

# An impact on agriculture by smart cities of ponneri thaluk, Tamil Nadu

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## ABSTRACT

Urban Agriculture may not be the most impressive sub-segment in the Smart Cities sector. Developing farming limit inside or near urban territories can possibly diminish sustenance transportation costs and natural effects, give monetary advancement open doors, and lessen differences in stimulating access that have added to pandemic rates of weight and diabetes particularly among low-wage populaces. This will bring the change in aspects of modern agriculture to the peri-urban areas. Creating farming limit inside or near urban zones can possibly decrease nourishment transportation costs and natural effects, give financial advancement open doors, and lessen aberrations in empowering access that have added to scourge rates of heftiness and diabetes particularly among low-wage populaces. Regardless of these points of interest, there are difficulties to setting up the suitability of urban creation when contrasted with more customary horticultural works on, including versatility, vitality productivity, and work costs.

While urban horticulture has been effective at a nearby scale, it has yet to financially challenge existing modern nourishment frameworks. In any case, endeavours to expand the scale and financial practicality of urban cultivating are in progress. City Governments ought to elevate measures to keep away from urban horticulture tainting and one of their objectives must incorporate the era of green occupations and the circulation of natural sustenance to neighbourhood customers.

**KEY WORDS:** Agriculture, peri-urban areas, Sustainability, planning.

## 1. INTRODUCTION

The world populace development in the coming decades will be in the urban communities of creating nations. These urban communities will thusly represent a large portion of the expanded interest for sustenance. Urban populaces, be that as it may, are buyers as well as makers of sustenance, particularly high-esteem perishable agrarian produce. The developing urban populaces and their interest for sustenance and other agrarian items will likewise impactsly affect land use in peri-urban territories and close-by rustic regions. The present addendum looks at the effects of urbanization on economical agribusiness, including the issues of urban horticulture, the effect of urban communities on peri-urban ranges and provincial urban linkages

A majority of the population in Ponneri and Tamilnadu have lived in cities since the early twentieth century. cities are growing at an average rate of 3 per cent per year, compared to overall population growth of 1.4 per cent. By 2025, approximately 60 per cent of the world's population will live in urban areas.

In numbers, this translates into 8.8 lakhs people living in urban areas by 2025, an increase of 3,85,620 from 2011. That increase is almost all accounted for by developing countries, where an increase of over 5 lakh people is estimated Interestingly, the world's rustic populace is anticipated to increment by just 190 million. The rustic populace in creating nations is anticipated to increment by 270 million, while that of created nations is to decrease by 80 million.

Urbanization additionally implies changes in general utilization designs due both to expanding livelihoods (for those that have employments) and to urban ways of life. Generally more meat, dairy items, wheat and new leafy foods are devoured in urban focuses, and there is an expanding interest for astounding, prepared and accommodation sustenance's. The urban populace living in destitution has quickly expanded amid the previous two decades, alongside fast urbanization. The extra 600 million individuals who might be added to urban populaces in creating nations amid the 1990s would build the weight ashore, lodging, water and sanitation, sustenance supply and circulation frameworks, and instruction and wellbeing administrations, and would add to the urban populace living in destitution.

**Urban agriculture:** Urban agriculture provides a critical livelihood and source of food for many urban dwellers, particularly low-income households in India.

Urban horticulture, generally, is a casual movement rehearsed by poor and landless city tenants. It more often than not alludes to little territories, for example, empty plots, gardens, borderlines, galleries and holders inside the city utilized for developing yields and raising little domesticated animals or milk dairy animals, for family utilization or available to be purchased in neighborhood markets. Urban horticulture gives non-market access to nourishment for low-pay families, furthermore makes farming occupations and salaries. Especially in Ponneri, urban farming has assumed a critical part in peopling adapt to financial emergency. Indeed, even in high-pay nations, urban ranchers add to supplies of new and natural items, and urban agribusiness keeps up green space and gives recreation and touring capacities. In spots where provincial transportation base is poor or where horticultural business sector frameworks are deficient, both urban and peri-urban agribusiness fill basic nourishment supply holes.

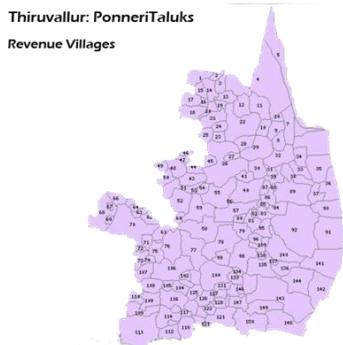
There are, notwithstanding, likewise negative parts of urban horticulture. Farming regularly makes expansive requests on restricted water assets, which have all the more financially profitable uses in urban territories, and wrong horticultural and aquacultural practices posture ecological and wellbeing dangers, including upsetting scents and commotion. Serious cultivating may likewise lessen natural limit for contamination ingestion. These issues are ordinarily exacerbated by an absence of fitting city arranging and direction of urban farming.

**Area profile:** Ponneri is located at 13.32°N 80.2°E. It has an average elevation of 16 metres (52 feet). Ponneri is a metropolis located at North Chennai in Tiruvallur district within the Indian state of Tamil Nadu. It's placed in Ponneri taluk. The neighbourhood is served by means of the Ponneri railway station of the Chennai Suburban Railway network. Ponneri is selected among a hundred cities for wise city development.

Moving fast on the avenue to setting up the proposed shrewd metropolis at Ponneri, the Japan international Cooperation Company has ready a grasp plan that envisages progress of the urban, manufacturing node near Chennai spread across 22,000 acres of land at a total price of Rs 32,713 crore.

The proposed city is expected to have a population of four lakhs and a working populace of 8.88 lakh by 2025, as per the grasp plan document. It could be developed in three phases. The primary section will involve 4,448 acres of land to be had with government agencies even as the 2d section would involve 2,718 acres of current port discipline. The 1/3 section will involve 5,667 acres of land with present progress round coastal regulation zone

**What are peri urban areas:** Peri-urban areas will lies between urban and rural areas .They are commonly a mixture of farming lands, older settlements and surrounded with new development's, modern territories and ghettos .most part of the peri-urban ranges are gradually advance into completely urban regions because of the offices. They are outside the obligation of the city improvement authorities. There are a few spots where less accessibility of characteristic assets then people groups need. In such places the general population will probably change over into the new openings for work. The neighborhood powers of such places are deficient in the assets and to deal with their spontaneous development; on the other hand urban governments are not quick to take them on.



**Figure.1. Revenue Villages of Ponneri Taluks**

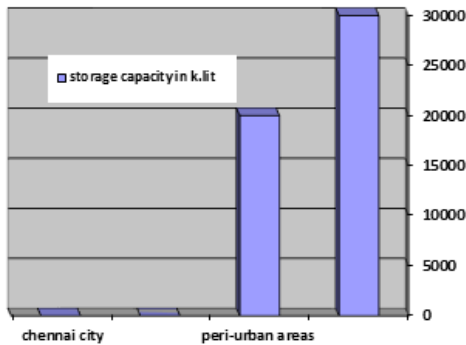
**Area use in peri-urban zones:** Urbanization impactsly influences peri-urban zones, including aground use, the structure of family farms, the economies of residence families, era and publicizing. Agriculturists adjust resource use practices to extending people densities and business segment open entryways. A great part of the time, urbanization at first prompts resource defilement in peri-urban zones on account of extending weight shoreward resources. Regardless, declining effectiveness routinely influences agriculturists to move to sorts of territory use that are both more genuine and more functional. Such sensible acceleration has been found in areas where urban conditions have existed over some time, for example around Chennai city. Peri-urban progression generally fuses monetary expanding and expansion of agricultural after creation operations.

Four noteworthy issues identifying with reasonable advancement of agribusiness in peri-urban zones require consideration:

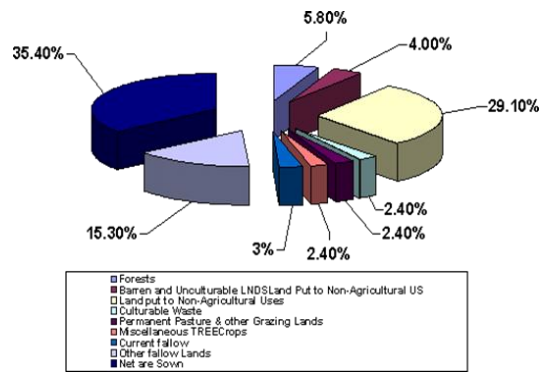
- (a) Conversion of area from agrarian to non-farming uses ought to be figured out how to advance the change of area with peripheral rural profitability and save the best horticultural area for agribusiness, checking the need to oversee water use for farming and contending employments;
- (b) Advisory and bolster administrations ought to be given to bolster a movement to feasible escalated creation for urban markets, and to create horticultural handling endeavors and other non-ranch occupation open doors;
- (c) Critical backwoods zones around urban areas ought to be ensured and feasible escalation of farming and agro-ranger service ought to be elevated to take care of urban demand for timberland items and substitutes and diminish weight on woods assets. This may require the assibilate of the monetary, social and natural expenses and advantages of upward and outward development of the city;

(d) Changes in plant and creature species structure connected with changing area utilize and strengthened development in urban and peri-urban zones should be assessed with respect to biodiversity. In the forest zone near the ponneri the animal life and plant life will be effected to the change in environment and ecology.

**Rural-urban linkages for agricultural development:**



**Figure.2. Water Storage Capacity**



**Figure.3. Land Use Distribution**

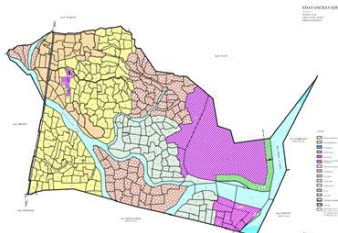
Urbanization majorly affects provincial agribusiness, including on what is developed, how it is developed and the maintainability of generation frameworks. Provincial urban linkages rely on upon recorded, political, monetary, social and natural variables, and on the full scale level strategy changes being executed in numerous nations.

No less than six country urban linkages require consideration in anticipating reasonable rural advancement. One is the expanded rivalry for common assets because of developing urban interest and the subsequent asset corruption, even in ranges a long way from urban focuses. Promoting open doors in urban focuses are adding to an extension of the range under development in country zones. Since area assets are restricted, increments in sustenance supplies progressively require efficiency development through the escalation of development. Both the augmentation of development into minor terrains and unseemly increase practices are adding to asset corruption. A second linkage is the part of urbanization as an impetus for the comerclizing the horticulture which extends the use of manures and diverse inputs, progresses natural non-farm endeavors, and developments urban-common trade and distinctive exchanges. Commercialization may moreover have basic sexual introduction results following the commercialization of ordinary staples has been connected in various districts with the extending consideration of men in sustenance crop creation, especially where there has been profitability improving innovative change. This has diminished the occupations of ladies from offering surpluses from subsistence time. Then again, developing commercialization is for the most part connected with developing agro-dealing with, which gives new pay chances to ladies. The concordance between relocation from customary parts and new open doors understands who wins and who loses from common progress.

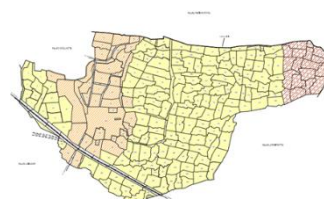
A third linkage is interest impelled ware shifts underway. These product shifts, which lead to territorial and sub-regional specialization, could be among the most essential components influencing the supportability of horticulture in the coming decades. A fourth linkage is the effect of urbanization on country work supply. Urban industrialization and rustic urban movement may raise rural wages, expanding the interest for new rural advances. Country urban movement has prompted a "young channel" in numerous rustic regions, with effects on agrarian work profitability and provincial social life.

A fifth linkage is the nourishment transportation, appropriation and advertising frameworks for getting sustenance to urban purchasers. Wholesale and retail markets are frequently not very much sorted out or oversaw, and showcase offices are old, ineffectively kept up and too little to address the issues of the developing populace. Absence of productive and solid dispersion channels forces costs on urban shoppers. There are likewise expenses to the earth since more assets are utilized for generation to compensate for waste and misfortunes in appropriation frameworks.

**Land use of ponneri taluk:** The land usage in ponneri taluk was taken from the CMDA. Tiruvallur district land use is as follows.



**Figure.4. Land Use Pattern**

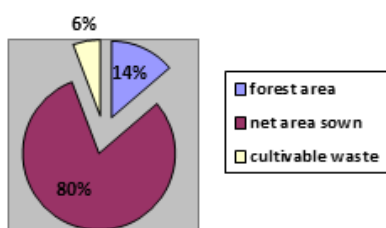
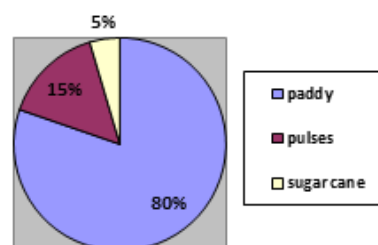


**Figure.5. Agricultural Land Use**

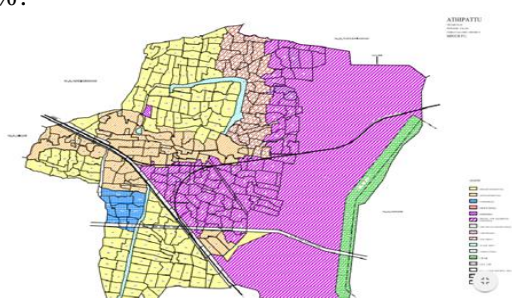
**Table.1. Block wise distribution of Irrigated Land**

Block	Net Groundwater Availability (M.Cu.m)	Existing Gross Draft for Irrigation (M.Cu.m)	Existing Gross Draft for Domestic and industrial water supply (M.Cu.m)	Existing Gross Draft for all uses (M.Cu.m)	Allocation for Domestic and Industrial Requirement supply upto next 25years (M.Cu.m)	Net groundwater Availability for future Irrigation Development (M.Cu.m)	Stage of Groundwater Development (%)	Category of Block
Sholavaram	88.56	67.62	3.30	70.92	3.49	17.46	80	Semi Critical
Minjur	111.35	113.36	35.71	149.07	35.87	-37.88	134	Over Exploited

Land use (Type of land)	Area (Sq. km)
i. Forest area	197.36
ii. Net area sown	1157.24
iii. Cultivable waste	83.26

**Figure.6. Type of Land Use****Figure.7. Crops distribution****Land use:**

**Area under principal crops:** a). Paddy -86304 Ha – 59.5%, b). Groundnut – 12795 Ha –11.22%, c). Pulses – 8600 Ha – 6.11%, d). Sugarcane – 50058 –3.41%.

**Figure.8. Distribution of irrigated Land Use**

The ground water levels in Tiruvallur did not fall change in years 2012 and 2013. The ponneri uses the water of Pulicat Lake which is 23km away. Number of villages in ponneri are 191 villages .It has the highest number of villages in Tiruvallur district. The Cooum river, flowing across the southern part of the district, has its origin in the surplus waters of the Cooum tank in Tiruvallur taluk and also receives the surplus waters of a number of tanks. It feeds the Chembarambakkam tank through a channel. It finally drains into the Bay of Bengal. The chief irrigation sources in the area are the tanks, wells and tube wells. Canal irrigation is highest in Minjur block followed by Sholavaram. The period from April to June is generally hot and dry. The weather is pleasant during the period from November to January. Usually mornings are more humid than afternoons. The relative humidity varies between 65 and 85% in the mornings while in the afternoon it varies between 40 and 70%.

**Needs for activity:** Meeting the sustenance needs of quickly developing urban populaces is prompting weight on agrarian frameworks and the earth. Little scale urban horticulture, concentrated business peri-urban farming, and

reinforced and enhanced rustic urban linkages would all be able to make imperative commitments to meeting urban nourishment needs.

Need zones for activity include:

- (a) Reinforcing limit for area use arranging in urban and peri-urban territories;
- (b) Planning and executing territorial advancement gets ready for incorporated urban and rustic improvement;
- (c) Fortifying expansion and preparing administrations for urban, peri-urban and provincial ranchers in maintainable farming and asset administration hones;
- (d) Enhancing sustenance circulation, stockpiling and showcasing frameworks, and advancing the improvement of agro-handling exercises to address the issues of developing urban populaces;
- (e) Enhancing the definition and organization of property rights to address clashes over area and water use;
- (f) Fortifying the limit of open organizations, ranchers associations and different associations to react to new agrarian open doors and issues coming about because of urbanization through composed and helpful endeavors.

**The push-pull impacts of urbanization on farming:** Urbanization both obliges and gives new opportunities to farming. Late research reports demonstrate that in every way that really matters the larger part without limits world's people advancement will happen in urban reaches; generally shrewd of rural urban movement designs driven by relative vocation open entryways. Around 35% of current urban masses advancement generally is attributed to natural urban development. Creating urbanization over the globe, in this way, has basic "push" and "compel" recommendations for agrarian examination for development. For the most part, urban zones were at first settled in alluvial fields and valleys. Quick urbanization has moved some of these productive grounds a long way from agrarian era. Besides, water and essentialness demands from creating urban groups put further goals on green era in various reaches. Thus, developing advancements and creation systems which manufacture data use profitability in agriculture, remains a high requirement for investigation.

## 2. CONCLUSION

For the most part everybody will have the same supposition that having a ground breaking strategy that which are vast scale deviations in area and building utilization and most structures display one or more infringement. To top everything there are any number if decimating extensive undertakings host at political stages without sufficient open deliberation on their need and suggestions from the all-encompassing perspective of the city. The government officials as the other hand accuse that the arrangements arranged by the experts regularly have a tendency to be hopeful rather than reasonable, uninvolved instead of helpfully dynamic and relentless, and in this way they legitimize their tasks as individuals touchy and commonsense.

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