Narmada canal, that water is released in this canal. However, there is only one such canal. Government may make nine more canals.

C.5 Desilting Lakes:

Vicharta Samuday Samarthan Manch (VSSM) and many NGOs have taken up water management works. After Shri Narendra Modi became Chief Minister of Gujarat, in the years 2001 to 2005, considerable work for desilting of lakes was undertaken. Formal instructions were given to all concerned that **wherever soil was required**, it should be taken **from lakes** so that the lakes can be desilted without any additional cost. However, for last several years, this work has stopped. In May, 2018, some work was done for desilting lakes. However, this was too small a work. A **massive programme of desilting all the lakes** in Gujarat may be undertaken. While, rain surplus areas like South Gujarat may be taken up later; all the rain deficit areas including Banaskantha district, Patan, Kutch & Saurashtra should be taken up on a priority basis.

Conclusion: A comprehensive project of making canals and digging all lakes in Banaskantha, Patan and Kutch districts will convert the flood disasters in blessings. Underground water tables will come up, farmers can take two crops a year and ingress of saline water into good land can be prevented. Losses to life and property can be minimised.

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