

The Aga Khan Academy, Hyderabad

EXTENDED ESSAY

Determining the role of water scarcity in causing the geopolitical tensions that led to the bifurcation of the composite state of Andhra Pradesh and the formation of a separate Telangana state.



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Abstract

It has been predicted that future wars across the world will be fought over clean water – the “Next Oil”, or “Blue Gold”. This essay aims to understand and determine the role of Water – a dwindling natural resource, in leading to large-scale public discontent, agitation and ultimately, to the bifurcation of composite Andhra Pradesh State (India), into Telangana and the residuary Andhra Pradesh, in June 2014 . The research question is - ***“To what extent did water scarcity cause geopolitical tensions in the composite Andhra Pradesh state, leading to its bifurcation and the formation of a separate Telangana state?”***

Telangana, as part of composite Andhra Pradesh had suffered neglect from the very beginning. Poverty, illiteracy, un-employment, lack of irrigation and infrastructure led to widespread discontent in the region. Geopolitical tensions usually stem from exploitation, neglect and uneven sharing of resources. The hypothesis of my essay is that water – its scarcity and unfair diversion, was one of the biggest contributing factor to tension in Telangana region. The water scarcity not only affected farming but also industrial and infrastructural development, indirectly contributing to people remaining poor, illiterate and jobless - leading to region wide agitation and the demand for a separate state. This essay aims to explore how unresolved disputes regarding the sharing of an essential natural resource can potentially have far reaching consequences.

The research, is based on my personal observation, interviews of farmers, migrant workers, industrialists, water resource management specialists, journalists and politicians. I have also collected statistical data from different sources to substantiate my argument. Being able to look at the issue from such close quarters, and by gathering diverse perspectives on it through interviews, observations, data analysis and study of the available literature – books and newspaper articles, I have now gained a deeper understanding of the hydro-politics of the region.

(300 Words)

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RESEARCH QUESTION

“To what extent did water scarcity cause geopolitical tensions in the composite Andhra Pradesh state, leading to its bifurcation and the formation of a separate Telangana state?”

INTRODUCTION

After India's independence in 1947, the states were re-organized on linguistic lines. The Telugu speaking regions of Telangana (formerly under Nizam's rule) and Coastal Andhra (formerly part of Madras state) were merged to form Andhra Pradesh. Many political leaders and people opposed this move, fearing that it would go against Telangana. Apart from their language, the two regions had very little in common. Telangana was culturally different and under-developed -it feared domination by Coastal Andhra.

Historically, Telangana was known for its lakes and had a highly developed interconnected lake system in place. Its rulers gave very high importance to the development of tank and lake irrigation. The agriculture and economy of Telangana thrived for centuries without any hitch. The neglect of the lake system began during the post-independence era. Lack of maintenance and government apathy coupled with the rise in population and demand made the water situation worse. People started digging wells and later bore-wells in thousands – sucking empty the ground water.

Geographically, Telangana lies on a higher plane than its rivers. Successive state governments built dams, promised to feed the region with their backwaters and also proposed several lift irrigation schemes. Most Lift Irrigation projects either never took off or were stuck endlessly, starving Telangana of water. Telangana continued to suffer from both 'physical' and 'economic' water scarcity. The far-reaching impact - poverty, illiteracy, unemployment and lack of infrastructure is starkly visible merely beyond the 50 kilometre radius of its capital Hyderabad. Telangana remained backward in every aspect.

The politics of domination was most visible in the area of safeguarding, creating and sharing of the water resources. Two major rivers Godavari and Krishna flow through Telangana. About 69% of Godavari, and 68.5% of Krishna Rivers' total catchment areas fell in Telangana. Yet, its allocated share in the Krishna waters was 37%, in the Godavari 38%. Coastal Andhra

was appropriating a major chunk of Telangana share.¹ The two major dams – Nagarjunsagar and Sreesailam over Krishna river were to feed Telangana from its backwaters. But their waters never reached the canals because the dam never held enough water to feed the backwaters. Coastal Andhra was always given preference and water was released in excess of its share.

The people of Telangana felt that their condition could be improved only in a state of their own. After fifty years of protest and struggle, their demand for a separate state was finally fulfilled with the formation of Telangana as India's 29th state on 2nd June 2014.

*“Geopolitical tensions are a combination of geographic and political factors influencing or delineating a country or a region.”*² This essay argues that of all the problems, water scarcity was the biggest contributing factor to aggravating the geopolitical tensions that ultimately lead to the bifurcation of composite Andhra Pradesh, and the formation of Telangana state.

The areas of study for this Essay are the present States of Andhra Pradesh and Telangana, in India.

- Andhra Pradesh: (16° N 18° E), Area: 160,205 km², Population: 49,378,776 (2011)
- Telangana: (18° N 79° E), Area: 114,840 km², Population of 35,193,978 (2011)³

It seeks to explore the two hypotheses that I have framed:

1. The Problem: Neglect of traditional and ground water sources, unfair sharing of river waters, and non-implementation of proposed Irrigation projects led to the water crisis in Telangana.
2. The Impact: The water crisis severely impacted agriculture, industry and infrastructure, leading to unemployment, poverty and migration, eventually causing tensions leading to Telangana's separation from composite Andhra Pradesh.

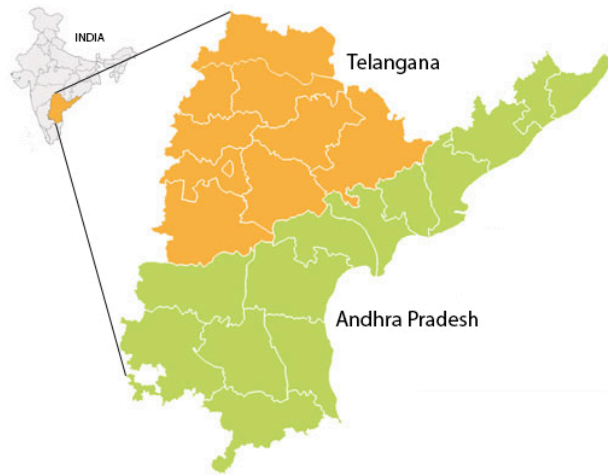
¹ "Telangana.com- Committed for the Development of Telangana." *Telangana.com - Committed for the Development of Telangana*. The Government of Telangana, n.d. Web. 11 June 2015. <http://www.telangana.com/>

² "Definition of Geopolitical." *Dictionary.com*. Dictionary.com, n.d. Web. 11 June 2015. <<http://dictionary.reference.com/browse/geopolitical>>

³ "General State Information." *Maps Of India*. N.p., 2015. Web. 12 Sept. 2015. <<http://www.mapsofindia.com>>

MAP 1

Physical Map of Andhra Pradesh and Telangana



MAP 2

Physical Map of Rivers in the States



(MAPS NOT TO SCALE)

RESEARCH METHODOLOGY

I have collected both Primary and Secondary data to understand the issue in depth, and gather evidence to support my hypotheses.

Primary data was collected using both qualitative and quantitative research techniques. ‘Qualitative Technique’ entailed noting personal observations and in-depth interviews with subject specialists - politicians, irrigation experts and industrialists to understand the larger issue of water, irrigation and other infrastructural development and policy mishaps. ‘Quantitative Technique’ was employed in generic survey interviews of farmers, migrant labourers and other affected population to gather information about their circumstance and situation.

Secondary data was collected in the form of facts and figures from various government sources - census, agriculture, crime and demographic department, as also world reports, annual census and survey figures. The data includes population, per capita income, literacy rates and facts relating to agriculture, irrigation and farming. I also referred to news reports and articles to follow the trajectory of events and agitation over the years to understand the building up of the geopolitical tensions and discontent.

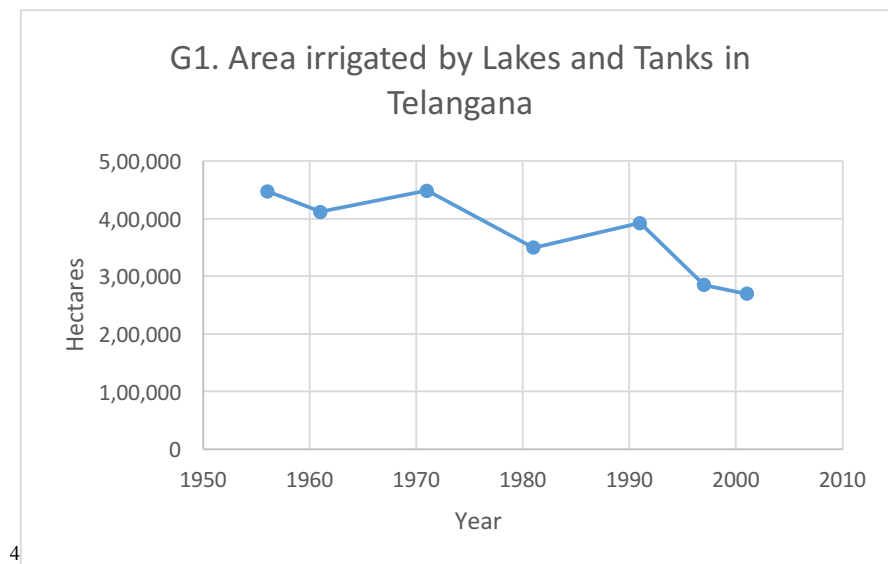
I will evaluate and present all the data to build a cohesive argument to support my hypothesis.

THE PROBLEM

1.1 The Depleting Waters – Lakes and Tanks

Telangana was once known for its tanks and lakes; they were the lifelines of the region. Thousands of them dotted the land – feeding its people and farms for centuries. This legacy of the Kakatiya rulers (12th century) was carried forward by the Qutubshahi and Asafjahi dynasties, which built many more tanks and connected them with big lakes to ensure perennial water supply for drinking and agriculture.

But soon after independence, these water resources began to dry up and dwindle due to neglect and administrative apathy. State governments neither invested in digging new tanks nor cared for the existing ones. With people digging wells and bore-wells in thousands across the region, the ground water table started dipping rapidly, leading to a severe water shortage. Pumping water from bore-wells required electricity, which was both expensive and in short supply, worsening the situation.



⁴ G1 – Appendix 1 Table 1. India. Bureau of Economics and Statistics, A.P. *Area Irrigated by Lakes and Tanks in AP*. N.p.: n.p., Multiple. Print. Statistical Abstracts of A.P.

The land in Telangana irrigated by tanks and lake water fell from 447,236 hectares (1956) to just 269,492 hectares (2001).⁴ Professor Jayashankar, an academician, social activist and ideologue of Separate Telangana movement says:

*“It has happened so because silt accumulated in the tanks is not removed, breached tanks are not repaired and some of the tanks that were operational have been deliberately damaged to promote urbanization in and around major towns and cities especially the capital city of Hyderabad. In this process small and marginal farmers became helpless, abandoned cultivation and sold their lands in distress, at a throw away price, to the rich migrants from Coastal Andhra.”*⁵

Tank irrigation had a huge bearing on rural economy and agriculture in this region. The sheer size of the loss of area under tank irrigation caused a large scale loss of opportunity and employment - leading to poverty, suicides and migration.

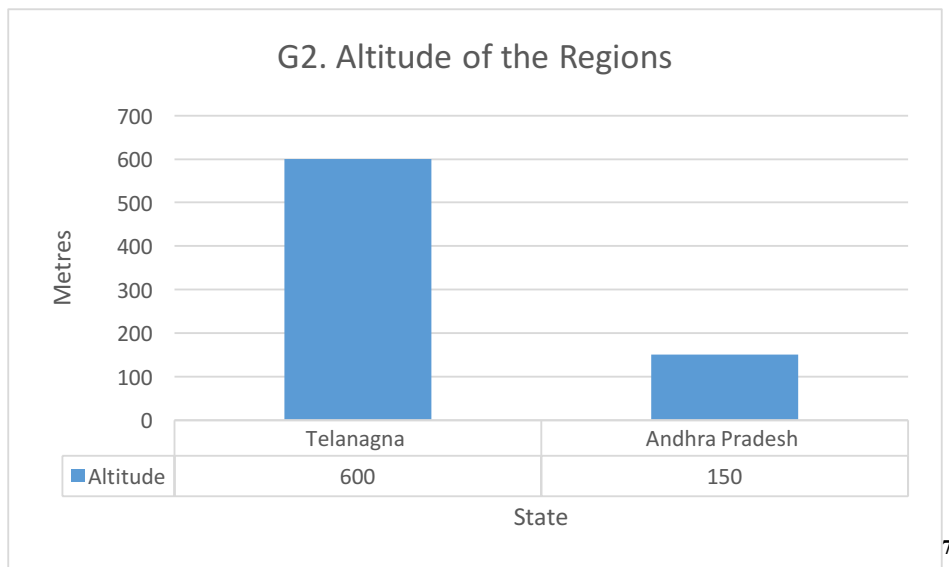
Having lost and exhausted all the earlier sources of irrigating their lands, Telangana's farmers' only hope remained the two rivers - Krishna and Godavari, which passed through Telangana.

1.2 Living On a Highland

Telangana is a highland at 600 m above sea level, while Andhra is at 150 m⁶. Andhra being a low-lying area always had abundant supply of water. But Telangana being on a higher plain could not benefit from the natural flow of its rivers. Water needed to be pumped up for it to reach its farms. The two major dams - Nagarjunsagar and Srisaïlam built on river Krishna were supposed to serve Telangana, by maintaining a certain water level and releasing the backwaters into the canals feeding its farms. But year after year, water was released for Andhra region in excess of its share, while Telangana remained water starved.

⁵ Jayashankara K. *The Demand for a Separate State*. Issue brief. N.p.: n.p., n.d. Web. 18 Sept. 2015. <<http://www.telangana.com>>.

⁶ "Topographic Map of India." *Maps of India*. N.p., n.d. Web. 13 Sept. 2015. <<http://www.mapsofindia.com/maps/india/topographic-map.htm>>.



While Telangana's topography was a big hindrance in utilising the river waters, the neglect, broken promises and damning attitude of the government towards its development made the situation worse.

1.3 The River Dream

The Bachawat Commission,⁸ a Tribunal appointed by the Government of India decides River water sharing in India; it allocated 1480 TMC of Godavari Waters and 811 TMC of Krishna waters to composite Andhra Pradesh. However, each state is free to decide its sharing mechanism and the internal allocations between its regions based on the available water in the catchment area and irrigate-able land.

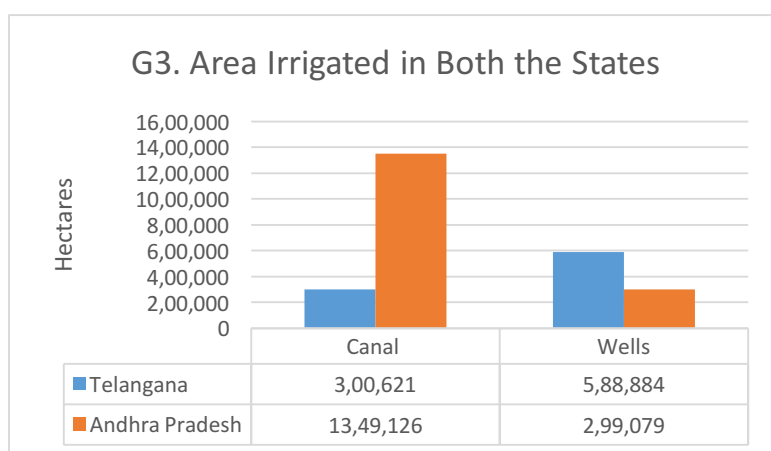
Although Telangana should have received 69% of the waters, its share was reduced to 37%. The actual utilization of these waters was much lower at 10-12%, partially because of the low inflows in the river from the upper riparian state, but largely because of the inability to lift

⁷ G2 – Appendix 1 Table 2 "Topographic Map of India." *Maps of India*. N.p., n.d. Web. 13 Sept. 2015. <<http://www.mapsofindia.com/maps/india/topographic-map.htm>>.

⁸ India. Bachawat Commission. *The Krishna Water Disputes Tribunal*. By In The Matter Of Water Disputes Regarding The, Inter- State River Krishna And The River Valley, Thereof, and Between. N.p.: n.p., 2010. Web. 10 Sept. 2015. <<http://wrmin.nic.in/writereaddata/Inter-StateWaterDisputes/KWDTRReport9718468760.pdf>>.

water and feed the canals.⁹ Consequently, the total irrigated area in Andhra region increased from 24.45 lakh hectares in 1956 to 26.00 lakh hectares in 1997 while in Telangana, it decreased from 9.12 lakh hectares in 1956 to 7.18 lakh hectares in 1997.¹⁰

The table below shows the difference between the area irrigated by wells and canals in the two. In Telangana 3,00,621 Hectares are under canal network; in Andhra Pradesh 13,49,126 Hectares - clearly showing the disparity in the division of water resources. While Telangana has more wells as compared to Andhra Pradesh, their drying up nullified the advantage.



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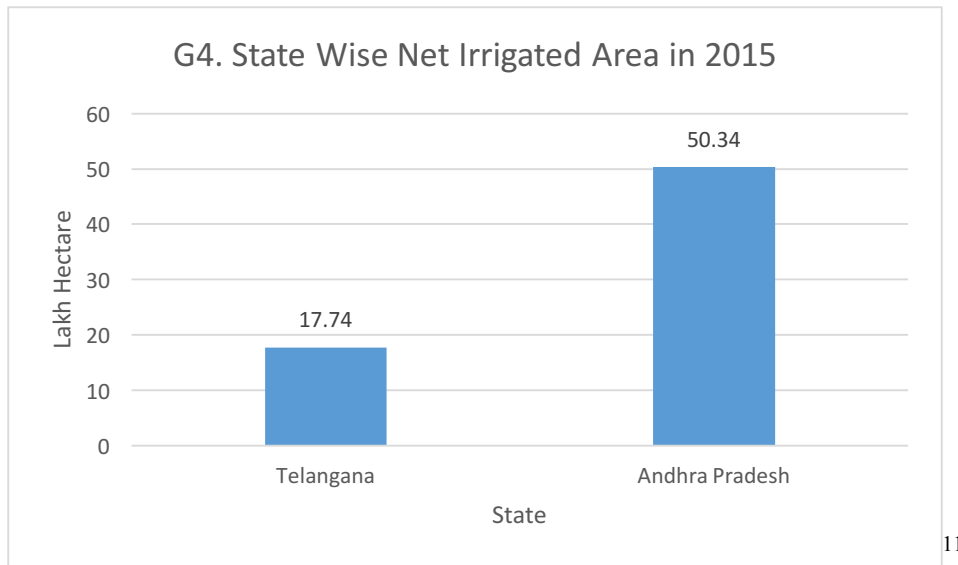
1.4 Failed Lift Irrigation Projects

Telangana needed Lift Irrigation Projects to access its river waters. Although several Lift Irrigation Projects and Schemes were proposed and initiated by the governments, most were not realized. The main reasons were insufficient fund allocation and lack of political will. Due to the political domination of people from Andhra in the government whose interest lay in the development of their own people and land, the voices of the people of Telangana remained unheard.

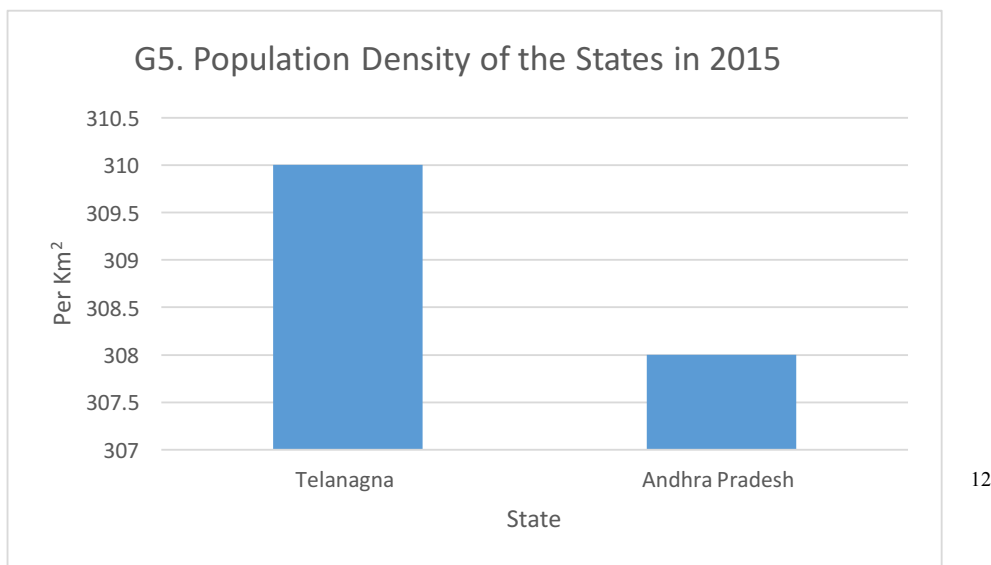
⁹ Nag, Kingshuk. *Battleground Telangana: Chronicle of an Agitation*. Noida: Harper Collins India, 2011. Print.

¹⁰ G3 – Appendix 1 Table 3 "Telangana.com- Committed for the Development of Telangana." *Telangana.com - Committed for the Development of Telangana*. The Government of Telangana, n.d. Web. 11 June 2015.

<<http://www.telangana.com/>>.



The graph above shows the net irrigated area in 2015 in both the states. This disparity goes to prove years of marginalisation of Telangana. Even though the population density and land area of both the states is almost similar, the distribution of resources was clearly unfair.



¹¹ G4 – Appendix 1 Table 4 India. Department of Agriculture, Cooperation and Farmers Welfare. *Presentation of Kharif Conference 2015*. N.p.: n.p., 2015. *AGRICOOOP*. Web. 19 Sept. 2015

¹² G5 – Appendix 1 Table 5

[12A] India. Telangana Government. *State Profile*. N.p.: n.p., 2015. Web. 16 Sept. 2015.

<<http://www.telangana.gov.in/About/State-Profile>>

[12B] India. Andhra Pradesh Government. *Demography*. By Govt. N.p.: n.p., 2015. Web. 15 Sept. 2105.

R Advadhani writes, “*There are 29 lift irrigation schemes in the Medak district which have a potential to irrigate 11,291 acres. All of them are over a decade old and need another round of investment to get them back into action and supply water for agricultural lands. Out of these projects only seven projects are fully functional while another six are only partially working.*”¹³

This is the story of just one out of ten districts in Telangana. Many major projects like Kalwakuthy, Nettampadu, Bheema, Koilsagar and Devadulla Lift Irrigation Projects besides the Sreeisailam Left bank canal and dozens of other minor schemes remained stuck for years. If completed, they would have irrigated at least 24 Lakh Acres of the land in Telangana.¹⁴

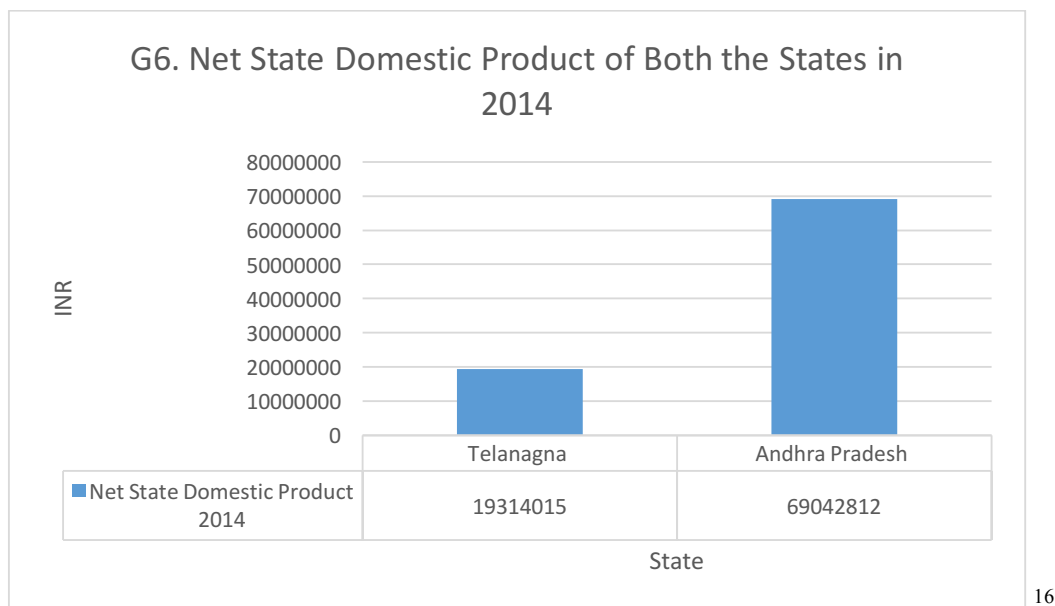
¹³ R. Avadhani. "Lift Irrigation Projects Fail to Take off in Medak District." *The Hindu*. N.p., 16 Mar. 2015. Web. 17 Sept. 2015. <<http://www.thehindu.com/news/national/telangana/lift-irrigation-projects-fail-to-take-off-in-medak-district/article6997880.ece>>.

¹⁴ "All 26 Irrigation Projects Will Be Completed in 2 Years: KCR." *The Indian Express*. N.p., 26 May 2014. Web. 17 Sept. 2015. <http://www.newindianexpress.com/states/andhra_pradesh/All-26-Irrigation-Projects-will-be-Completed-in-2-Years-KCR/2014/05/26/article2246104.ece>

THE IMPACT

2.1 Parched Lands

Both Telangana & Andhra being agriculture-based economies, Water is the most crucial resource. Due to the water scarcity, the cultivable land left fallow in Telangana grew from 25% in early 1970's to 40% in year 2000¹⁵, directly affecting the sustainability of agriculture in the region. The graph below shows the Net State Domestic Product for both states in 2014; the huge difference between their economies is clearly evident.



I interviewed farmers from two districts of Telangana - Warangal and Medak. It is ironical that the farms in Medak, although situated right next to the dam on the river Manjeera, had no water for irrigation. Earlier, these farmers were using dam water for irrigation. However, from the early 1970's, the water was diverted to Hyderabad for domestic use, to compensate for water shortages in the city. The farmers were left with the residual wastewater after filtration,

¹⁵ Ser Division, Planning Commission, Government Of India. "Pattern of Development in India." *Pattern of Development in India - A Study in Andhra Pradesh* (n.d.): n. pag. *Planning Commission of India*. Web. 12 Sept. 2015. <http://planningcommission.nic.in/reports/sereport/ser/std_patrnAP.pdf>.

¹⁶ G6 – Appendix 1 Table 6 India. Open Government Data Platform. *Net State Domestic Product*. N.p.: n.p., 2015. Web. 12 Sept. 2015. <https://data.gov.in/catalog/net-state-domestic-product-current-prices#web_catalog_tabs_block_10>.

which was neither good for agriculture nor enough, forcing the farmers to subsist as daily-wage labourers. They held the government directly responsible for depriving them of their resources, and hence, for their misery.

There are no rivers flowing through Warangal district; its farmers have been primarily dependent on lakes and groundwater. With drying up of the lakes, and falling ground water levels, there is not enough water for the fields. The biggest contributing factor to the drying up of lakes was their lack of maintenance - the (composite) Andhra Pradesh government never regulated their use, nor enforced the laws that were meant to protect the lakes from pollution and overuse. Another factor responsible for the drying up of lakes is their siltation. Traditionally, villagers and potters collected clay from the lakebeds to make earthen pots, tiles, mud plaster and more. But with changing lifestyles and the gradual shift towards cement, plastic and metal products, the demand for clay fell drastically. The discontinuation of these traditional practices led to the accumulation of silt in the lakebeds, directly impacting their quality of water and storage capacity.

I also interviewed farmers from two districts of Andhra - Guntur and East Godavari. These farmers did not face water scarcity and were able to grow crops during two seasons. They were mainly dependant on the rivers Krishna and Godavari for water, and an efficient network of canals delivered water to their farm lands.

It is evident from the gathered statistic data, interviews and my personal observations that the scarcity of water took a huge toll on the agriculture and people of Telangana. This reflects both in the agricultural output of Telangana (which has dipped very low over the past few decades) and in the living conditions of its rural farming community.

2.2 Industry at Standstill

According to the 'Srikrishna Commission on Telangana' the region lagged behind Andhra region in industrial growth. Of more than Rs. 12,421 crores invested through FDI in composite Andhra Pradesh, rural Telangana received only Rs. 1,658 crores, while Rs. 5,499 crores went to rural Andhra. Discrepancies in Gross Domestic Product and trends in Per Capita

Income between the two also indicates that Telangana would have to go a long way to provide a better standard of living to its people.¹⁷

According to Mr. Hemanth Reddy, an Industrialist, water is a really important resource for industries. He owns chemical factories in Telangana region and his business has been badly affected by the water shortage. The ground water around his factory is severely depleted and polluted, compelling him to spend nearly Rs. 200,000 (\$3200) monthly to purchase water from outside. This is an example of how mismanagement and lack of strict government regulation has led to the loss of thousands of gallons of potentially useful water, causing economic water scarcity.

Energy, a key input for industrial development is also linked to water. A large number of irrigation projects in the Telangana region were meant to generate hydroelectric power. But this also suffered because many of these projects either did not take off, or were not running to full capacity. This resulted in severe shortage of power, which in turn limited the production and overall output of the industry. Using Diesel generators as power source is not viable and hence the industries have been struggling to survive in the region. This in turn has caused lay-offs and shutting down of many industrial units over the years.

2.3 Poverty and Unemployment

Poverty in Telangana is the effect of long-term deprivation and loss. This is evident from the poor standard of living of people in the villages, low literacy levels, lack of employment opportunities and small incomes. Poverty is also characterised by poor infrastructural availability – fewer hospitals, schools, poor transport and scarce water resource both for drinking and agriculture. According to the Statistical Year Book 2015 (Government of Telangana) the literacy rate in rural Telangana is 57.30%, much lower than the national average of 72.99%.

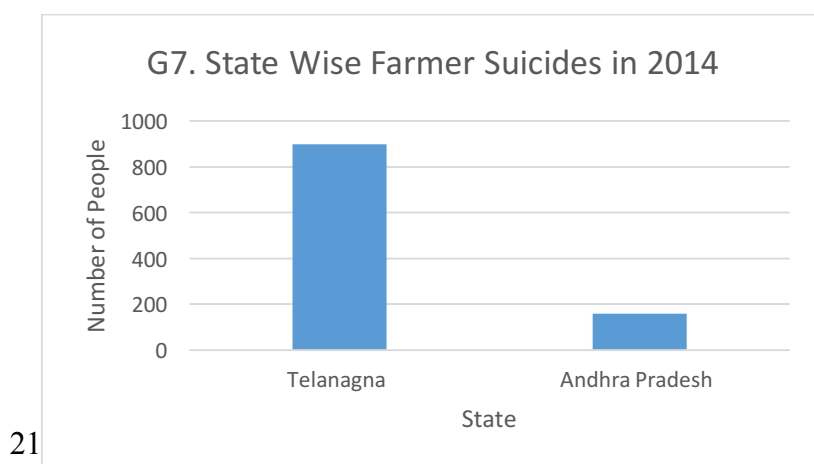
¹⁷ India. Sree Krishna Committee. *Committee for Consultations on the Situation in Andhra Pradesh*. N.p.: n.p., n.d. Web. 14 Sept. 2015. <<http://pib.nic.in/archieve/others/2011/jan/d2011010502.pdf>>.

Further, a high percentage of the rural population - 49.58%, is now dependent on manual, casual labor, reflecting uncertainty of job opportunities and low incomes.¹⁸ The Center for Economic and Social Sciences, Hyderabad finds that Telangana has been witnessing rapid casualization of labor where people are being thrown out of their land and trapped in poverty because of the lack of resources like water.¹⁹

2.4 Suicides and Migration

Telangana has been recording the second-highest suicide rate in the country, a large number of which are from the farming community, reflecting the crisis in the agriculture sector.

“More than 1.7 million farmers in the Telangana region depend on groundwater for agriculture, and have invested Rs. 25,000 crore of their own money in motors and pump sets. The burden of heavy expenditure on this account is leading to high number of farmer suicides in Telangana,” says K Chandrasekhar Rao of TRS.²⁰



¹⁸ "Statistical Yearbook 2015." (2015): n. pag. 2105. Web. 21 Sept. 2015. <<http://www.telangana.gov.in/PDFDocuments/Statistical%20Year%20Book%202015.pdf>>.

¹⁹ H, Nikhila. "Illiteracy, Unemployment Bog down Telangana." The Hindu. N.p., 5 July 2015. Web. 17 Sept. 2015. <<http://www.thehindu.com/news/national/andhra-pradesh/illiteracy-unemployment-bog-down-telangana/article7388294.ece>>.

²⁰ Seth, Bharat L. "Telangana's Water Grouse." *Down To Earth*. N.p., 29 Feb. 2012. Web. 19 Sept.

²¹ G7 – Appendix 1 Table 7 India. National Crime Records Bureau. *Farmer Suicides in India*. N.p.: n.p., 2015. Web. 12 Sept. 2015. <<http://ncrb.nic.in/ADSI2014/chapter-2A%20farmer%20suicides.pdf>>.

Academician and activist Professor Haragopal says, *"Majority of the workforce in Telangana has been eking out their livelihood in agriculture - a sector that's seriously strained. Due to the water scarcity, many farmers in Telangana were left unemployed and did not have any source of income along with high debts that they couldn't pay."*²²

The water crisis also led to large-scale migrations from rural Telangana. People started moving to cities like Hyderabad, Mumbai, Nagpur and many other places in search of jobs.

The Mahabubnagar district of Telangana tops the list with over 10,00,000 people migrating to Hyderabad and Ranga Reddy districts and to other far off cities in search of livelihood, mostly as daily-wage laborers. There is a similar surge of migrants from Medak (8,00,000 people), Nizamabad (7,00,000 people) and Adilabad (5,00,000 people). Most villages in Telangana wear a deserted look, because of this exodus.²³

"I was unable to earn even Rs. 70 per day in my village because of the drought condition. In Hyderabad, the living condition is bad, but I can earn Rs. 500 per day as a daily-wage laborer, for at least 20 days per month", says Ramulu, a migrant small farmer from Mahabubnagar.

2.5 A Land of Their Own

The demand for a separate state was already voiced by a handful of people in 1956 when the state was formed. In 1969, an agitation came to the fore, in a violent turn that took many lives. But it was suppressed and was not allowed to spread.

In 2002, the Separate Telangana Movement once again raised its head and gained momentum with strikes, rallies and agitation across the region involving, farmers, student

²² Nag, Kingshuk. *Battleground Telangana: Chronicle of an Agitation*. Noida: Harper Collins India, 2011. Print.

²³ "Drought Causing Distress Migration from Telangana." *Deccan Chronicle*. The Hindustan Times, 7 Aug. 2015. Web. 23 Sept. 2015. <<http://www.deccanchronicle.com/150807/nation-current-affairs/article/drought-causing-distress-migration-telangana>>.

groups, unemployed youth, industrial workers, intellectuals and politicians. Mr. K Chandrasekhar Rao, the present Chief Minister of Telangana formed a party - the Telangana Rashtra Samithi (TRS) with the single point agenda to create a separate state.



F1. A Collage of Newspaper Clips from the Archives

Telangana boiled for almost a decade, in the midst of protests, strikes, agitations, and almost come to a standstill till its separation in 2014. The trajectory of the Telangana Movement as covered by newspaper and articles over the years, points to various factors - poverty, illiteracy and unemployment, political and cultural domination. But one dominant feature throughout has been water. The promises, the betrayal and the economic impact as reported by newspapers day after day, is a testimony to the fact that the water crisis played one of the most important roles in the bifurcation of composite Andhra Pradesh. The people of Telangana had come to believe it was possible to resolve their problems if the power to decide was in their hands, and in their own land.

Conclusion

This study intended to explore two issues. One, whether water was a neglected resource in terms of maintaining traditional sources, whether the river waters were fairly distributed among the two regions and the implementation of the irrigation projects. Second, to study the socio-economic impact it had on the people and their lives. On both counts, this study reveals that there was a severe degradation of water resources in Telangana because of the neglect and apathy by subsequent governments. The non-materialization of Irrigation projects that were meant to serve this region, affected huge tracts of land, which have remained barren year after year.

Further, the data reveals that the lack of water impacted not just agriculture but also industries in Telangana. The data shows that this led to poverty and unemployment in the region, forcing people to migrate elsewhere in search of work. The primary data consisting of in-depth interviews with subject specialists clearly indicated that there was a lapse on the part of the government in allowing the water crisis to assume such mammoth proportions. From my personal observations and survey interviews of the farmers, it is clear that the Telangana farmers were in a dire strait and their situation would certainly have been better if they had access to water. The poverty, illiteracy of the family, unemployment and most other issues that they face today would largely be addressed if they were able to generate more income on the lands that they own through agriculture. Based on the data and the information that I have gathered, I can conclude that water was a key factor in the bifurcation of the composite Andhra Pradesh state. It is an established fact both from my own study and elsewhere that 'water' as a resource plays a very important role in the life of the people and the land. It was not an exaggeration when I started off my introduction by saying water 'is the new gold or the oil over which wars would be fought in the future.

This study is in part a post-mortem and in part an exploration of how an issue boils over to create a crisis situation. There is a need to study the points discussed here in greater detail and depth to help us understand the undercurrents of discontent and learn from it, for a peaceful coexistence.

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[2] "Definition of Geopolitical." Dictionary.com. Dictionary.com, n.d. Web. 11 June 2015.

<<http://dictionary.reference.com/browse/geopolitical>>.

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NOTE: The Photographs; On the title page and, F1 (Page 22) have been clicked by me. Also, the Maps, Map 1 and Map 2 on page 9 have been made by me digitally.

Other Resources Used Include:

Digital Design Software:

Adobe Photoshop. Vers. CS6. N.p.: Adobe, 2015. Computer software.

Citation Tool

EasyBib. Computer software. EasyBib. N.p., n.d. Web. 12 Sept. 2015. <<http://www.easybib.com/cite/view>>.

Plagiarism Check Tool

Turn It In. Computer software. Turn It In. N.p., n.d. Web. 25 Sept. 2015. <<http://www.turnitin.com>>.

Appendix 1 (Refer to Bibliography for Sources)

Corresponding Tables to the Graphs Used

G1.TABLE 1 Area Irrigated by Lakes and Tanks in Telangana⁴

Year	Area (Hectares)
2001	2,69,492
1997	2,84,919
1991	3,92,212
1981	3,49,730
1971	4,48,368
1961	4,11,494
1956	4,47,236

G2.TABLE 2 Altitude of States⁷

State	Altitude
Telangana	600
Andhra Pradesh	150

G3.TABLE 3 Area Irrigated in both States by Wells and Canals¹⁰

State	Canal	Wells
Telangana	3,00,621	5,88,884
Andhra Pradesh	13,49,126	2,99,079

G4.TABLE 4 State-wise Net Irrigated Area in 2015¹¹

State	Net Irrigated Area
Telangana	17.74
Andhra Pradesh	50.34

G5.TABLE 5 Population Density of States in 2015^{12A,12B}

State	Population Density Per Km2
Telangana	310
Andhra Pradesh	308

G6.TABLE 6 NSDP of States in 2014¹⁶

State	Net State Domestic Product 2014
Telangana	19314015
Andhra Pradesh	69042812

G7.TABLE 7 State-wise Farmer Suicides in 2014²¹

State	Farmer Suicides
Telangana	898
Andhra Pradesh	160

Appendix 2

6.1 The Surveys and Interviews

Farmers Survey

Gender

Male

Female

Age

15-20

20-30

30-40

40-50

50-60

60-70

70 +

Income

1000-10000

10000-25000

25000-50000

50000-100000

100000-200000

200000-1000000

Education Level

School

College

University (UG)

University (PG)

Ancestral Origin

Andhra Pradesh

Telangana

Other

Reason for Separation

Water

Governance

Lack of Education

Other Resource Distribution

Other

Water Scarcity

Physical

Economical

Water Access

Properly Piped, Clean Connection

Other Method of Water

Drinking Water

Filtered

Directly Consumed

Relations

To what extent do you feel that this issue has negatively impacted the relations of the two communities?

Not At All

Little

Very Much

Extremely

Definitions

Physical Water Scarcity: Physical water scarcity is the situation where there is not enough water to meet all demands, including that needed for ecosystems to function effectively.

Economic Water Scarcity: Economic water scarcity caused by a lack of investment in water or insufficient human capacity to satisfy the demand of water in areas where the population does not have the necessary monetary means to utilize an adequate source of water.

Geopolitical: The study or the application of the influence of political and economic geography on the politics, national power, foreign policy, etc., of a state.

Physical water scarcity is incurred when water resource development is approaching or has exceeded unsustainable levels. This relates to water availability, to water demand and implies that arid areas are not necessarily water scarce. Economic water scarcity on the other hand is when water is available locally but is not accessible for human, institutional or financial capital reasons. Economic water scarcity is often linked to poverty and lack of development, given the absence of infrastructure and resources to bring water to people.

Farmers

1. How much land do you own?
2. What crops do you grow? How much?
3. What was and is your primary source of water? RAIN / BOREWELL / RIVER / LAKE
4. What are the problems you faced over the years? Were they solved? Who's fault do you think it was?
5. Do you farm all throughout the year or only seasonally? How many in a year?
6. Are you dependent on electricity for water pumps etc.?
7. Do you think there was mismanagement because the states were one and Andhra was favored?
8. Do you think the bifurcation will solve it? How so?

6.2 Interview with the Industrialist

1. What industry do you run and where is it situated? How crucial is water to your industries functioning?
2. Is it an issue? What's your solution for it? Has badly has the water scarcity impacted your industry?

3. Are there any secondary implications?

6.3 Interview with the Water Sanitation and Urban Development

Specialist

1. Do you feel that the water crisis played a role in the division of the state? If so, how?
2. Do you think that the geographical setting of the two states played a role in the unequal distribution and access to the water?
3. If Telangana ran out of resources, then how could the separation possible help them? Is the bifurcation going to solve anything?
4. Was Telangana originally not dependent on lakes? Why did they dry out?
5. Did the Andhra Government try to find solutions to resolve the issues of water scarcity being faced in Telangana due to the geographic setting when they were in power? How many projects were proposed and completed?
6. What was the impact on the industries, government and people due to this water scarcity?