

Sriniketan Santiniketan Area in West Bengal, India

human ecology, urban metabolism and sustainable urban development

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November 3, 2017

Introduction

This study traces a brief environmental history of the Sriniketan Santiniketan Area (SSA) and addresses challenges of further urban development from the perspectives of environment, population, ecology, heritage conservation, utilisation of resources such as land and water, tourism growths and other economic activities such as craft and cottage industry. In 1862, when the first inhabitants settled there the population was rather scarce and mainly tribal, the estimation is that by 2025 it will reach up to 210.000 inhabitants. The focus of the study is on natural environment, urban planning, potentials and fragilities. The relationship to the nearby urban localities, tribal villages as well as to Calcutta – West Bengal's capital – are analysed. Special attention is given to the cultural heritage dimension of the area, consisting in the work of Tagore, his vision and the continuation of his tradition within today's life of the area.

Inception

The area around Sriniketan had little historical importance until the 1850's, when nearby Bolpur became a train station of Eastern Railway, which placed it at the junction of two major roads. This triggered trade, prosperity and urban development. In the decades that followed, in conjuncture with changing production techniques and commercialization of agriculture, Bolpur attracted people from nearby settlements (SSDA, 2016)¹. Santiniketan itself owes its inception to its quality of being "conductive to meditation". In 1862, a wealthy man named Debendranath Tagore, bought the land with the only building on it and decided to settle an *ashram* (place for religious worship) there. His son was going to set up a small school in 1901 at the location, which twenty years later he transformed into a university. The growing of the university added specific features that caused a different urban development pattern compared to other places in the district. Hundred twenty years later, what used to be a small town hidden in the woods, became a famous Indian university town. The Visva-Bharati university is related with two Nobel prize winners: Rabindranath Tagore, its visionary founder, who received the prize for poetry in 1913 and Amartya Sen for his contributions to Welfare economics in 1998.

Landscape, flows of materials and energy, population and economy

The SSA area comprise of 106.43 square km of land and is bordered by the rivers Kopai and Ajay at North and at South. The Benuria canal, which crosses its northern region, plays an important role in the agriculture of the area. From an administrative point of view, the urban core of the area is situated in the Bolbur municipality.

The land of Santiniketan is situated at about 200 above sea level is arid and has suffered erosion due to deforestation, dust storms in the hot seasons and heavy rain during the monsoons. The temperature of the region varies between 34 - 45°C in the summer and 8 -15°C in the winter. The area naturally drains in northern as well as in southern part, which means that there is little chance of rain water stagnation, as water rapidly drains out. This plays a role in the erosion of soil. Being lateritic in nature is another factor that adds to the soil being highly vulnerable to erosion (SSDA, 2016).

According to SSDA, the main source of water supply in the area is ground water. The water supply has been facilitated through the Indo-German Water Supply project (funded 70% by German government and 30% by the West Bengal government). The total capacity of water treated and distributed under this project is 26900 m³ with a life time till 2021, within an area

¹ Sriniketan Santiniketan Development Authority, the governmental agency responsible for regulating urban development

of 324.47Sq.km. The total length of pipeline is of 150 km in urban area and 250 km in rural area, providing piped water for 60% of the population. Around 26% of the population has to travel long distance to reach a water facility. The rural population doesn't have proper accessibility to water supply. A proposal of 163 km pipelines to meet the demand deficit to explore rain water harvesting has been made (SSDA, 2016).

Sriniketan Santiniketan Area is dependent on surface drainage system which is insufficient and has no proper outlet system. In totality, the connection of households to closed drains is of only 6%, to open drains is 45% and 49% don't have drainage system. Within Bolpur municipality 10% households have waste water connection to closed drains, 69% to open drains and 21% don't have any drainage facility. In rural areas, only 3% of households are connected to closed drains, 27% to open drains and 70% has no drainage facility. The area as a whole lacks a proper sewerage system, waste water management and treatment facility. According to surveys by SSDA, the sanitation facility in the area is very poor, being accessible to only 53% of the households. Solid waste management in SSA is very poor.

SSA consumes 18.59 MW/ day of hydroelectric power and 39.50 MW/day of thermal power by the two main energy suppliers in West Bengal. The electricity connection is available to 80% of households in Bolpur Municipality; but to only 50% of households in rural areas. The remaining 50% of households are dependent on kerosene oil or some other means for lighting. In overall SSPA, 63% of households have electricity connection (SSDA, 2016).

The land of SSA is predominantly used for agriculture, with 53.38% of land area under agricultural use. An increase of 5.25 times growth of urban areas during the last three decades is causing decline to vegetation, agricultural and ecological areas. From an ownership perspective, majority of the land is private (68%), with the rest of the land being owned by government (20%) and trusts (4%), institutions etc (SSDA, 2016).

In 2011, SSA had 157.188 inhabitants out of which 92.370 was urban and 64.818 rural population. The estimated population by 2025 is of 210.000. The main motivators for staying in SSA have been primarily the small-town atmosphere, which implies knowing the people and developing a neighborhood kinship. Access to good educational facilities is another prime motivator, next to the much-appreciated local culture and the beauty of the natural environment. For the rural population, the easy marketability of agricultural products is a critical reason for staying in the area. This is a reason why Bolpur – Santiniketan has developed into a major center for trading and business. A large proportion of the local economy, with the exception of the educational sector, is informal, with a notable gap between the academic and non-academically involved population.

From an occupational perspective, the major primary activity of the area is agriculture and to some extent, fishery – in the rural areas. Art & craft- based household and cottage industries represent second sector activities. The main cottage industries include *batik*, *macramé*, cotton and locally-harvested silk textiles, leather, pottery and terracotta, woodcarving, bamboo and cane craft, metal works and various tribal art crafts. Sriniketan is known for its dairy industry and as a forestry center, rice and oilseed milling. Tourism, transportation, hospitality business, trade and commerce (tertiary sector) is also strongly present in the area, although chaotically developed – mainly in the urban areas. In recent decades, the tertiary sector has seen a tremendous growth consisting in increased tourism activities, hospitality businesses and various developments in real estate (SSDA, 2016). The growth of tourism being mainly unplanned, it has caused the normal life of residents to be disrupted, raise of estate prices and local transportation, an aspect we analyze in detail in the next section.

Urban development and architecture style from the beginning to today's crisis

The first constructions at Santiniketan were built by the Tagore family. Most of their estate was donated to the schools they later set up. Part of the houses were built with help of donations and decorated by artists and with communal effort, such as the widow of a business man from Bombay who donated Rs 15,200 in 1925, “*to construct a restroom for travellers and a well and water trough to provide drinking water to travellers and beasts*”. Tagore used the money attached to the Nobel prize to extend his schools. Some buildings were erected in reverence to one or other member of the Tagore family or to teaching personalities in town. The proximity of trees, gardens and the use of natural materials (such as mud, wood) was preferred. In terms of style, simplicity, austerity and elegance of proportion were the guidelines. The open areas between the various buildings seem to be ‘centred’ by trees, which are surrounded by low concrete structures that serve as benches where teachers and students meet for informal discussions.

Santiniketan, previously known as green and quiet, where one would never hear a “honking of a car or bus roaring by”, became endangered by unplanned urbanization and illegal construction, its air and water under threat of increasing pollution, according to an article in *The Telegraph India*². Worries about its development were expressed by local residents, who fear the town is becoming a “hideous concrete jungle for commercial reasons”. If in the seventies its streets were rather empty, they became clogged with rickshaws, taxis, buses and lorries. Dust and fumes are affecting the air in town and a variety of shops have been constructed all over. The town became a weekend and real estate investment destination for Calcutta's elite, due to interesting land prices – which confirms von Thunen's theory on urban expansion (Sinclair, 1967). A first major population increase took place in the eighties with people from nearby Bolpur moving in, mainly for fallow land and employment. As tourism boomed in the same period, next to fast-food shops and souvenir stalls that appeared in town, slums with huts made of cloth, jute bags and plastic sheets also emerged. As there was no well-functioning drainage, sewerage or waste management system, this evolution presented a real danger for the town. The new constructions were scattered and variegated: crammed clusters of houses one next to another, slum areas, outskirts with bungalows, pools and small bridges, neighborhoods with apartment blocks awaiting their buyers on fields that used to be surrounding forests –all emerged in unplanned ways. According to old residents, SSDA was to blame, as they were mainly interested in commercial projects and not in developing Santiniketan into an academic and cultural center³. One of the few remaining wetlands of Santiniketan containing a large pond once home of migratory birds — ended in the hands of a developing agency that plans to build a park with various rides, food and souvenir stalls and a mini golf course for tourists, despite protests of the local residents, who see the project as a “disfiguring” of the town. SSDA contrarily argues that the area was “free-for-all” before the agency was created and that they set building rules and stopped unplanned growth, according to the article.

In 2013, Calcutta High Court directed a construction company to pay a fine of Rs 10 lakh to the Visva-Bharati University for constructing a building within 500 metres of the campus by flouting a central rule⁴. The company was asked to demolish the building. and to pay Rs 25,000 to the petitioners, as cost of the case. Since August 2013, construction has stopped in the area,

² https://www.telegraphindia.com/1040125/asp/opinion/story_2814288.asp

³ *ibidem*

⁴ https://www.telegraphindia.com/1150112/jsp/bengal/story_8001.jsp

in an attempt to stop more ill-planned buildings, roads causing traffic jams, water-logging and other problems coming up in the area⁵.

The SSDA agency started acknowledging the unplanned growth of the concrete jungle in 2014⁶, after years of erratic architecture and tall constructions emerged. The university complex is a porous campus with certain specialties, like the existence of tribal villages. The fact that there is an overlap of municipal and panchayat (wise and respected elders chosen and accepted by the local community⁷) controls over the land under consideration also causes some administrative crisis," the agency argued. Restrictions and designated no-construction zones are necessary, considering the eco-fragile character of the area.

Cultural heritage

Tagore's first school was established (1901) with five students and five teachers, in the tradition of ancient forest hermitages with teaching taking place in open air, as a reaction to the mechanical, repetitive teaching practiced in the colonial schools of the time. The school was designed as to foster man's encounter with nature and inquiry into the mind. In 1992 Visva-Bharati was inaugurated offering as initial disciplines Hindi studies, Sino Asian studies, humanities, fine arts and music. The fact that graduation ceremony at Visva-Bharati was "marked by the gifting of a *chhatim* leaf", shows that modesty and simplicity as moral values were seen as desirable achievements. In times when education and religion were tightly interwoven, Tagore replaced religious worship with celebration and exploration of nature and wanted everyone who joined his school to be able to become a free individual, by means of self-exploration and dialogue. The Centre for Rural Reconstruction was set up at Sriniketan with the main aims to emancipate villagers, embodying Tagore's vision on social inclusion. Its focus are village crafts, education for village children and adults, organic farming and animal husbandry (Archaeological Survey of India, 2010). Today, the university counts about 6.500 students and 515 academic staff (Wikipedia, 2013).

Next to Tagore's belief in India's traditional *forest hermitages* as the nests of Vedic knowledge, the recognition offered by the International community granting him the Nobel prize and his travels in the West, the encounters with Einstein, Maria Montessori and other progressive minds, no doubt influenced his approaches. In times marked by British rule and sectarian segregation, Tagore invited people from different countries, cultures, casts and religions (3 out of 5 teachers were Christian) and encouraged women to join in teaching and studying, advocating female emancipation and participation. Based on the revival of the Indian *tapoban* (penance in a forest) tradition, Santiniketan became a model of education aiming at *cultivating the feeling* and embracing humanist ideologies. Competition and focus on examination were not lauded. Tagore's efforts to bring education to the surrounding tribal communities inspired Gandhi in setting up his ashrams and adopting a *teaching through craft* approach to education. Tagore's vision influenced Gandhi (freedom movement, rural reconstruction, teaching through craft), Nehru (his policy of non-alignment during the Cold War) and later Indira Ghandi.

The World Economic Forum (WEF) recently published an article by Beuheler & Hirano (2017), a study of cities from the perspective of *mindfulness* and established a list of ten most

⁵ ibidem

⁶ <https://timesofindia.indiatimes.com/city/kolkata/IIT-Kharagpur-blueprint-for-new-look-Santiniketan/articleshow/44952901.cms>

⁷ https://en.wikipedia.org/wiki/Panchayati_raj

“mindful” cities in the world. The main criteria were areas in the city that foster meditation and introspection, characterised by low level of noise and pollution, proximity to nature, much in the line with the reasons why Santiniketan initially came into existence. The fact that mindfulness of cities is a subject on the agenda of WEF shows how avant-garde Tagore was a hundred of years ago. His vision on education in relation to environment and inclusion can be read in United Nations Sustainability Goals to provide “*education for sustainable development and sustainable lifestyles, human rights, gender equality, promotion of a culture of peace and non-violence, global citizenship and appreciation of cultural diversity and of culture’s contribution to sustainable development*” (United Nations, 2015).

According to some accounts, the material and cultural fabric of the area seem to be decaying. In an article about the Tagore Museum and the adjacent houses, Indira Chowdhury compares the museum to a middle age institution, characterised by poor design and lack of technology, perhaps due to lack of funds and engagement. The author claims that a contemporary design would better suggest how the buildings used to function as hubs for dialog and social emancipation in Tagore’s time (Chowdhury, 2013). The situation reflects the weak financial means of the institutions in charge as well as lack of entrepreneurial spirit within the younger generation – a good website does not necessarily require a high budget. Accounts of decay in the social fabric also came to light, such as the stealing of Tagore’s Nobel medal in 2003 from the local museum, “*campus brawls, incidents of sexual harassment (the latest being the alleged sexual assault of a student belonging to its arts faculty (...)), allegations of forgery and vindictive administrative measures*”. According to Tagore's great grandson, the Visva-Bharati officials are responsible for the declining of the social life at the campus (Bhabani, 2014).

In 2011, Visva-Bharati was unsuccessfully nominated as entry for the World Heritage Sites, due to some requirements lacking, such as a delineated buffer zone to protect the concerned site. A recent collaboration of the Department for Urban Studies and Planning at MIT with Architecture and Planning students from IIT Kharagpur, the following aspects are being investigated: “*(1) how to balance growth versus historic preservation in Santiniketan, Rabindranath Tagore’s egalitarian vision of creating an educational centre that would cultivate India’s liberal imaginary, (2) Employment generation and the position of Santiniketan-Bolpur town in the regional economic flows of West Bengal and Kolkata, (3) Watershed management of the eco-fragile Khowai, a landform unique to this region, and its place in the growth dilemma.*” (MIT, 2017). The project aims to propose solutions for balancing conservation with sustainable growth, creation of employment and efficient water management in Santiniketan (MIT, 2017).

Cosmopolitanism in a core - periphery perspective

Various Indian, as well as Chinese, Japanese, Tibetan, Western and Islamic traditions were studied in a spirit of celebrating diversity. The first international student was from Japan. Exchanges took place between the Visva-Bharati University and other universities in the world, allowing international students to explore Tagore’s educational approaches and the local culture, while encountering other international students and scholars. Despite its modest scale, Santiniketan functioned like a hub for international encounters, in the way contemporary city is seen today like a “*quintessential place for exchange*” (Ash, 2010).

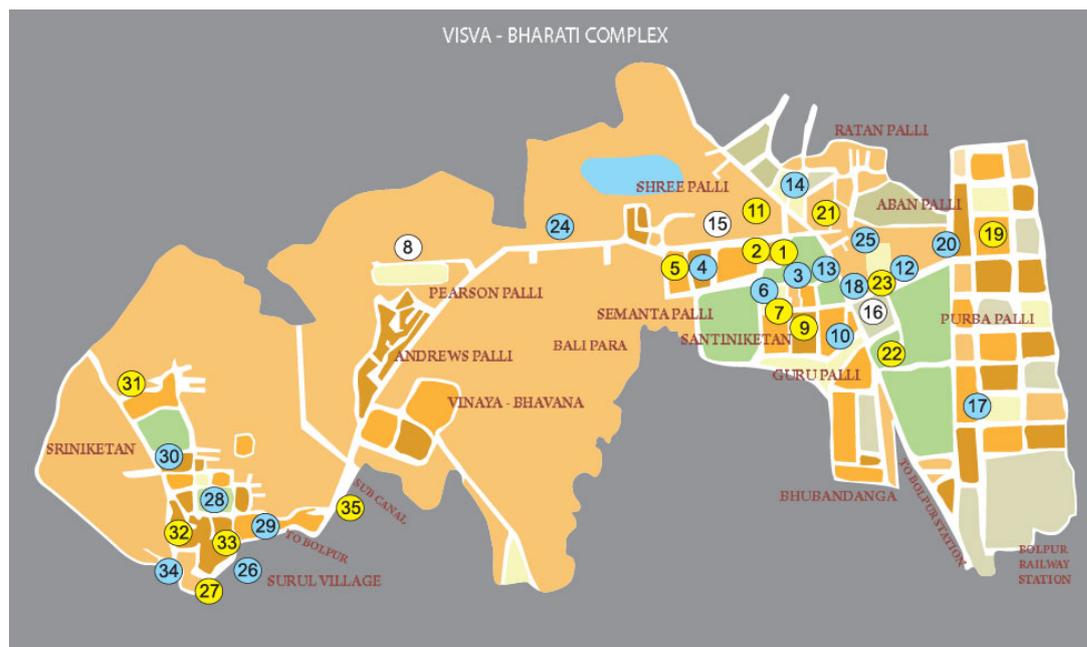
From the perspective of the World System Model, while geographically Santiniketan is on the hinterland of Kolkata, in terms of intellectual, political and cultural impact, its university and

Tagore's work have played a crucial role in shaping the cultural heritage of West Bengal (rural inclusion), has given India its national anthem and enriched world literature and economics with creations worth two Nobel prizes. Promoting peace and universal values (such as preserving the environment and local traditions) were central in Tagore's work, and can be found today on United Nations agenda. If it is to associate the *core* with innovation, cosmopolitanism and high level of knowledge production (although, this is not a term Tagore would have used to describe the process of learning) then Santiniketan is in its own way an important world centre for education. Moreover, new economic theories were developed starting from here: the Santiniketan born Nobel prize winning economist Amartya Sen, who dedicated his work to *Welfare economics*, proposes to evaluate economic policies in terms of the effects they have on the well-being of the community. According to Sen (1999), development occurs when *the real freedoms that individuals can enjoy are increasing*, rather than when the GDP is raising. The freedoms an individual should enjoy, according to him, are: political freedoms, economic facilities, social opportunities, transparency guarantees and protective security. Circulation of knowledge as commodity, its production and consumption, seems to follow a clear pattern: world renowned scientists born and trained in the so-called periphery, tend to migrate towards (and to be assimilated by) the core zones: we rarely see an Oxford trained scientist settling in Kolkata or Santiniketan for a teaching job, while the other way around migration is more common. In a time when knowledge and expertise is seen as superior to other types of commodities, and is a shaping factor of progress itself, this flux of capacity from poor to rich countries (*brain drain*) is not insignificant.

Future development and sustainability challenges

Based on a survey of the socio-economic map and traffic movement in the area, the agency, together with the Planning and Architecture department of IIT Kharagpur, produced a land use control development plan (LUDCP) for the area (SSDA, 2016). According to the plan, SSA is estimated to keep its dominant agrarian character in the coming decade. The tourism and service sector will provide major employment generation potential, next to agriculture, craft and cottage industries. The major environmental challenges are flooding and water-logging in the river basin due to encroachment of natural drainage course, erosion of the top soil, encroachment of agricultural land, loss of flora and fauna due to non-synergetic development which can impact the wild habitat, fauna, vegetation and agriculture. Other areas of concern are noise and air pollution due to unplanned development of industry in urban cores and to increased traffic. Over-exploitation of ground water may lead to depletion of the ground water table. Providing safe drinking water sources for various types of housing is another challenge. In order to accommodate the estimated raise of population to 210.000 by 2025, an area of 560 hectares will be required.

Among the SSDA goals for sustainable development, we note: protecting the natural surroundings with regard to topography, geology and hydrology, protecting the multi-cropping land parcel, protecting the riverbank by a green belt plantation, allocating land for regional infrastructures like water treatment plants, sewerage treatment plants, solid waste treatment plant, introducing of a green belt to segregate the industrial zone from the densely inhabited residential areas, regulating the expansion of existing industry depending on its non-polluting nature and last but not least, guarantying protection to areas presenting heritage value by planning a delineated buffer zone with a carefully regulated development.



Anexe 1. Sriniketan Santiniketan Area with Visva-Bharati campus related facilities⁸

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⁸ <http://www.visvabharati.ac.in/CampusMap.html>