GEOGRAPHY IN THE ANTHROPOCENE

Selected papers presented at

International Geography Youth Summit – 2016
21 – 23 September 2016
Bengaluru

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Rs 50
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**Citation**


Example citation for specific article:

INTRODUCTION

The Institute of Geographical Studies (TIGS) was established in response to the dire need for an alternative to the geography education that is currently on offer. The curriculum does not encourage a practical or a personal view of geography. Nor does it foster an engagement with the discipline to look the world as our home that we share with other living and non-living things. Thus, the power of geography to foster a humane, just, benign, and inclusive world-view, and action based on such a view are sorely needed. TIGS offers a diverse non-formal platform for fostering precisely such a view and praxis of geography, especially for young children. One of our many activities is the International Geography Youth Summit (IGYS).

TIGS organized its first conference, the National Geography Youth Summit – 2014 (NGYS-2014) in 2014 at the campus of the Army Public School, Bengaluru. This was a pioneering effort and elicited very enthusiastic responses from participants.

Word of the quality of the NGYS-2014 spread considerably, and in 2016, the “National” became “International” and International Geography Youth Summit – 2016 (IGYS-2016) was held. Delegates from the USA and Australia participated and made interesting presentations on topics of interest and importance to the theme – Geography in the Anthropocene (the Age of the Human).

Several months prior to the IGYS-2016 TIGS held preparatory workshops at several different high schools in Bengaluru to spread awareness about the IGYS and to enthuse students to participate in it.

Students from several schools responded to this and IGYS-2016 was pretty much ‘taken over’ by these students. The whole experience was very exciting and exhilarating, with much geographical learning.

Some students very vociferously argued that IGYS should be an annual event and not a biennial event. In response to a report about this, Mrs Manjula Raman, Principal, Army Public School, Bengaluru, enthusiastically endorsed the students’ request. As of that moment, she said, we should make IGYS an annual event.

This document contains some selected papers / posters that were presented at IGYS-2016.

Why not all of them? Or even more than what we have here? The problem was with students’ lack of time as they are under so many pressures of the formal educational system. In spite of that, a few students were able to submit their work and collaborate with us in editing their papers. A few could not collaborate enough and we decided not to publish these for fear that the papers would be our voice and not the authors’ voice.

We hope to have more papers in the IGYS-2017 Proceedings.

Chandra Shekhar Balachandran

Founder & Director
The Institute of Geographical Studies
Bengaluru

7 July 2017
ACKNOWLEDGMENTS

The International Geography Youth Summit is always the culmination of many people’s very hard work, all of it done with great enthusiasm and despite multifarious other pulls on their many resources.

While it is impossible to thank each individual by name, TIGS gratefully acknowledges the various kinds of help received from:

• Individual financial donors
• Principal and Staff, Army Public School, Bengaluru
• Dharani USA, Inc., Chicago USA
• Volunteers, speakers, and workshop presenters who all worked *pro bono* and with immense energy and commitment
• Mr Vivek Dhar, TIGS webmaster, San Francisco, California, USA

Finally, on behalf of all the above and on behalf of TIGS, we acknowledge the great energy, verve, and professional depth that the student presenters brought to the three days of the summit.
PEOPLE’S PERCEPTIONS OF A LAKE IN CHENNAI

Pranav Shankar

Home-Schooler, and GeoVidyaa Geography Centre, Bengaluru

Abstract

Human action in the environment has led to many kinds of pollution. Addressing the pollution also requires human action. In both cases, awareness is important. Human environmental awareness is linked to several other factors also.

I am addressing issues around a lake at Adambakkam, Chennai, its sad story, and current state. I explore the connections among selected characteristics of people and their awareness about the lake. The personal characteristics include age, educational level attained, type of employment, and length of residence there. I correlate these with awareness about the level of pollution in the lake, changes in its size, and actions that people have taken to address the pollution.

I conducted interviews with people who live around the lake. I also got information from other personal sources and by filing an RTI request.

Broadly, most people know and agree the lake is polluted in different ways, all of these stemming from human action. Residents have taken very little action and the lake remains quite polluted.

Introduction

Figure 1 A less-polluted part of the lake. (Photo: Author)

Human interaction with nature is an important aspect of geography.

This is directly connected to the idea of the Anthropocene – the Human Epoch.

With increasing population, the need for buildings also increases. More land is required for this. In areas near lakes, this leads to encroachment on lakes, increased polluting inflows into lakes, and impacts on the lives of those who live around them.
In this study, I explore the perceptions among people living near the Adambakkam Lake, Chennai about that lake.

Figure 2: Effects of bad garbage management. (Photo: Author)

Study area

The lake is situated in a highly urbanized and densely populated area of Nanganallur. Many roadside shops are situated around the lake.
Figure 4: The urbanized settlement of Nanganallur. (Source: Google satellite view)

Figure 5: Original land zone use map. (Source: Alandur Thasildhar’s office)

This is a natural lake. It is around 14,000 square meters and is about 10 meters at its deepest. The lake is rain-fed and never dries up. However, the water level decreases during summer. (Source: Tamil Nadu Water Resources Department)
Currently, untreated sewage from the Nanganallur area is let into the lake via storm water drains.

Adambakkam Lake harbors a lot of wildlife such as snakes, birds, and insects. Many streets lead to the lake. Chances of soil erosion are very high. Many houses also border the shore of the lake.

Research questions
My main research questions were:

1. Is the lake polluted?
2. Do people know how it happened?

To address the main question, I considered the following sub-questions:

1. Are the people aware of the pollution in the lake?
2. What do they think are the causes?
3. What are the people’s perceptions of the lake?

Method
I am not testing any hypothesis. This is an exploratory study.

Primary method: interviews with residents
I interviewed 25 people from different houses near the lake.

I had not set a target for the number of people to interview. I was able to complete these 25 interviews in a span of five days.

Each interview took 5 minutes. Interviews were conducted during the weekend as it increased my chances of meeting more people. Interviews took place in their houses. There are about a hundred families around the lake.

Even though each interview took such a short time, it was hard to find willing respondents.

My questionnaire had ten questions – five open-ended and five closed questions. As each respondent spoke, I noted down what they said.

Data
Respondents’ personal characteristics
The age of the respondents varies from 17-65 years (N=25.)

Table 1 – Age profile of respondents.

<table>
<thead>
<tr>
<th>Gender</th>
<th>Number</th>
<th>Average age (years)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>19</td>
<td>30.1</td>
</tr>
<tr>
<td>Female</td>
<td>6</td>
<td>25.2</td>
</tr>
</tbody>
</table>
Length of residence and knowledge about the lake

Table 2 – Knowledge about the lake and length of residence there.

<table>
<thead>
<tr>
<th>Knowledge about the lake</th>
<th>Average length of residence</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Know more</td>
<td>21.3</td>
<td>7</td>
</tr>
<tr>
<td>Know less</td>
<td>12.75</td>
<td>18</td>
</tr>
</tbody>
</table>

People who did not say anything about the lake tended to have lived there for shorter time (12.75 years on average, N=18) than those who said something about the lake. The people who lived there longer (21.3 years on average, N=7) knew more (Table 2).

Table 3 – Education levels and knowledge about the lake.

<table>
<thead>
<tr>
<th>Occupation</th>
<th>Education level</th>
<th>Respondents’ quotes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Florist</td>
<td>Primary school</td>
<td>“Used to be a huge lake 3 times the size it is today. Also the lake used to harbor lot of bird life now all is lost due to the increase of pollution”</td>
</tr>
<tr>
<td>BSNL DGM</td>
<td>B.Sc., AMIE</td>
<td>“We know its polluted but cleanups are also initiated”</td>
</tr>
<tr>
<td>Milkman</td>
<td>High school</td>
<td>“Due to the metro construction the water path has been blocked causing the lake to breach often”</td>
</tr>
<tr>
<td>Collective executive</td>
<td>Diploma</td>
<td>“Don’t know much.”</td>
</tr>
</tbody>
</table>

Time spent with the lake

People with fewer years of schooling and having their occupation around or near the lake seems to know the changes that happen around the lake.

The more time they spent with the lake the more their awareness is.

Some respondents shared additional information about the lake:

“This lake used to be very big the size it is currently is very small in comparison, due to lack of maintenance and encroachment it has decreased in size.” (Resident in the area for 32 years)

“The lake is home for a lot of wild life, recently it has drastically decreased due to more structures upcoming projects such as the metro.” (Florist, resident for 27 years)

“I have observed increase in insects due to stagnant water, the metro could be obstructing the water from draining.” (Milkman, resident for 13 years)

Length of residence and pollution change

The longer people have lived near the lake, the more remarks they made about changes in the pollution level of the lake.

Fifteen out of twenty-five people had said the lake size has changed. Out of twenty-five people twenty agreed that pollution has increased from the time they first moved in to their residence near the lake. The average time they have lived there is 18.4 years (N=20). Fifteen out of twenty agree that the lake size has decreased.
Conclusion

People’s perception of the lake, and the changes in it, varies. One of the main factors affecting their perception could be their socioeconomic status. Their occupation and education also influence their perception.

One of the practical ways I see of keeping the lake clean is to spread awareness and involve the residents in cleanups initiated. Along with this, pollution flowing into the lake, such as sewage inflow, also needs to be addressed.

Table 4 – Action taken by some respondents.

<table>
<thead>
<tr>
<th>Age</th>
<th>Occupation</th>
<th>Length of residence (Years)</th>
<th>Perspective on lake pollution</th>
<th>Personal action taken to reduce pollution</th>
</tr>
</thead>
<tbody>
<tr>
<td>18</td>
<td>Student</td>
<td>6</td>
<td>Yes it is polluted</td>
<td>Lodged complaints to corporation on sewage inflow</td>
</tr>
<tr>
<td>26</td>
<td>House wife</td>
<td>5</td>
<td>Yes it is polluted</td>
<td>Not throwing garbage into the lake</td>
</tr>
<tr>
<td>27</td>
<td>Driver</td>
<td>25</td>
<td>Its very much polluted</td>
<td>Participated in cleanups and put up posters near the lake warning people of the dangers of polluting the lake and littering</td>
</tr>
</tbody>
</table>

Younger respondents average (age=25.6 years - N=6) have taken action to help preserve the lake comparatively to older residents. This could be due to more awareness present in younger residents. The physical strength of the person could also play a major role in their perception on the lake.

92% (N=23) of the people think the pollution of the lake is due to:

- Encroachment
- Sewage inflow
- Garbage disposal into the lake
- No maintenance
- Oil inflow
- Open defecation

Acknowledgments

Thanks to the following, for their help with this study:

- Mr. Arun Krishnamoorthy (Environmental Foundation of India)
- The respondents
- The Water Recourses Department of Tamil Nadu
- Mr. Guru Prasath for getting the master plan for CMA- 2026
- Dr. Chandra Shekhar Balachandran, The Institute of Geographical Studies
- Mrs. Shripriya Shankar (my mother)
EMOTION MAP OF VIDGYAGYAN SCHOOL

(Poster presentation)

Kritika, and Ashutosh Rana

Vidyagyan School, Sitapur, Uttar Pradesh

Introduction

We have emotional reactions to places. We feel different emotions in different places based on many different factors. Happiness, boredom, fear, sadness, etc. are often associated with different places. Emotions are subjective and vary from person to person even associating with the same situation or place.

In this, the Age of the Anthropocene, we humans have greatly modified our natural environment in order to satisfy our needs. This modified environment affects our emotions. Many emotions are our reactions to these surroundings.

We are all from a rural background in Uttar Pradesh and coming to Vidyagyan was a great change for us. This change affected our personality, and in turn, affected our emotions.

So we decided to present our emotions towards Geography of Vidyagyan through an emotion map.

We prepared a map of the emotions that our peers at our school felt. We made a poster of our research and presented it at International Geography Youth Summit – 2016 (IGYS-2016).

Method

We call ourselves Vidyagyanies. We surveyed a random group of Vidyaganies (Classes 6 to 12). For each chosen location, we asked them to choose one of three emotions that they felt for that place. The three emotions we mapped were: (1) Happy, (2) Bored, and (3) Sad.

On a chart we drew a map of our whole school campus. On this map, we marked the average numbers of emotions identified for each location. The data are presented as a bar graph on each location on the map. Each bar is divided into three parts, each part showing one emotion.

What we learned

This research gave us an idea that in this present generation the children are attracted towards spaces that humans have made luxurious. Modern technology also has made them dependent on this, to an extent.

At IGYS-2016, we presented our research and also learned a lot much. We saw Geography beyond our textbooks. We learned to observe the geography in, and of, our surroundings.

While we are generally aware of emotions, looking at them through geography was very new to us. As young geographers we tried to explore as much as we can. And this was good platform for us to learn.

Acknowledgments

Our thanks to our teacher, Mr Akhilesh Mishra.
Our poster
MY FIRST GEOGRAPHY EXPERIENCE

Vaaman Sonathi

Student, CASCADE Family Learning Cooperative, Chennai

Abstract

In this paper, I explore geography in the form of a story about my vacation trip to my grandparents’ house in North Lakhimpur, Assam for a month.

During this trip, I experienced two kinds of geography. One was inside me and the other was outside me. Geography outside me was as it was – the land, culture, and the people. But geography inside me was different because I got North Lakhimpur with me to my home.

The place where my cousins and other people lived could be any place. But it was special to me because everyone here during my stay cared for me continuously. This special feeling of love for a place continues in my mind. Whenever I think of North Lakhimpur, I remember my experiences of the place. When I see some kinds of geography here in Chennai, where I live, I remember North Lakhimpur – for example, when it rains, or when I see slums.

Introduction

I chose to study my trip after I learned about the nature of geography which is the connection between you and the place.

Before I started studying geography, I used to think that geography was only about what was outside of me – land, water, vegetation, latitude, longitude, etc. However, once I started studying it, I found that it was not just what was outside, it was also what was inside of me. I realized that geography is a way for me to connect with a place and interact with it.

In this paper, I look at my trip with that viewpoint in mind. As a result, I find many new aspects to the trip that I had not thought of before.

Study area

My area of study was in North Lakhimpur, a small place that most people will not have heard of or know about. The District North Lakhimpur is in central Assam (Figure 1). North Lakhimpur town has a population of 60,000 approximately and the whole district, more than 100,000 (Wikipedia: https://en.wikipedia.org/wiki/North_Lakhimpur). The landscape is full of huge plantations and wet forests. It lies at 27°N, 94°E. It is 101 meters above sea level.

It is a really crowded town, especially the main roads that are very dusty. The dust gets into our eyes. There are 25 schools and 8 colleges (https://en.wikipedia.org/wiki/North_Lakhimpur).

To reach North Lakhimpur by train there is the North eastern express from Guwahati and by flying. The airport from North Lakhimpur handles planes only to and from Kolkata. The Brahmaputra river is the only river near north Lakhimpur but is still 150 kilometers away.

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1 Editor’s note: Vaaman was 11 years old at the time of presenting this paper, making him the youngest presenter at IGYS.
Method

I conducted my study by looking around the place and almost every part of the study was my daily life there. I did not plan this study with any specific expectations. I went with the experiences that came to me. I observed these experiences and reflected on them. The reflections started during my visit to North Lakhimpur and are still on-going. I will probably continue these reflections for many years to come. I already knew that I had to present it in IGYS 2016 so I quickly noted everything in a Word document about the trip after coming back to Chennai.

Analysis

The data I collected were my experiences as I went around meeting new people, seeing the culture, and nature. What I felt about them were my work and data.

For example, when we were coming back to Chennai by train, we had to change trains in a small town in Assam called Rangia. We had to wait for 6 hours in Rangia, so we went to the dormitory in the railway station to rest. However, the man in charge didn’t take any money. He really took good care of us. When my mother insisted that he take the money, he said he could not as she was a daughter of North Lakhimpur. My mother was very moved at this incidence though I could not understand what it meant.

I really love North Lakhimpur because of one main point. During my entire stay there, everyone cared for me in very special ways. North Lakhimpur is special because of the caring I get makes it different from any other place for me.

In my experience I saw many ups and downs in plans. The day when I was to go to North Lakhimpur my sister fell ill and so we were to go after three days. I got really frustrated at this because for me the most favourite part of a trip is the journey. My anxiety was most about the journey because I love travelling. Only I after I reached North Lakhimpur I realized that North Lakhimpur was more about the care than the travel for me. Without that, it would be North Lakhimpur not MY North Lakhimpur.

I lived in a home, not a house. It was not just North Lakhimpur, but my North Lakhimpur. These feelings came because of the interactions I had with people there. Without these interactions, I would have been in a house in just another place, which happened to be called North Lakhimpur.
I went to my mom’s friend’s place and I felt like jumping in the Brahmaputra river because it looked very inviting. I also saw Monabari tea estate, the largest tea estate in Asia and is 1373 hectares I was amazed to see such a huge plantation.

Assam is full of forests as well as habitats for animals and I managed to see some beautiful colored lizards which really fascinated me. I used to play cricket with my brothers. The ball used to go to the other house and it took me some time to climb that wall and come back.

Another highlight of the trip was the return journey by train because I was staying in a train for 3 days. In the train we met new people and as we moved to different states I good see the land, language, culture, etc. moving with us. After three whole days I arrived in Chennai. As I stepped out of the train, I realized that I wanted to go back into the train because I was coming from the dry, cold train to the hot, sultry air of Chennai.

**Conclusion**

After the journey I learnt that geography could be anything because I felt it all around me. The people, the culture, the place, and how I interacted with these ... was the geography I had learnt. This not only changed what I saw but also what I felt. I am still feeling it now and might never forget it.

**Acknowledgements**

I would like to thank the people who helped and supported me to complete the presentation: Dr. C S Balachandran, Ms Vidya Shankar. Mr J. Murali Krishnan and my parents Mr Sonathi Venkateshwarlu and Ms A. Nirmala  Sonathi.
URBANIZATION – AN OPTIMISTIC THOUGHT

S. Ritesh Kumar (Class 10), Ranjan M. (Class 10), and Purushottam N. (Class 9)

ACTS Secondary School, Bengaluru

Abstract

Our research was about urbanization in south Bengaluru, the positive and negative impacts of that, and how can we make the developments in a positive way. Places covered: Hennagara, Bommasandra, Narayana Health City, Biocon (Hebbagodi), and Electronic City.

We addressed the following points: how the place was before, what developments have happened in the areas, negative and positive impacts of the same, and measures and initiatives taken for further conservation.

We interviewed local people (one in each of the first two places) to get an idea of how things have changed in each of the localities. In the third locality, we could not get anyone to respond to our queries.

The third location was an encroached lake near Electronic City. A part of the lake has become a waste dumping area. But the local inhabitants were not ready to give the details. We were only able to get photos of that area. We had a short discussion with an IT professional in Electronic City who shared his optimistic thought on the development of the Silicon City.

We covered one of the initiatives taken by ACTS (Agriculture Craft Trade Studies) institutions in conserving lakes: the "lake marathon". We studied the secondary research of town planning in the whole city of Bengaluru, how the developments have affected the climate and environment in the city etc.

Introduction

Urbanization is a cultural phenomenon. It brings many benefits as well as problems. Our aim is to highlight some of the benefits that urbanization brings.

The research used primary as well as secondary sources. We interviewed people and visited sites.

It is through urbanization that Bengaluru has attained great prominence. Yet, urbanization is blamed for all the negative environmental issues. This research aims to show that urbanization also brings us benefits, not only negative issues.

Through the course of this study, we came to know about a lot of geographical topics like relief features, rainfall, and local water bodies.

Study Area

Our research was situated in south Bengaluru. We conducted our research in two places:

1. A small village called Kithignahalli near Narayana Health City of Anekal Taluk and areas around Bommasandra, and
2. A waste management plant in Doddanamangala area near Electronics City.

Previously, these areas were used for agriculture, but now these lands are encroached for industrial development, which has led the way for businesses.
Figure 7: Study area 1. (Image: Google Earth)
Figure 8: Study area 2. (Image: Google Earth)

Topic of Study

Bengaluru has experienced urbanization for quite some time now. For our study, we chose two particular areas in South Bengaluru which had experienced similar impacts to the rest of Bengaluru.

Method

First, we did some background reading about the lakes of Bengaluru in the 20th century, local trade, common occupations, lifestyle of people, resource utilization in those days and the climatic conditions of Bengaluru. We even studied about a lake in South Bengaluru named Hennagara Lake, how it was being utilized, and how it helped in agriculture. South Bengaluru was an agricultural area, but has now become a major industrial area of the city.

These background readings helped us understand how Bengaluru changed from “The Garden City” to “The Silicon Valley of India”, and the impacts of these changes.

From these studies, we came to know the different negative impacts of urbanization and its causes. We then started working on the solutions to tackle the problems. We finally planned out few solutions for this problem.

We interviewed four people for this project:

1. Sri V.S. Mani: He is a sixty-five year old person who lived in small village called Kitaganhalli in Anekal taluk of South Bengaluru. We asked him about Bengaluru and his village in those days. We even asked him about a lake near his village.
2. **Host of the marathon**: We interviewed the host of the marathon held in Sarjapura. The marathon was for creating a awareness of saving lakes. We inquired from him the significance of the marathon and why the lakes in and around Sarjapura had to be saved.

3. **Dr. Kameshwar**: He is the head of the waste management department of biocon. We asked him about the methods used by his company to dispose waste. He even gave tips to save polluted lakes in Bengaluru.

4. **Mr. Sumanth Bhatt**: Software Engineer.

**Data Analysis**

Interview with Sri V.S. Mani - These were his comments:

1. Hennagara Lake was the biggest lake in Anekal Taluk which was a completely full throughout the year in his childhood days.
2. He had noticed the changes taking place in his surrounding urbanization progressed tremendously but also left out disadvantages which are as follows:
   a. The rainfall had decreased drastically due to deforestation for the process of urbanization (i.e., to build houses, factory sheds etc).
   b. Agricultural production also had come down as most of the fertile lands were cleared for the rise of industries.
3. The suggested a few environmental conservation measures these included composting, afforestation, maintaining the water table, and preserving soil fertility

Interview with the host of the marathon:

1. This marathon was hosted to create awareness among people to save 26 lakes from being polluted in and around Sarjapura by conducting public programmes among people living there.
2. Other programs of this kind are also needed.

Interview with Dr. Kameshwar:

1. He mentioned mainly the *raja kaluves* (royal canals; canals built by kings) which were dug everywhere for disposals of organic waste.
2. Microbes should be used in each flush so that the impure water gets completely purified before entering the sanitary pipes.
3. He emphasized that every organisation must follow the 3R's (Reduce, Reuse, Recycle).

**Conclusion**

By the end of the research we concluded that urbanization not the only cause for Bengaluru's present condition as Bengaluru mostly consists of IT companies. It is people's carelessness and greed which is responsible for Bengaluru's Present condition.

1. Bengaluru is experiencing a sustainable urbanization.
2. It is because of human greed and carelessness that Bengaluru is losing its natural beauty.
3. Therefore, if people move away from carelessness and greed to a more sustainable way of thinking and acting, Bengaluru can enjoy more benefits at less cost to the environment. This would make Bengaluru's urbanization more sustainable.

**Sources**

- Dr. Kameshwar (head of Waste Department Management department of Biocon)
- Sri V.S. Mani (life-long resident of Kitiganahalli village)
- Sri Sumant Bhatt, an IT professional
• The Gram Panchayat (Village Council) of Doddanamangala

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