

Assessing Urban Open spaces in Township Planning

Anmol Sharma
corresponding author
School of Planning & Architecture,
Poornima University, Jaipur

Neeti Khanna
Professor SPA,
School of Planning & Architecture,
Poornima University, Jaipur

Abstract:- Open spaces are defined as the areas that are not only green but accessible and open to the sky. The operation of public open spaces has long been regarded as an important part of domestic development in land use planning. This is not far from the prescriptions in the planning of townships which is unfortunately not being properly managed, implemented and maintained. Today open spaces in many townships lacks in usability and accessibility and do not meet the standards which make a space usable.

Looking at present scenario in Jaipur, Rajasthan Township Policy, 2010 is used for planned / integrated development in urban area. But due to lack of specification related to open spaces in township policy and provision of developing townships as small as less than 2 Ha, the kind of open spaces provided by the private developers are generally either leftover spaces after plotted development or sub divided in small parcels throughout the township, fulfilling only the wholesome quantity of open spaces as per the policy but fails in its quality and usability.

This research delves into evaluating the specification for open spaces in present township policy 2010, and recommending the gaps by relating it with URDPFI guidelines and township policies of other states to provide the missing standards that will check quality of open spaces provided. Also, looking at successful mechanisms used by other states for developing their urban areas, a proposal of TP Scheme at sector/neighborhood level is also proposed as an alternate to use of township policy, which provides infrastructure and facilities in an planned manner, increases the usage and values of land, and contains unorganized development through systematic land use planning.

Keywords:- Open spaces, Jaipur, Township Policy, usability, URDPFI guidelines, township planning, TP Scheme.

I. INTRODUCTION

The place where a man lives is the determinant of the quality of life and the determinant of the urban area development process. The open and recreational spaces are necessary public facility which complement and upgrade the residential function. They represent the physical and social component of satisfaction. Along the physical, environmental benefits that open spaces also have a positive effect on psychological and internal development of people. The provision of the Recreational facilities is an integral part of development plan to meet social cultural needs of the society. The Recreational provision are demanded to be accommodated at different stages i.e. Regional position, City Level, Sectoral Level and Neighborhood Level.

Open spaces: are defined as the areas that are not only green but accessible and open to the sky. Urban studies use a vast number of formal terms and delineations to relate to 'urban open and green spaces,' including green space, urban green, open space, public space, public amphitheaters and ground and so it's well established that the operation of public open spaces have long been regarded as an important part of domestic development in land use planning. This is not far from the prescriptions in the planning of townships which is unfortunately not being properly managed, implemented and maintained. Today open spaces in many townships developed by private developers lacks in usability and accessibility and do not meet the standards which make a space usable.

When we look at the successful attempts by other states like Gujrat, M.P., Mumbai etc., it is noted that Town Planning Scheme has become a better land management tool for developing urban areas. Here TPS are planned for the implementation of Development Plan (DP) and the major focus is on the land pooling and land re-adjustment for the purpose of providing planned infrastructure prior to any development happening at neighborhood level. Town Planning Schemes (TPS) is planned at micro level for approximate 100 to 150 hectares of land which are under the pressure of urban development and required priority attention.



Fig. 1: Conceptual Land Pooling and Re-plotting under a typical TP Scheme (Source: Compiled by Author)

Therefore, TPS allows to pool appropriate land from private landowners for public purposes, such as roads, open spaces, low-income housing, underlying utility infrastructure, and other health, education and community services in planned and organized manner.

II. NEED OF STUDY

Looking at present scenario in Jaipur, Rajasthan Township Policy, 2010 is used for planning integrated development in urban area. When looking at different townships in the city, townships developed by public sector has quality open space where as townships by private developers, with focus on profit making, the practice of prioritizing plotted development and then marking the leftover spaces as green/open spaces makes them less usable.



Fig 2: Jaipur location map,

Source: Author

This is due to lack of specification related to open spaces in township policy and provision of developing townships as small as less than 2 Ha, the kind of open spaces provided by the private developers are generally either leftover spaces after plotted development or sub divided in small parcels throughout the township, fulfills the wholesome quantity of open spaces as per the policy but fails in its quality and usability.

Hence, these townships are limited to work - home relationship and lack recreational activities and therefore, there is a need to focus on providing dedicated public spaces for population to interact in such cities/towns.

This research delves into evaluating the specification for open spaces in present township policy 2010, and recommending the gaps by relating it with URDPFI guidelines and township policies of other states to provide the missing standards that will check quality of open spaces

provided. Also, looking at successful mechanisms used by other states for developing their urban areas, a proposal of TP Scheme at sector/neighborhood level is also proposed as an alternate to township policy used in Rajasthan, which provides infrastructure and public facilities in an organized manner, increases the usage and values of land, and contains haphazard development through systematic land use planning.

III. RESEARCH QUESTION

Does the open space achieved under Rajasthan township policy meet the minimum quality standards and can TP scheme act as an alternate to Township policy in planning urban areas/extensions with respect to open spaces.

IV. METHODOLOGY

Different townships planned under Rajasthan Township policy are studied in three categories:

- Townships with area less than 2 Ha
- Townships with area 2 to 10 Ha
- Townships with area more than 10 Ha

The open spaces (parks & facilities in < 2Ha and parks in >2Ha townships) are examined with reference to URDPFI guidelines and other states township policies to make adequate recommendation in the exiting township policy.

Successful case studies of other states planning tools are studied in developing urban areas with standardised open spaces at neighbourhood level.

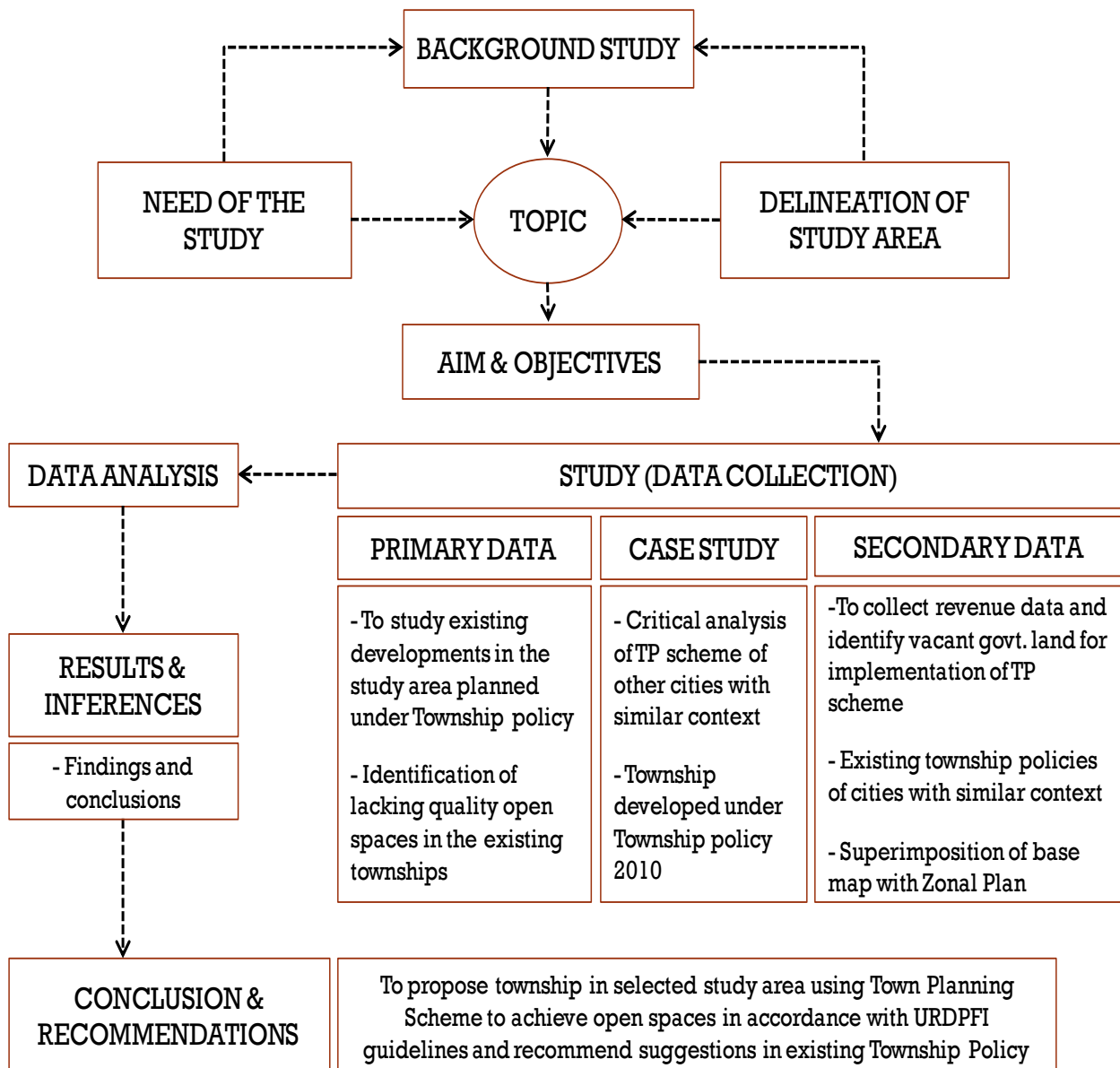


Fig. 3: Methodology framework (Source: Author)

V. SITE

Jagatpura is a well known residential-cum-commercial area situated in the south-eastern part of Jaipur. Proximity to prime employment hub of Malviya Nagar Industrial Area and Sitapura Industrial Area coupled with smooth connectivity to Jaipur International Airport are the key growth drivers of Jagatpura. It is bounded by various

localities like Chatarpura, Pratap Nagar, Durgapura, Dantli, and Sitapura.

For assessing the open spaces in townships planned under Township Policy, the study area is selected in sector 30, Jaipur (Fig 5). It is lined with Jagatpura Railway line in north, mahal road on west, Goner road on south and Mahavir Marg on east.



Fig. 4: Jagatpura location map (Source: Google maps)

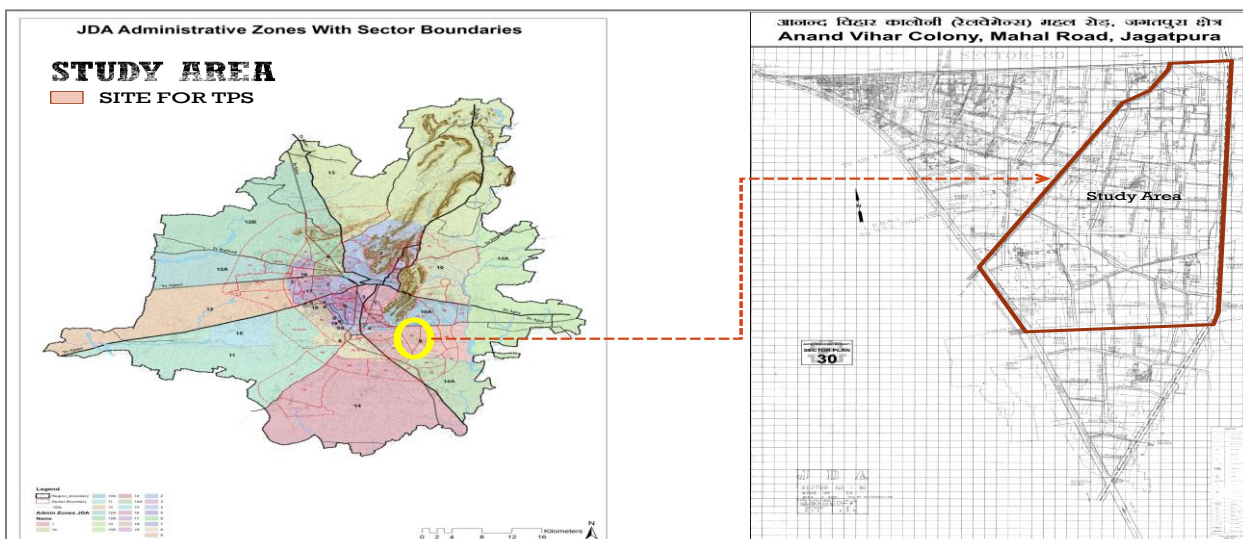


Fig. 5: Study area demarcation in sector plan, Jaipur (Source: JDA)

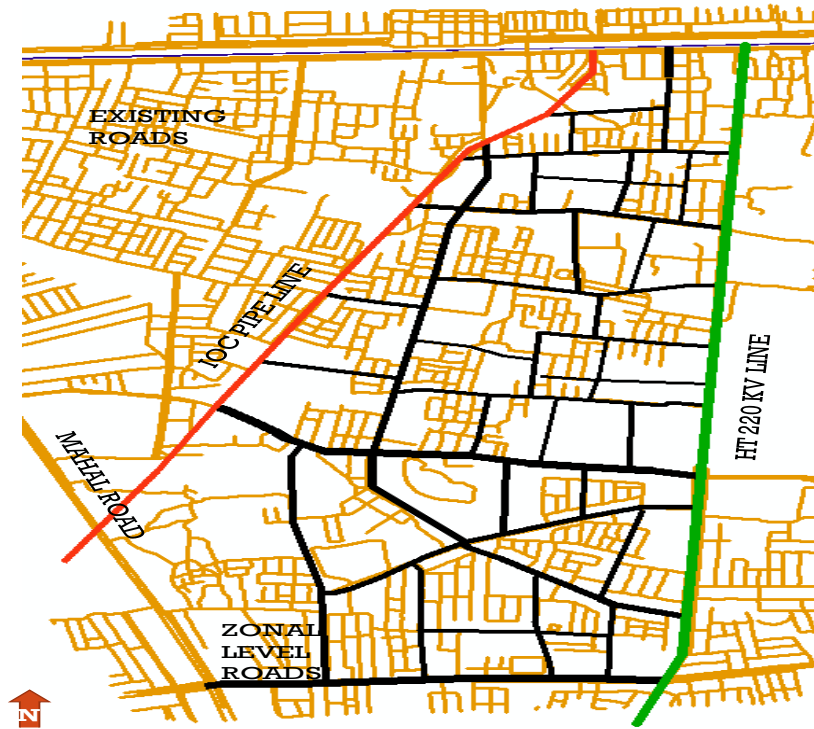


Fig. 6: Study area Road Network

VI. CRITERIA OF SELECTION

Jagatpura is one of the urban extensions of Jaipur, that is popular for the recent development that has nearly transformed the whole area encouraging the demand for residential space and is dotted with a plethora of townships built by some famed developers like Ashiana Housing and Manglam BDL, Bhavyaa Green Builders, Somya BuildCon, Mahima Group Builders, and Unique Dream Builders. which is located on Mahal Road, Jagatpura.

Looking at the spatial growth trend of the area, it is clearly visible that it has been developed recently in past 10-15 years (Fig 7), allowing one to assess the kind of open spaces provided by private developers following the specification provided in Rajasthan township policy.

The area selected for site study is marked on the bases of maximum concentration of townships developed by private developers.

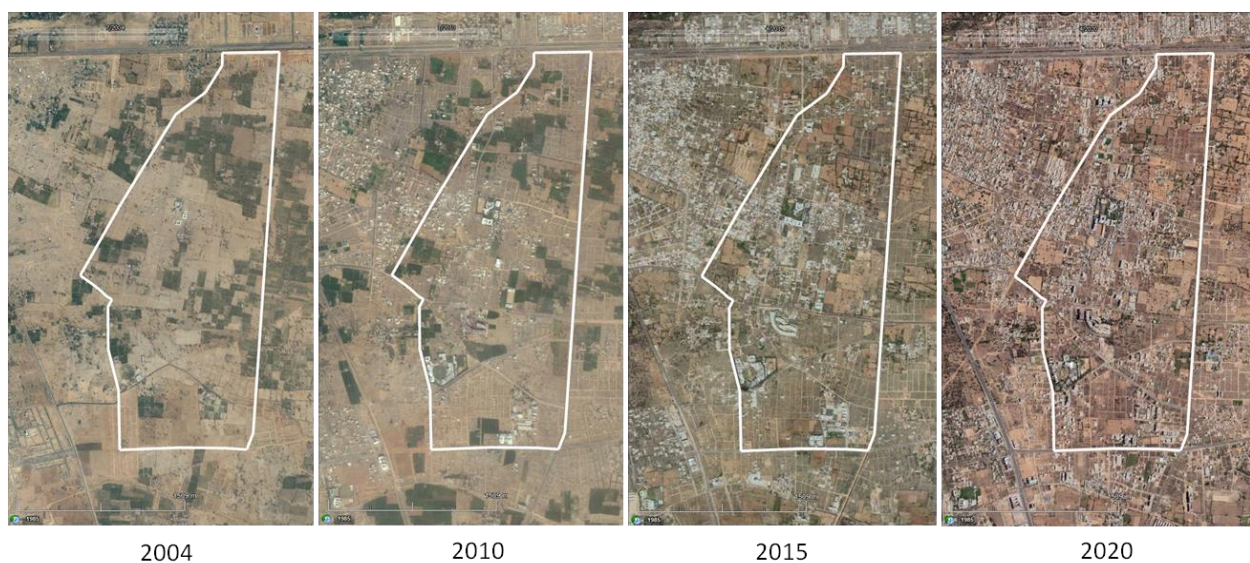


Fig. 7: Spatial growth trend in study area in last 15 yrs by private developers (Source: Author)

URDPFI guidelines for Open spaces

The open spaces can include the following three categories:

- a) Recreational space
- b) Organized green
- c) Other common open spaces (such as vacant lands/ open spaces including flood plains, forest cover etc. in plain areas.

Considering open spaces, provision be 10-12 sqm/person may be desirable.

Table 1: 8.52: Hierarchy of Organised Green

S. No.	Planning Unit	Number of Organised green spaces
1	Housing Cluster	3 - 4 local parks and playgrounds
2	Neighbourhood	3 - 4 local parks and playgrounds
3	Community	2-3 community level park and open space
4	District/ Zone	1 district level park and sports centre, maidan
5	Sub city centre	1 city level park, sports complex, botanical / zoological garden, maidan

Source: UDPI Guidelines, 1996.

Other Controls (NBC):

- a) Open spaces/ maidans should be spatially distributed and multiple function in time to be promoted
- b) In any layout or sub-division of land measuring 0.3 Ha or more in residential and commercial zones, the community open space shall be reserved for recreational purposes which shall as far as possible be provided in one place.
 - a. The min recreational space provided shall be 450 sqm.
 - b. The minimum average dimension of the recreational space shall not be less than 7.5 m and the length shall not exceed 2.5 times the average width.
- c) Each recreational area and the structure on it shall have an independent means of access.
- d) Any building line to be at least 3 m away from the boundary of recreational open space.

Notes:

- a) Green areas and other associated non-economic activities to be preferably proposed on Government reserved land.
- b) In case the open/green spaces which do not generate income are proposed on privately owned land, the local authority preparing the plan shall part with a fair compensation as per 'The Right to Fair Compensation and Transparency in LARR Act, 2013' to the land owner.

Table 2: Norms for Organised Green for Plain Areas

S. No.	Category	Population served per unit	Area Requirement (Ha)
1.	Housing Area Park	5000	0.50
2.	Neighbourhood park	15000	1.00
3.	Community park	1 lakh	5.00
4.	District park	5 lakh	25.00
5.	Sub city park	10 lakh	100.00

Source: MPD, 2021.

For the research, open space will include playgrounds, parks & Gardens and multi-open space (Maidan).

VII. COMPARING TOWNSHIPS POLICY OF DIFFERENT STATES

In order to promote planned / integrated development of various towns by providing the basic infrastructure facilities and to safeguard the interest of the public at large by ensuring availability of residential plots/houses at affordable prices, many states have developed township policy in which the land is pooled and its development is

financed with the involvement of land-owners without compulsorily acquiring land. This land assembly mechanism helps to provide plots for basic amenities in an organized layout from the original haphazard arrangement.

For the study, township policy of Gujrat, Rajasthan and Uttar Pradesh are studies to drive relevant inferences for green spaces.

State	Act	Min Area	Open Space %	Facilities %
Rajasthan	Rajasthan Municipal Act, 2009	< 2 Ha	5 %	
		2 Ha	5%	10%
		10 Ha	10%	10%
Gujrat	Gujarat Town Planning & Urban Development Act 1976.	40 Ha	-10% of the developed land area - 5% for Parks and Garden, catering to neighborhood with public access. - Such plots shall have minimum area not be less than 3000 sqmts	5%
Uttar Pradesh	Uttar Pradesh Urban Planning and Development Act- 1973	10 Ha	15%	10%

Table 3: Comparison Table of Township Polices of different states, (Source: Author)

VIII. CASE STUDIES

Different townships planned under Rajasthan Township policy are studied in three categories below

- Townships with area less than 2 Ha (Table 1)
- Townships with area 2 to 10 Ha (Table 2)
- Townships with area more than 10 Ha (Table 3)

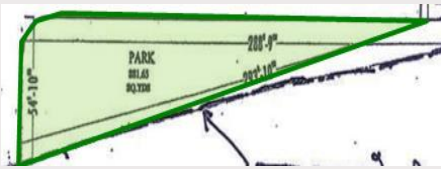
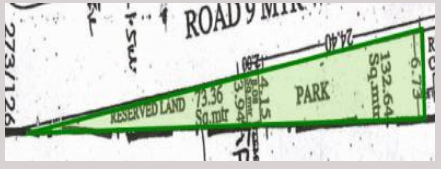
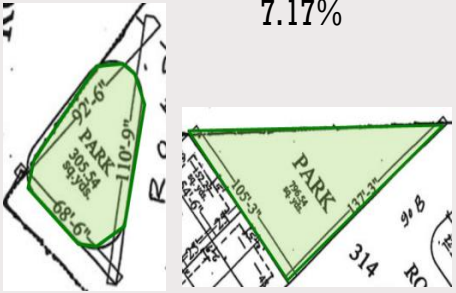
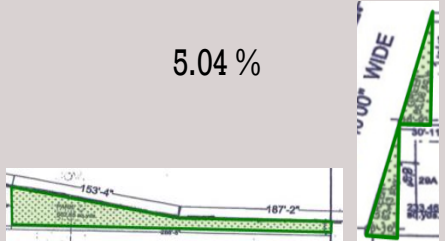
Township Name	Township Area	Green Area (%)	Inference
Less than 2 Ha			
Hare Krishna Regency	1.74 Ha	5.08% 	- Small size township result in proportionately small size open spaces
Alpha Nagar	0.26 Ha	5.00% 	- Irregular form of open spaces reduce usable area - Further division of this small portion of open space lead to reduction in physical quality of open spaces in accordance with URDPFI norms
Laxmi Narain Nagar	1.54 Ha	7.17% 	- Liner thin strips as open space may result in achieving quantity but lack in physical usability and accessibility of these spaces
Mahima Valentina	2.75 Ha	5.04% 	

Table 4: Result from Case study of townships with area less than 2 Ha, Source: Author

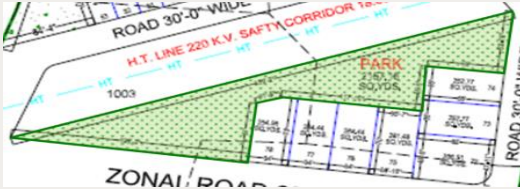


Township Name	Total Area	Green Area (%)	Inferences
2 Ha to 10 Ha			
Gokul Aangan	3.98 Ha	5.00% 	- Irregular form of open spaces reduce usable area - As the size of the township increases , the quality of open spaces also increases
Manglam's Dwarka	5.46 Ha	5.81% 	- Liner thin strips as open space may result in achieving quantity but lack in physical usability and accessibility of these spaces
Vaishali Estate	7.9 Ha	5.00% 	

Table 5: Result from Case study of townships with area 2 to 10 Ha, Source: Author

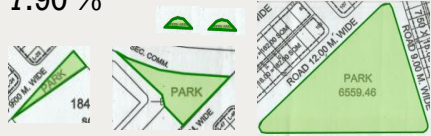


Township Name	Total Area	Green Area (%)	Inferences
More than 10 Ha			
Shiv Enclave	12.08 Ha	7.90 % 	- Irregular form of open spaces reduce usable area - Division of open space lead to reduction in physical quality of open spaces in accordance with URDPFI norms
Manglam's Park View	12.87 Ha	7.5% 	- Liner thin strips lack in physical usability of these spaces
Vatika InfoTech City	282 Ha		-As the size of the township increases , the quality of open spaces also increases

Table 6: Result from Case study of townships with area more than 10 Ha, Source: Author

Evaluating planning under Rajasthan Township policy, it will be vital to study planning mechanism used by other states for planned and organised development of urban area. TP Scheme used in Gujrat is one of the best example to planned and implement the development of it urban areas and its extension in planned manner.

CASE STUDY: TP Scheme – Prahladnagar, Ahmedabad

CASE STUDY: NIDHRAD - GODHAVI – CHEKHLA

CASE STUDY: TP Scheme – Gandhinagar, Gujrat

TPS Name	TPS Area	Green Area (%)	Inferences
Prahlad Nagar	162 Ha	4.66 %	-Green area achieved in regular shape & size and in accordance with URDPFI guidelines - Reconstitution of plots includes mainly regularizing shape of irregular land plot, hence most landowners receive max. area of original plot - Layout Plan provides proper hierarchy of road and street pattern - Distribution of public space and community facilities as per Development Plan norms.
Nidhrad – Godhavi - Chekhla	180.1 Ha	5.99%	
Gandhinagar Sec-21	75 Ha	7.17%	

Table 7: TP Scheme case study evaluation (Source: Author)

IX. ANALYSIS

For analysis purpose, in accordance to URDPFI standards for open spaces and township policies of other states, green spaces in above case studies are assessed under 3 categories, i.e., “inadequate”, “adequate but insignificant” and “adequate and significant” on the bases on its quality and quantity.

Quantity: To be assessed on the basis of township policy specification for open spaces i.e., township of area < 2 Ha
 - open spaces & facilities : 5%
 township of area 2-10 Ha - open spaces : 5%
 township of area more >10 Ha- open spaces : 10%

Quality: To assess quality, physical dimensions, i.e, size and minimum area as per the URDPFI guidelines will be used i.e.

Size - The minimum average dimension of the open space shall not be less than 7.5 m

Area- The min open space provided shall not be less than 450 sqm

For assessing open spaces in townships studied, a spaces will be categorised as

- Inadequate: if it fails to fulfil the quantity and/or quality aspect as mentioned above
- Adequate but insignificant: Open spaces that fulfil quantity aspect but fails in quality aspect
- Significant and Adequate: Open spaces in township meeting both quantity and quality measure.

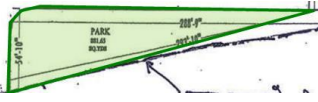
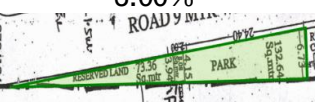

Township Name	Township Area	Green Area (%)	Assessment
Less than 2 Ha			
Hare Krishna Regency	1.74 Ha	5.08% 	Adequate but insignificant
Alpha Nagar	0.26 Ha	5.00% 	Inadequate
Laxmi Narain Nagar	1.54 Ha	7.17% 	Adequate but insignificant

Table 8: Case study assessment of townships less than 2Ha (Source: Author)

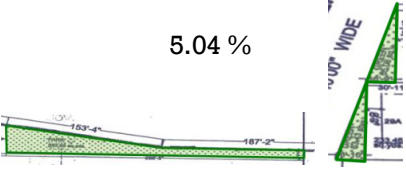
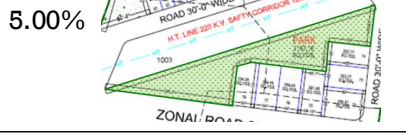


Township Name	Total Area	Green Area (%)	Assessment
2 Ha to 10 Ha			
Mahima Valentina	2.75 Ha	5.04 % 	Adequate but insignificant
Gokul Aangan	3.98 Ha	5.00% 	Adequate but insignificant
Manglam's Dwarka	5.46 Ha	5.81% 	Adequate and significant
Vaishali Estate	7.9 Ha	5.00% 	Adequate but insignificant

Table 9: Case study assessment of townships 2-10 Ha (Source: Author)

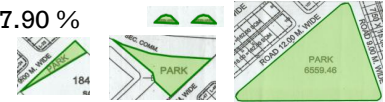
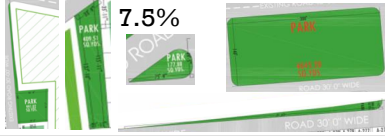

Township Name	Total Area	Green Area (%)	Assessment
More than 10 Ha			
Shiv Enclave	12.08 Ha	7.90 % 	Adequate but insignificant
Manglam's Park View	12.87 Ha	7.5% 	Adequate but insignificant
Vatika InfoTech City	282 Ha		Adequate and significant

Table 10: Case study assessment of townships more than 10 Ha

(Source: Author)

X. DISCUSSION

From above assessment it can be inferred that in townships less than 10 ha, the green spaces full fill the quantitative requirements as per the township policies but in terms of qualitative requirements, it is seen that most township’s green spaces are either leftover spaces after planning plotted development and other infrastructure requirements or are sub divided in small parcels throughout the township. These small pockets or liner strips marked under open spaces lack the minimum average dimensions for a recreation space as per URDPFI guidelines reducing their physical functionality.

Unlike the above, townships with area 10-20 Ha though has quality open spaces, but they fail to provide the minimum green area percentage as per the township policy. It is only in large townships of area greater than 100 Ha, the green spaces meet both quantity part as per township policy and are also more regular in shape with better accessibility and usability for recreation.

Studying the case of TP Scheme used in Gujrat, also provides an alternate to using township policy for planning urban development as it enables balanced urban structure; which is flexible in terms of scale, size and process.

XI. CONCLUSION & RECOMMENDATION

The difficulties identified with current open space policy are a lack of clear standards for open space to direct development of these spaces. With these general conclusions recommendations can be made for improving the planning and development of urban open spaces as follows-

Standards and specification for open space to maintain their quality by using URDPFI guidelines for open spaces-

- Minimum size of a township to be restricted at not less than 10 Ha, to check quality of space division among different land use
- Physical consideration for open spaces to be specified along with percentage specification, i.e.,
 - The min open space provided shall not be less than 450 sqm.
 - The min average dimension of the open spaces shall not be less than 7.5 m
- The provision shall be made to provide open spaces in accordance with population density of the township along with its area
- Any open space less than the minimum recreation space shall not be considered under park/open/green area.

Along with recommendation in existing township policy, in vision with the successful case studies of Gujrat, TP Scheme can also be developed as an alternate to township policy to carry out urban area development by providing regular plots in shape and size for different public facilities and other land uses. This can be done by pooling of land for development in accordance with Rajasthan land pooling policy and using reconstitution mechanism of TPS for land development to provide

- Regular size plots
- Proper distribution of land for facilities and open spaces
- Provide proper accessible public open spaces
- Allow proper hierarchy in roads & open spaces checking proper access and security of users.

REFERENCES

- [1.] URDPFI-2015, Vol 1, MoUD, GoI
- [2.] Urban Green Guidelines, 2014
- [3.] Assessing the use and adequacy of public open spaces in old port harcourt township_Article in International Journal of Scientific and Engineering Research · June 2015
- [4.] Gujrat Township Policy
- [5.] Rajasthan Township Policy-2010
- [6.] <https://jda.urban.rajasthan.gov.in/content/raj/udh/jda---jaipur/en/citizen-service/scheme-and-allottees.html>
- [7.] <http://service.jaipurjda.org/PropertyERP/Summery/Schemefilter?DeveloperType=2&Zone=9&SchemeStatus=1&IsEkalPatta=false>
- [8.] <http://service.jaipurjda.org/PropertyERP/OTLdeposit/Scheme/9>
- [9.] <https://www.auda.org.in/TPScheme.aspx>
- [10.] Journal of ITPI, Volume : 16, Number : 4, October - December, 2019
- [11.] Town Planning and Valuation Department, Government of Gujarat
- [12.] <https://bhunaksha.raj.nic.in>