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THE CULTURAL DEVELOPMENT AND G.I.S APPLICABILITY; A CASE STUDY OF MAHA KUMBH MELA, ALLAHABAD 2013

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Short Profile

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ABSTRACT:

Culture means a "manner of life", 'method of belief' in everyday life; culture is the full area of variation of learned human conduct sequence. The word was first used in this style by the great English Anthropologist Edward B. Tylor in his book, Primitive Culture, printed in 1871. Tylor said that culture is "the complicated entire which comprise facts, trust, skill, rules, principles, traditions, and any other resources and practices developed by human as a person of society.". Culture is read as the manner, the designs, in which groups "feel" the non-analysed material of their companionship and ideal objective reality' (Clerke et al. 1976, p.10). Presenting on this, cultural' refers to the code with which meaning is built, carried, and interpretated.

KEYWORDS

Cultural Development , G.I.S Applicability , manner of life.

I.INTRODUCTION :

Culture refers to 'manner of life' which come to realise the human practices on a specific space and time context. Human beings are culturally influenced on an individual space like; they attached some belief, instinctiveness, and value system of a mind of action.

Karl O' Sauer explains 'forms of landscape' that presents the culture of human beings built a specific type of landscape, and its connected with a feeling of " attitude of being the property" that makes a space very unique in term of human feeling and attachment also relates with it. anciently human support their culture and spread out by the trading activities like in many of civilizations like Mesopotamia, Nile, and Harappa civilization and their development is also based on the regional development planning. These type of civilizations as known in the world are culturally dominated civilizations that promote their culture all around the world, and with the passing of time period the cultural regions were expanded and created a unique identity in term of their language, religions, and their cultural value systems.

In the present time the culture development is so advanced due to the use of G.I.S and Remote sensing technology, that makes a cultural region as a hub of both economic as well as social, political also, because the G.I.S and Remote Sensing Technology develop city plan and also help to predict futuristic scenario of the city, in term of city planning, Architectural planning, promote a cultural industry, and infrastructural development. For example in India many of places anciently relates with the particular type of culture, like Ujjain, Nashik, Allahabad, and Haridwar, Banaras and most of them relates with Hindu festivals and fairs, and one of the most famous festival of Hindu religion is a Kumbh Mela that makes a very unique identity in term of millions of people gathered together in a one point of time and space. Festivals can thus assist in making sense of where people are through an understanding of the stories and unseen aspects of life in communities. Crouch (1999:260) notes the importance of photography in studying social engagement in particular places as a means of making sense of space. Individual and collective connections with festivals as leisure experiences can demonstrate what Crouch (1999:257) describes as one way in which people practice space.

In generally a Kumbh Mela also create many types of hazards, and risk because a huge number of population gathered together and its highly difficult to handle without any use of technology, like stamped hazards one of the hazards that created by the mismanagement of the crowed population.

Williams (1965:57) suggests that by participating in festivals we find a particular sense of life, a particular community of experience that hardly needs explanation. Festivals, as planned social phenomena, permit encounters with authentic expressions of culture. They offer a sensual process that can be experienced (Getz, 2007:9).

II.A CASE STUDY OF MAHA KUMBH MELA IN ALLAHABAD:

Kumbh Mela is a mass Hindu pilgrim's journey of belief in which Hindus assemble to bath in a river with religious purpose. It is believe to be biggest free from disturbance gathering in the world with over 100 million people visiting throughout the course of Maha Kumbh Mela in 2013.It is held every third year at one of the four positions by rotation: Haridwar, Allahabad (Prayaga), Nashik and Ujjain. Thus the Kumbh Mela is held at each of these four positions every twelfth year. Ardha ("Half") Kumbh Mela is followed at only two positions, Haridwar and Allahabad, every sixth year. The rivers at these

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four places are: the Ganges (Ganga) at Haridwar, the meeting (Sangam) of the Ganges and the Yamuna and the mythical Saraswati at Allahabad, the Godawari at Nashik, and the Shipra at Ujjain.

The title Kumbh Mela comes from Hindi, and in the original Sanskrit and other Indian languages it is frequently known as Kumbha Mela. Kumbh means a pottery and Mela means fair in Sanskrit. The pilgrim's journey is held for about one and a half months at each of these four places where it is assumed in Hinduism that nectar falls vertically from the pot carried by gods after the sea was shaken. The celebration is known as the "world's biggest assemblage of spiritual pilgrims". There is no scientific way of knowing the number of pilgrims, and the approximates of the number of pilgrims bathing on the most sacred day may be different; approximately 80 million people attended on14 February 2013. The latest Kumbh Mela was held on 14 January 2013 at Allahabad. The day is clearly noticeably the second and the largest Pavitram Snanam (Holy bath) of this event, with 13 akharas taking to the Sangam.10 Feb 2013 was the biggest bathing day at the Maha Kumbh Mela and may be the largest human gathering on a single day. Over 30 million believers and devotees took holy dip on the day of Mauni Amavasya.

II.I. History

The first marked proof of the Kumbh Mela can be discovered in the reports of Chinese monk Xuanzang (alternately Hsuan Tsang) who came to see India in 629–645 CE, during the hold of royal office by King Harshavardhana. However, same kind of reports date back many centuries, where the river celebrations first started getting in order. According to medieval Hindu religious theory, its arise is discovered in one of the most popular medieval puranas, the Bhagavata Purana. The event of Samudra manthan (shaking of the ocean of milk), is referred briefly in the Bhagavata Purana, Vishnu Purana, the Mahabharata, and the Ramayana.

It describes that the Gods had lost their power by the offensive words of Durväsä Muni, and to reach it again, they spoke to Lord Brahma and Lord Shiva. They directed all the demigods to Lord Vishnu and after praying to Lord Vishnu, he instructed them to shake the fundamental ocean of milk to receive the delicious drink to live forever.

This made compulsory them to make a non-permanent harmony in feelings with their opposition, the Asuras, to work together with a bond of sharing the wealth equally thereafter. However, when the pot containing the divine drink appeared, a struggle started. For twelve days and twelve nights (equivalent to twelve human years) the Devas and Asuras fought in the sky for the pot of divine drink. It is believed that during the battle, Lord Vishnu flew away with the pot of vertically falling drops of amrita at four places: Allahabad (Prayag), Haridwar, Ujjain and Nashik.

Major Places:-

Kumbh Mela takes place every twelve years at one of four places: Allahabad, Haridwar, and Ujjain and Nashik. The Mela in its different forms alternates between Prayag, Nashik, Ujjain and Haridwar Every third year. The Ardha (half) Kumbh Mela is celebrated every six years at only two places, Haridwar and Prayag.

• Kumbh Mela: Held at all four places.

• Ardha Kumbh Mela: Held at Haridwar and Paryag, every 6 years.
• Purna Kumbh Mela: Held only at Prayag every 12 years.
• Maha Kumbh Mela: Held only at Prayag, every 144 years.

Table 1: Major Kumbh Mela's holded in the different time periods:

Year	Prayag	Nashik	Ujjain	Haridwar
1983	Ardha Kumbh			
1989	Purna Kumbh			
1991		Kumbh		
1992			Kumbh	Ardha kumbh
1995	Ardha Kumbh			
1998				Kumbh
2001	Purna Kumbh			
2003		Kumbh		
2004			Sihasth	Ardha Kumbh
2007	Ardha Kumbh			
2010				Kumbh
2013	Maha Kumbh			
2015		Kumbh		
2016			Sihasth	Ardha Kumbh
2019	Ardha Kumbh			

Source – http://www.kumbhmela.co.in/kumbhmela.html

III. STUDY AREA:

Allahabad is situated in the southern part of the state, at 25.450 N 81.840E, and stands at the meeting of the Ganga and Yamuna rivers. The annual mean temperature is 26.10C (79.0 0F); monthly mean temperatures are 18- 29 0C (64 – 84 0F). Allahabad practically contact with three seasons: hot dry summer, cool dry winter and warm humid monsoon. The highest monthly rainfall total, 296 mm (12 cm), occurs in August.

The Kumbh Mela takes place in an roughly 4x8km area on the flood plain of the Yamuna and Ganga river and on military land at the far side of the old Kila at Allahabad (generallyly called as parade

grounds). As per the investigation of Economic Times, calculated value of the Kumbh Mela 2013, was 15000crore rupees, and appropriate number of migratories is 10 crores. Mauni Amavasya traditionally evoked the biggest crowds at the fair, held here every 12 years. 10 Feb 2013 was the biggest bathing event at the Maha Kumbh Mela and certainly the biggest human meeting on one day. More than 30 million believers and religious persons took holy dip on the event of Mauni Amavasya. (Dhruv, 2013)

Prayag

The Triveni Sangam, or the intersection of Yamuna River and Ganges River and the mythical Sarasvati River, where believers of God perform rituals. When Jupiter enters Taurus and the sun enters Capricorn, Kumbh Mela is celebrated at Prayag; Each site's celebration dates are calculated in advance according to a better arrangement of zodiacal positions of Sun, Moon, and Jupiter.

Table 2: General Statics of Maha Kumbh Mela, 2013

Total population	10 Crore
Tourist	10 Lakh
Total budget	1,200 Crore
Revenue and taxes	12,000 Crore
Pontoon bridges	18
Toilets	35,000
Road development	156 km
Electric wires	800 km
Total area	50.83 sq km
Water pipeline	57 km
New police stations	30,000
CCTV cameras	120
New ration card issued	2,00,000
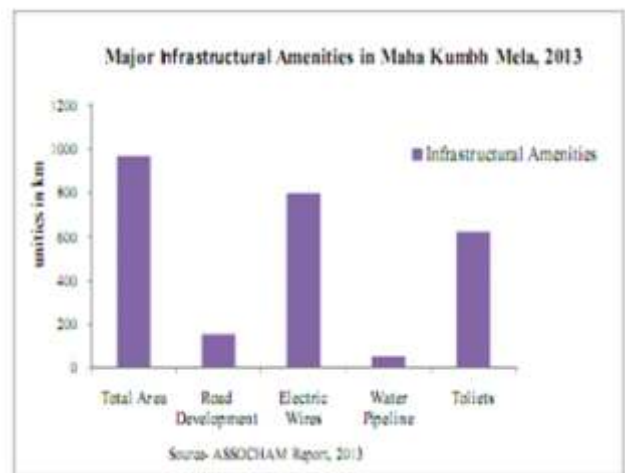
Figure1: Major Infrastructural Amenities in Kumbh Mela, 2013 Source – ASSOCHAM Report, 2013

As per (Saraswat, 2013), Hinduism has set up a Socio-Economic complex network by acknowledging different divine festivals for complete year. There was minimum 10 times greater income creation on money investment (preparations and non-permanent physical structure). The fair was separated into 14 sectors. Much of the year, "Kumbh City" is not a living part of Allahabad. Kumbh City was acting capital with inhabitants larger than much of permanent large towns in the world and many small nations too.
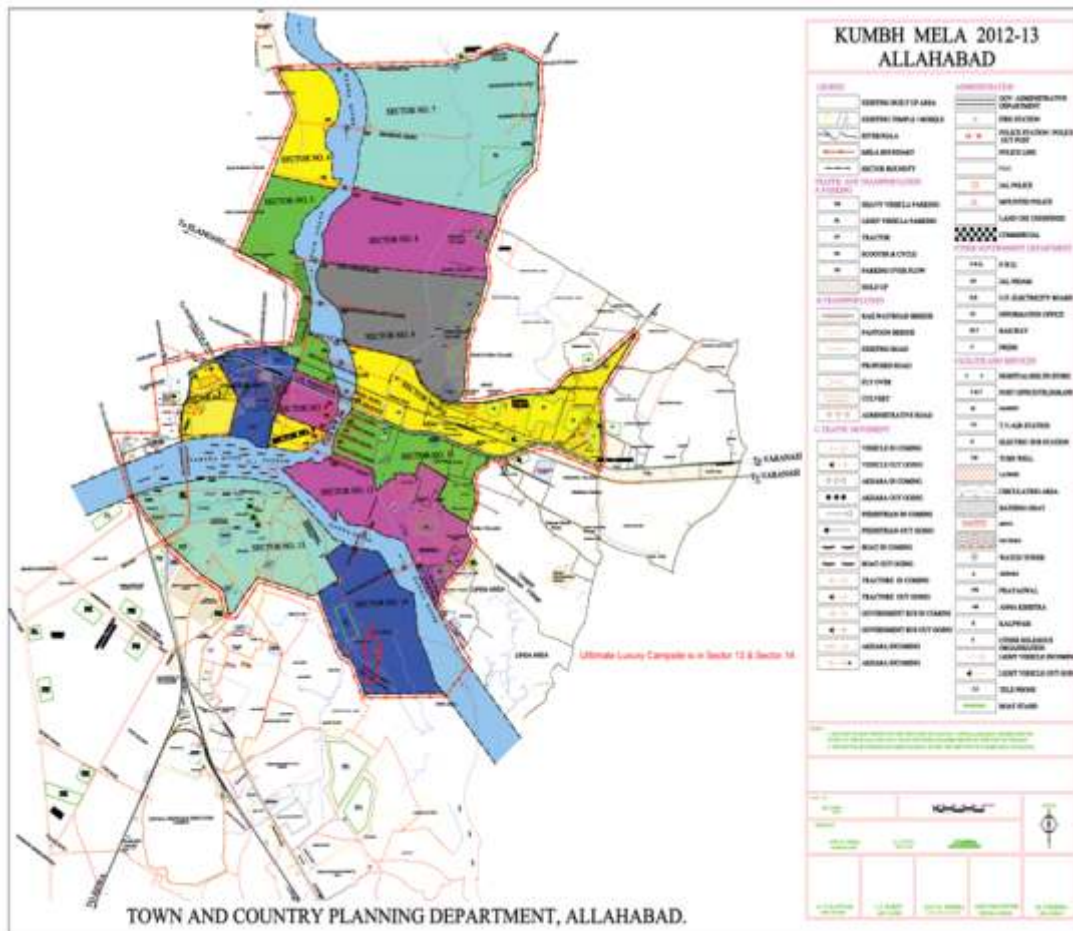
Figure 2: Map of Maha Kumbh Mela, 2012-2013

Source- Town and Country Planning Department, Allahabad, 2012-2013. / bhuvan.nrsc.gov.in

IV. The Best G.I.S decision support system of the Maha Kumbh Mela, 2013
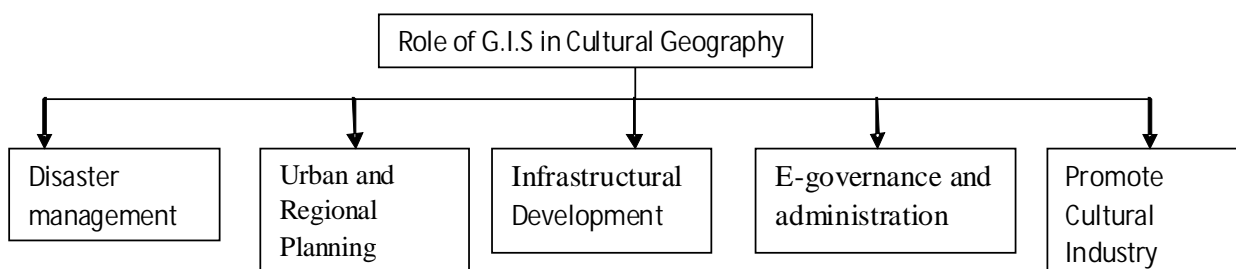
IV.I. Disaster management:

G.I.S and Remote Sensing technology make it possible to identify the main influencing forces behind the striking increases in different type of both physical and human connected movements, the

results of the high density places in Maha Kumbh Mela, and environmental degradation, traffic flow analysis. The hazard build up areas were situated and recognised through the database of satellite imaginary and air photos were taken. The specific location of each potential disaster site was recorded at the site and then came into a database and connected with G.I.S disaster layer. The magnitude was directed by various degrees of geologic, climatic, and human facts. The G.I.S and Remote Sensing also make it possible to implement various sets of planning steps during the Kumbh Mela like early warning alarm system, and recognition of high risk zone map that depends upon the density of pilgrims at a specific place.

IV.I.I. The stampede

According to starting reports of a large town growth authority, the sudden panicked rush broke out after a railing on a footbridge fall down at the Allahabad railway station. Eyewitnesses, however, said that the panicked rush was started after the railway police charged at the mass with thin wooden pieces in order to direct the huge movement at the station. It caused the death of 36 people, including 26 women, 9 men, and an eight year-old girl who died after waiting almost two hours for help. At least 39 people were injured in addition. In an unconnected event earlier that day, two people were killed in another panicked rush.

In the current study (Fig.2), an attempt is made to evaluate and to map the space of the pilgrim's population affected by the fire hazard occurrences at the time of Maha Kumbh Mela. Spatial distributions of pilgrims affected by the disaster are carried out through GIS. The study of the results drawn from the work revealed that GIS is an efficient tool for the preparation of various digital thematic layers and maps showing the spatial distribution of various elements of pilgrim affected by the fire hazard in Maha Kumbh Mela, and also help to reveal those areas which are highly affected and make some pre and post disaster measures.
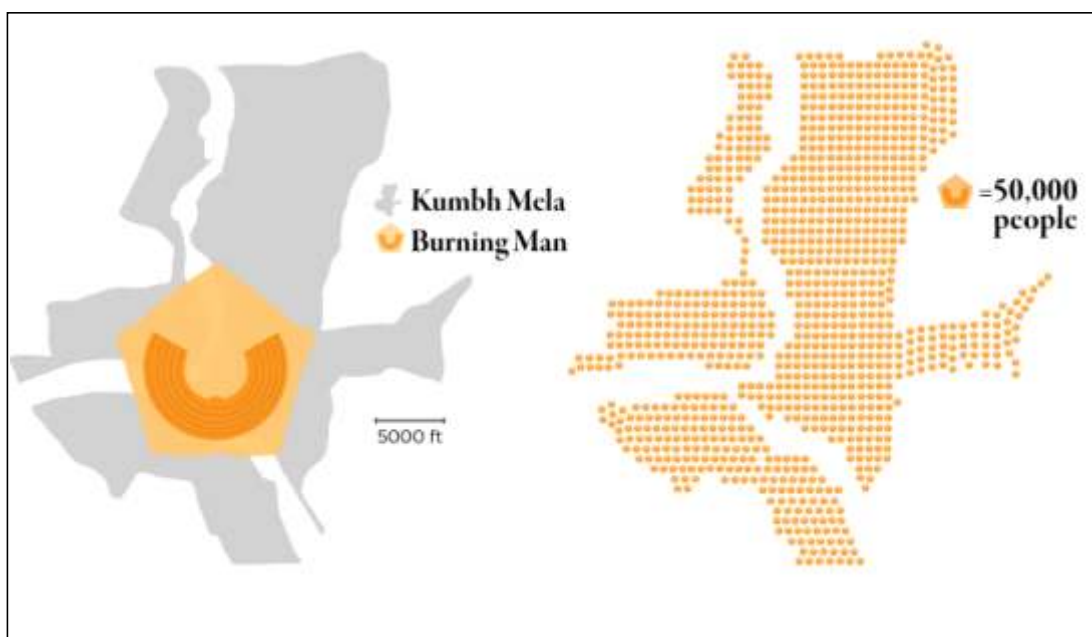

Figure 3: The Pilgrim's Population Affected by the Fire Hazard

Source- (Harvard Gazette, March 1, 2013)

IV.II. Urban and Regional Planning:

Kumbh Mela in the present times is emerging as an international fair, therefore a huge number of pilgrims population gathered at a specific place, and make a temporally city and that type of city construction was started only two months before the Kumbh Mela. The Maha Kumbh Mela 2013 was representing a very imaginative scenario of growth planning in terms of physical structural development, urban sprawl mapping, regional planning for air and water monitoring system, growth of road monitoring and management system etc. that help to implement the G.I.S based technology in the Maha Kumbh Mela. The part of decision support system DSS help highly to manage such type of socio- cultural issues.

The role of Decision support system in Maha Kumbh Mela:

• To build data base of many hotels for sale in the Maha Kumbh Mela.
• To build a data base site to build hotels in the Maha Kumbh Mala.
• To adapt the data base created as a DSS.

By using DSS, cultural industry in the Maha Kumbh Mela gets promoted through advertisements in the media. The DSS allow for a user- friendly approach to the both local and international level. Good information systems like DSS help to respond to the inquiries of the cultural traditional value systems. starting from the Kumbh Mela as a local level it helps in the growth of Crowd Management Centre, Special Armed Forces (SAF) and voluntary organizations (Community representatives), Crowd Management Strategies.

Sector	No. of Persons
Airlines & Airports	1.5 Lakhs
Hotel Industry	2.5 Lakhs
Tour Operators	45,000
Eco Tourism & Medical Tourism	50,000
Skilled & Unskilled Workforce for Construction/ Upgradation	85,000
Total	6.35 Lakhs

Table 3: Cultural Economy Prospects of Maha Kumbh Mela, 2013

Source- ASSOCHAM Report, 2013

IV.III. Infrastructural Development:

The Maha Kumbh Mela 2013 used high technology like in water pipeline, electricity towers, and road development and traffic flow analysis. The geo- informatics and modelling techniques were used

for the environmentally maintained at a certain level cultural growth. A number of problems that once seemed quite distant, like environmental degradation, natural resource management, rapid population growth, now pose a big threat to the area and have both present and long-term conclusions. A large number of modelling methods were identified and studied to support cultural development in ways that can also retain our natural resources.

A good sense of patron abilities and processing rates of all the pedestrian facilities and spaces are maintained. Short courts are in the form for ticket takers, stairs, doors, ramps and so on to make certain a regular movement of people. Since differences in the traffic features of pedestrian amenities prevail for e.g.   Stairs have less capacity than corridors or ramps– a three story ramps structure with sufficient barricading has been developed. Very clear and different entry and exit gates are maintained. At times when there is great rush, multi-entry points are ready for use.

Figure 4: Satellite Imageries of Different Time Periods.

(a) Satellite imageries taken by KONOS Satellite, 2000-2001

(b) Satellite imageries taken by Indian Remote Sensing Satellite, 2012- 2913

Source- bhuvan.nrsc.gov.in, images of Maha Kumbh Mela, 2013

The different type of satellite imageries conducted of Maha Kumbh Mela in 2000 – 2001 and 2012-2013, which help for the identification the land use changes due to the every year increase the population of pilgrims and also due the advancement of the cultural interest of people that encourage to both government and policy maker to promote this cultural event. Now the present days the population of visitors and pilgrims are growing rapidly like Country's population was 102.87 Crore in 2001, it is estimated to be 121.02 Crore in 2011 (+17.6%).The State population was 16.61 Crore in 2001 which has risen to 19.96 Crore in 2011 (+20%).Allahabad Nagar Nigam had 9.75 lakh population in 2001 which was 12.47 lakh in 2011 (+28%). and require planning and adequate servicing to avoid problems associated with unplanned and adhoc growth. The G.I.S and Remote Sensing technology help for to prepared and implemented development plans that also based upon consuming time and money. The G.I.S and Remote Sensing planning for cultural development is not only make rational and informed planning decisions that ultimately lead to plans that are better and implementable. National Remote Sensing Agency (NRSA) has only recently started providing IKONOS imagery and Indian remote sensing satellite imaginary; both are provided authentic, accurate information about the different time periods that help for predicting the future of that particular type of cultural heritage with preserves their traditional customs and value system.

IV.III. E-Governance and Administration:

G.I.S operations are diverse, however, E-governance based operations may comprise inquiring

the appropriation of land for different uses, planning for future of Kumbh Mela for distinct purposes, controlling cadastral facts for the purpose of property recognition, taxation and regulation, examining the cultural economy. With the access of data on the internet, internet GIS software is gaining popularity in many operational areas, including E-governances. Satellite imaging plays a big role in GIS to have up to date information on the earth's resources and cultural characteristics. This fact can be daily updated in a cost desired way using temporal satellite images. As a result of the capability of GIS, the government is now recognising the need of GIS scientists and managers at all levels.

Table 4: Temporal data of different Kumbh Mela's in Allahabad:-

Service/ Infrastructure	Unit	Kumbh-2001	Ardh Kumbh - 2007	Kumbh-2013
Area	Hectare	1495.31	1613.80	1936.56
Sectors	No.	11	11	14
Parking Lots	No.	35	44	99
Police Stations	No.	28	28	30
CCTV Camera	No.	0	19	85
Fire Station	No.	28	28	30
Length of roads laid	Km	96.40	116.50	156.20
Pontoon bridges	No.	13	14	18
KLs of drinking water supply	KLs	56000	76000	80000
Length of Pipelines	Km	340	458	550
Length of electricity lines	Km	565	665	770
No of Toilets	No.	20481	17000	35000*
No of hospitals	No.	31	31	38
Allotment of food grains	MT	26300	15000	31800
No of Pilgrims	Lac	36.64	46.78	90.00*
No of buses	No.	3604	3004	4505
No of trains	No.	600	N/A	750

The most significant operation of the G.I.S and Remote Sensing satellite imagery was the mapping of the development sprawl of the area under the Kumbh Mela (fig4) like it was in 2001 only 1495.31 sq. Km and in 2013 was 1936.56sq. Km, the data constituted that growth planning and E-technology improvement evokes the visitors like in Maha Kumbh Mela total numbers of tourist population was 10 Lakh and half of the tourist belong to the foreign countries. It gave a sign of the development management. It also became obvious for the first time that the town of Allahabad had doubled in size and that most of the growth was happening outside the municipal points. The physical structural services like Parking Lots, CCTV Camera, and Length of roads, No. of hospitals, and pipeline of drinking water also had already developed outside the municipal limits and   have increase many times more than the past Kumbh Mela's of Allahabad. This has intense impact on requirement of amenities. It is important to recognise an urbanizable zone and plan for structures in this area in the near future to solve problems of unplanned development.
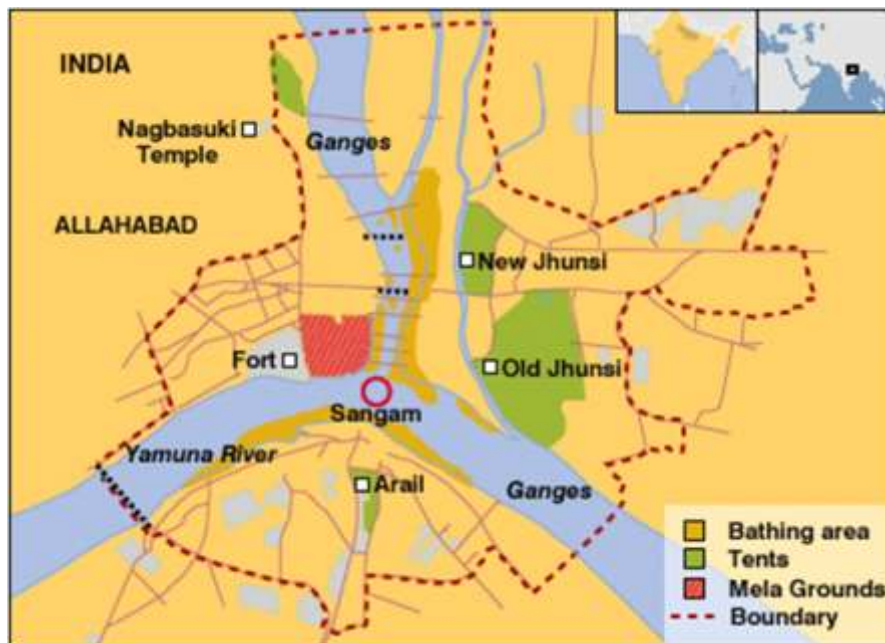
Figure 5: Categorizing of different areas of Maha Kumbh Mela, 2013

Source – http.news.bbc.co.uk,south asian hindu kumbh festivals

V.CONCLUSION:

It was found during the in depth examination of G.I.S and Remote Sensing applicability in the culture focused event of Maha Kumbh Mela in Allahabad that present how much G.I.S and Remote Sensing technology is important for the developmental planning and also give the idea for futuristic scenario that help management of the city in term of both Risk Assessment, preparedness and to stop crowd hazards in the spiritual site of Allahabad, so that the event and venue is well maintained. The use of imagery helped in understanding its location and relative place in the city, therefore we can say that on one hand G.I.S and remote sensing technology support sustainability and survivality of the future earth but on another hand in India G.I.S and remote sensing technology is not used for many other types of cultural events, that help to make sustainable cultural development planning at both local and national points. The GIS technology can further be used to do a large area survey whereby a complete emergency plan with the help of network examination can be made with the help of utility resource mapping.

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